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The effects of teacher race in the elementary school on student achievement test scores

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2008

ABSTRACT

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by

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M.S., Piedmont College, 1999
B.S., University of Florida, 1980

Doctoral Study Submitted in Partial Fulfillment
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Doctor of Education

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ABSTRACT

The racial and gender composition of elementary school teachers does not match those of the students and this may be contributing to an inequity of achievement scores between African American and European American students. This ex post facto causal comparative study compared three levels of elementary school diversity personnel staffing on Grade 4 African American student Criterion-Referenced Competency Test (CRCT) scores and differences between male African American scores and female African American scores in a suburban Atlanta county. Nine intentionally selected elementary schools were chosen representing 3 racial diversity personnel staffing levels including 39% to 50%, 25% to 27%, and 1% to 3% African American staffing. The analysis of covariance or ANCOVA and the analysis of variance or ANOVA served as the data analysis tool for both hypotheses. The results of the analysis indicated that when SES was used as the covariate, the students in the schools with a 39% to 50% African American staffing performed better than the 1% to 3% African American staffing on the Reading test while the funded Title 1 schools with 25% to 27% African American staffing had the highest reading scores. Efforts to close the student African American and European American achievement gap may be facilitated by addressing the SES issue as well as closing racial gap between teachers and students. This may support positive social change for all stakeholders of public education.

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CHAPTER 1: INTRODUCTION TO THE STUDY

Introduction

On January 8, 2002, President George W. Bush signed the No Child Left Behind Act (NCLB) as the cornerstone of his educational agenda. This act required that all states develop academic standards to meet federal requirements by the year 2014. Although the act focused on annual yearly progress (AYP) of schools in terms of teacher certification and student attendance, the primary goal of this legislation was aimed at improving student performance.

Research indicated teacher race and gender affects student test scores. Zirkel (2002) found more profound effects on student test scores may occur when there is a both a race and gender match between the teacher and student.

The problem of lack of teacher diversity has been identified as acute at the elementary level where there is a vacuum of role models for minority students, which have been noted to be necessary for students in terms of attention, memory, and motivation for over 30 years (Bandura, 1977). Having adequate role models is necessary for learning. Bandura (1977, 1986) found that learning is accomplished by watching others model behaviors and attitudes. The lack of a diverse teaching staff may be contributing to sustaining the problem. According to Smith, Mack, and Akyea (2004), as the proportion of European American teachers grew, role modeling that might encourage minority students to pursue careers in education decreased. This further decreased the ratio of minority teachers to minority students in the schools.

There have been studies examining the shortage of minority teachers, and particularly African Americans in elementary schools (Gordon, 2000, Irvine, 1988; National Education Association, 2001). Smith, et al. (2004) reported African-American teachers represented approximately 1% of all elementary teachers while African American students comprise approximately 40% of the student population nationally. Smith et al. (2004) stated, “The racial mismatch between students and teachers has reached the point that many students of color can go through 13 years of public education (k-12) without meeting a single teacher from their same racial group” (p. 76). As more racially diverse students enter the U.S. school system, there is need to address this mismatch.

This study attended to Walden’s mission for social justice and change because it addresses the problem of the racially unbalanced elementary teaching personnel that is presently in America’s schools. A detailed discussion of all aspects of the literature pertaining to this problem was presented in Section 2 of this doctoral study.

Problem Statement

The problem addressed in this study was the gap in literature addressing the issue of the composition of teaching personnel is not reflective of the racial and gender make up of the students who attend public schools. This is a problem because inequities in achievement test scores between African American and European American students is due, in part, to the gender and racial makeup of teachers (Moore & Herndon, 2003). Although performance gaps appear to be closing, continued efforts to close the gap in teacher staffing may result in greater gains for students (Dee, 2006; Zirkel, 2002).

According to Gordon (2000) there are many possible factors contributing to this problem. Some factors include the feminized school culture, low pay, societal and cultural expectations, and lack of familial support.

Nature of the Study

This study was a quantitative causal comparative ex post facto design. This design investigated the differences between the levels of the independent variables on the dependent variables. Results are not able to rule out other possible explanations for differences found in student achievement that are not included in the research study. Because this design does not rule out other explanations for differences found in student achievement, one will need to be cautious in interpreting the results. Differences in application of treatments was not of concern with this study as participants have received no treatments other than attend elementary schools with different levels of diversity personnel staffing.

The major focus of this quantitative ex post facto causal comparative design study included gathering and analyzing the Georgia Criterion Referenced Competency Test (CRCT) scores from students in three levels of teacher diversity staffing to investigate the relationship between student test performance and different levels of diversity personnel staffing. The three staffing levels of racial diversity personnel staffing included 39 to 50%, 25 to 27%, and 1 to 3% African American. All the Grade 4 African American students who completed the CRCT and who attend one of nine elementary schools in a suburban Atlanta county were chosen based on the level of diversity staffing of the elementary school they attend. The sample size of nine elementary schools was adequate

for this study because these schools encompassed all of the Gwinnett County schools that fall within the three ranges of diversity personnel staffing. The population consisted of all Gwinnett County Public Schools. The sample size was adequate for 95% confidence level and a 5% error.

The researcher used the CRCT to measure student performance. This criterion-referenced test is designed to measure how well student acquire and learn Georgia's performance standards (GPS) and the quality core curriculum (QCC). The reliability of the Criterion Referenced Competency Test testing instrument has also been considered. According to the Georgia Department of Education (2007):

> In order to obtain the most reliable and accurate test results from younger students, the state looked at how other states assessed students in the early grades and the procedures identified by educational research as the most important to follow. Key factors taken into consideration include number of answer choices, breaks during testing, and having certain aspects of the assessments read to the students by the teacher. (retrieved from DOE website, 5/30/2007)

In this research study, the independent variables of racial diversity and gender cannot be manipulated as they have already happened. The dependent variable of the test scores were observed for significant effect between the groups. The analysis of covariance (ANCOVA) was used for the method of data analysis for all of the hypotheses while controlling for SES. The schools' percent free/reduced lunch served as the ANCOVA covariate.

Research Question and Hypotheses

1. Does the racial diversity of the elementary school staff affect African American student standardized test results?

2. Does the racial diversity of the elementary school staff affect male African American students differently than female African American students?

In addition to these research questions, the following hypotheses were examined:

H_0: There will be no significant difference among schools that employ 39% to 50%, 25% to 27%, and 1% to 3% African Americans on all students who completed the Grade 4 CRCT standardized tests while controlling for SES.

H_1: There will be a significant difference among schools that employ 39% to 50%, 25% to 27%, and 1% to 3% African Americans on all students who completed the Grade 4 CRCT standardized tests while controlling for SES.

H_0: There will be no significant differences among schools that employ 39% to 50%, 25% to 27%, and 1% to 3% African Americans between African American male and female students who completed the Grade 4 CRCT standardized tests while controlling for SES.

H_2: There will be significant differences among schools that employ 39% to 50%, 25% to 27%, and 1% to 3% African Americans between African American male and female students who completed the Grade 4 CRCT standardized tests while controlling for SES.

An Analysis of Covariance (ANCOVA) was used to analyze each of the two hypotheses. The controlling variable in all of the analyses was the SES, the percent free/reduced lunch.

Comparisons on the staffing main effect, while controlling for SES, with means being averaged across the male and female African American students and comparisons

on the gender main effect was completed using an Analysis of Covariance (ANCOVA). These research and analysis methods fulfilled the intent of the investigation by comparing differences in student performance and the three levels of diversity personnel staffing.

Purpose of the Study

The purpose of this ex post facto causal comparative study was to test that cultural context impacts learning, and compared the differences between the racial diversity of elementary teaching personnel and test scores of African American students, controlling for SES, at nine Gwinnett County Schools. The independent variables were defined as the three levels of teacher diversity personnel staffing; 39% to 50%, 25% to 27%, and 1% to 3% African American and gender. The dependent variables are generally defined as CRCT scores in five subtests; Language Arts, Reading, Math, Science, and Social Studies. The control and intervening variable, SES, is operationally defined as the percent free and reduced lunch and was controlled in the study.

A study by Zirkel (2002) supported the purpose of this study linking student outcomes with teacher-student race and gender matches. Zirkel found both racial and gender matches between teacher and student positively affected student outcomes. Zirkel suggested teacher-student gender and race-matches and help young people develop an understanding of their placement within society and of what possibilities will be available to them.

The lack of an available hiring pool from which to draw African American teachers suggested African Americans are not choosing teaching as a career in sufficient numbers to fulfill the need. Karunanayake and Nauna (2004) found a close relationship

between race and students' identified career role models and perceived role model influence. In addition to modeling educational activities, models communicate cultural and career cues to students. In terms of the educational environments, teachers can model appropriate ways of thinking in addition to such things as study skills, problem-solving skills, and other educational activities.

Further research was called on by McDonald (2003) who suggested more research be done in the area of gender balancing in elementary schools. He, more specifically, stated that the impact on minority students who do not have access to a male role model of the same ethnicity be studied. With the advent of the NCLB legislation and the effort to increase student test scores such as teacher certification, attendance, and teacher training programs, all avenues aimed at boosting student achievement should be investigated.

Theoretical Basis for the Study

Bandura's (1977) Social Learning Theory provided a theoretical basis for this study that examined the effects of teacher race role models on student performance. According to Bandura, social learning comes from observing modeled behaviors, attitudes, and emotional reactions of others in a social context. These observations helped students learn important behavior cues and other necessary social skills. Bandura stated, "Most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action" (p.22). Bandura found role models

influence student efficacy. He found increased influence when multiple role models are available to affect student efficacy.

Related is the Social Development Model of Learning of Vygotsky (1978). This theory also examined the central role of social learning and the fundamental role interaction plays in the development of cognition. Vygotsky's Social Development Theory suggested learning communities transfer knowledge through social customs, language, and symbolism. Vygotsky asserted that all knowledge is learned in the sociohistorical context where all learners are active participants in their learning communities. Vygotsky's theory suggested that these learning communities translate social customs, language, and symbolism of different cultures to the learner. The absence of representation of such cultures in the school environment suggests many of these customs will not be translated.

There are a number of variations of a framework that addresses cultural diversity and the integration of culture and race into the classroom. One such framework is what Ladson-Billings (1994) called the culturally relevant/responsive pedagogy. This model draws upon the broad constructivist viewpoints of Bruner (1986, 1990, 1996), with the basic premise stating that learning is an active process in which learners construct new ideas or concepts based on their current or past knowledge. Others such as Gay (2000), Klug and Whitfield (2002), and Townsend (2002) have offered similar models. More recently, Baker and Digiovanni (2005) outlined the culturally appropriate pedagogy. This model defines the culturally appropriate framework as one that integrates different racial and ethnic groups into the academic program and is based on the theory that the cultural

context impacts learning. Student performance may increase if teachers are representative of multiple cultures and perspectives.

Definition of Terms

African American: A person having origins in any of the Black racial groups of Africa. Terms such as Haitian can be used in addition to Black or African American (NCES, 2003).

CRCT: Criterion Referenced Competency Test. The Georgia CRCT is designed to measure how well students acquire the skills and knowledge described in the Georgia Performance Standards (GPS) and the Quality Core Curriculum (QCC).

Performance: Performance include factors such as past success, amount of effort necessary, need for assistance, patterns of progress, task difficulty, task persistence, and the belief in the effectiveness of instruction (NCES, 2003).

Racial/ethnic group: These groups are delineated by a classification system, which indicates general racial or ethnic heritage based on self-identification, as in data collected by the Census Bureau or on observer identification, as in data collected by the Office for Civil Rights (NCES, 2003).

Socioeconomic status (SES): The SES index is a composite of five equally weighted, standardized components: father's education, mother's education, family income, father's occupation, and household items. The terms high, middle, and low SES refer to the upper, middle two, and lower quartiles of the weighted SES composite index distribution. In this study, the SES indicators will be the percent free and reduced lunch. (NCES, 2003).

Standardized test: A test composed of a systematic sampling of behavior, administered and scored according to specific instructions, capable of being interpreted in terms of adequate norms, and for which there are data on reliability and validity (NCES, 2003).

Standardized test performance: Standardized test performance is the weighted distributions of composite scores from standardized tests used to group students according to performance (NCES, 2003).

Assumptions, Limitations, Scope, and Delimitations

The scope of this study centered on comparing the dependent variable, or the CRCT test scores in each of the five areas it is given; Language arts, reading, math, social studies, and science, with the three levels of diversity personnel staffing and the levels of gender.

Creswell (2003) suggested using delimitations to narrow the scope of a study. According to Creswell (1998), delimitations are parameters that, "The researcher uses to narrow the scope of a study" (p.148).

The delimitations of this study are:

1. The sample consists of nine schools in Gwinnett County, Georgia.
2. The population consists of all Gwinnett County Public Schools.
3. All CRCT scores of African American students in Grade 4 scores were used.
4. The different levels of diversity staffing are comprised of schools with different staff totals. The three staffing levels of racial diversity personnel staffing include 39% to 50%, 25% to 27%, and 1% to 3% African American.

It may be assumed, based on the subsequent literature review, that there is a performance gap between African American and European American students (Barton, 2003; Gordon & Rebell, 2007). It is also assumed all students have the capacity to perform similarly on performance assessments. This gap in performance may be the result of a combination of cultural, familial, and social forces acting upon the student. It is also assumed that the Georgia CRCT is the appropriate measurement of how well students acquire and learn Georgia's performance standards (GPS) and the quality core curriculum (QCC). It is also assumed the genders will achieve at the same academic levels.

Creswell (2003) stated that limitations are used to "identify potential weaknesses of the study" (p.148). The limitations of this study are:

1. The sampling procedure decreases the generalizability of findings. Results are specific to the researcher's county of employment, Gwinnett County, Georgia, and are not generalizable to areas outside of this domain.
2. Sampling was limited to nine schools in Gwinnett County. All Grade 4 African American student CRCT scores who attend these nine schools with three levels of racial diversity personnel staffing including 39% to 50%, 25% to 27%, and 1% to 3% African American were used.
3. Some sample students may have limited time at their respective schools. This would indicate the effect of teacher race would be limited.
4. Home variables other than SES may have impacted test results. Variables such as home language, number and quality of experiences outside of

school, other cultural and economic factors, or prior histories of the participants may have also impacted results.

5. This research study was limited to results gained from the ex post facto causal comparative design.
6. This design does not rule out other explanations for differences found in student achievement. This study looked at causality and not to relationship.
7. The teacher diversity percentage used in this study is a dynamic rather than static figure. Teacher attrition and yearly hiring practices occur regularly and contribute to variations in teacher personnel. Therefore, teacher diversity mean is considered an average figure and indicates a general pattern of personnel staffing found within the school.
8. Data other than standardized tests might link the performance of students directly with the teaching personnel. Variables such as the quality, training, and experience of the teaching personnel, and available economic resources of the school are examples of variables that may affect student outcomes.

Social Significance of the Study

A study on the effects of teacher race on performance of elementary age students is important for many reasons. First, this study sought to provide concrete data to compare the effects of different levels of diversity hiring and its impact on students at the

elementary level. With NCLB requiring all states to develop academic standards to meet federal requirements by the year 2014, all avenues to increase student performance should be investigated. Information gleaned from this study may be useful to aid principals in hiring decisions to promote a more multicultural and diversified personnel within schools. The resulting recommendations for recruitment will help teacher preparatory schools and universities interested in attracting African American elementary teachers to their schools. This study contributes to a larger body of knowledge nationally and globally and impacts communities through raising awareness in the educational community of the need for a greater diversity in the elementary school teaching personnel.

In terms of professional application, working to support diversity in elementary schools, one of the primary goals of the Gwinnett County Public School System, is manifested in continued personal focus through further research. Working within the county to effect positive change, while meeting the needs of residents, is the best expenditure of resources and effort. Empowering people through education and identifying important needs while offering positive career choices will help bring a racially balanced teaching force to our county classrooms.

This research took place adjacent to the birthplace of the Civil Rights struggle. As the country moves forward, this study seeks to address the value of diversity in elementary schools. This study speaks loudly for social change. Carriuolo (2004) notes Cheryl Brown Henderson, the daughter of one of the plaintiffs in the Brown v. Board

decision in 1954, as having suggested that diversity in the classroom should start with the teacher at the front of the classroom.

Transition Statement

Dewey (1916) wrote, “The conception of education as a social process and function has no definite meaning until we define the kind of society we have in mind” (p.97). Understanding this problem within the cultural and historical context, deciding what kind of society is needed, and making necessary changes to achieve this society is the basis for this work. The purpose of this research includes increasing public discourse and helping to illuminate the parameters and extent of the problem. The hope of this study is to provide an understanding of the relationships between teachers and students while investigating the extent to which a diverse working force impacts students in the elementary classroom.

Conclusion

This study sought to uncover relationships between the racial diversity of elementary teaching personnel and performance of African American students. Section 2 provides a review of the relevant scholarly literature pertaining to racial and gender diversity, role models, and an historical perspective contributing to the problem. Section 3 provides the design and approach of the research study. In section 4, the reader will find the conclusions of the study. Section 5 will complete the study with information regarding future recommendations for the educational community.

CHAPTER 2: REVIEW OF LITERATURE

Introduction

African American and male teachers are currently in the minority in U.S. educational environments. This review of literature will provide a discussion of the many aspects of diversity within the elementary school and will conclude with considerations for recruitment of African American and male teachers. Because historical precedent contributed to the current dearth of African American and male teachers, the first part of section two includes a history of both African American and male teachers.

Next, the current status of race and gender diversity of students and teachers is discussed. Diversity within the educational context is the focus and a rationale for a diverse teaching force is suggested. A concluding discussion on the factors contributing to the lack of teacher diversity in the elementary schools will be provided. Current professional research literature on role models and culturally relevant practice will be discussed as it relates to its direct application to this research study. This discussion supports benefits to students of having adequate racial, cultural, and gender representation at the teacher level.

The strategy used for searching the literature was initially focused on uncovering historical legislation that may have contributed to the present racial and gender makeup of the current teaching force. To obtain these documents, visiting the local college library was necessary to obtain hard copies of historical and legislative books on the American education system and African-Americans in education. Once the historical and legislative documentation had been obtained, focus changed to uncovering current scholarly

research on teacher diversity, role models, and multiculturalism. For this, the researcher employed electronic database searches of all available Educational Abstracts such as ERIC, JSTOR, and those available at the Walden University Library Resources site. Also searched were the data-gathering educational research institutions such as National Center for Education Statistics (NCES) and National Education Association (NEA) as well as sites related to current legislation such as the Department of Education (DOE) web site. Also used were current databases containing full-text dissertations, journal articles, and on-line books.

Overview of the Legal History of African American Teachers

According to Perkins (1989) because of political and economic reasons, education for African Americans was a different experience for those in the free north compared to experiences of African Americans in the slave-south. The Naturalization Law of 1790 denied United States citizenship to African immigrants (Spring, 2001). For the African American slaves who lived in the south, education began on the plantations illegally, where it was run by women who had a small amount of education. It was done in clandestine meetings and was intended only to pass on reading and writing to other slaves. According to Spring, the reason for the illegality of this form of education was because southern states feared slave rebellions. By forbidding the education of the slaves, those in authority sought to maintain illiteracy and ignorance as a means to, “maintain economic exploitation of the labor of enslaved Americans” (p.215). Spring further noted that of the enslaved African Americans living in the south, only a small percentage were

literate and education was practiced with the intention of supporting the low-skilled labor used in the cotton industry.

Spring (2001) reports that in the northern states free African Americans had better economic means, were better educated, and as supporters of integration, wanted their children educated with the European American population. Spring also states that despite their freedom, only approximately 7% of this population was literate in 1863, and the African American middle class of the free north wanted the African American community to be responsible for educating their youth in order to foster the traditions, values, and cultural ideologies being passed down from generation to generation.

Spring (2001) suggests the years following the Civil War brought many legal challenges including African Americans seeking to gain citizenship and fighting segregationist laws. LaMorte (2002) asserts that during the Reconstruction period, southern states adopted Jim Crow laws intended to prevent contact between African Americans and European Americans by requiring the use of separate public facilities. In the Dred Scott decision in 1857, the Supreme Court denied African Americans the right to be United States citizens. Dred Scott was an African American who, after moving to a slave state after enjoying freedom living in the free state of Missouri, sued to win his freedom and citizenship. Almost a decade later, the Civil Rights Act of 1866 was enacted and all persons born in the United States, except Indians were declared to be citizens.

Spring (2001) suggests the end of the Civil War in 1865 saw the ratification of new and important legislation. In 1868, The 14th Amendment to the U. S. Constitution was ratified, providing equal protection under the law. LaMorte (2002) reports in 1895,

The 14th Amendment was restricted when the Supreme Court found in the Plessy (1896) case, that segregation was legal in the public realm including the public schools. Citizenship rights of African Americans eroded in the south in the decades following this decision. It was not until many years later that African Americans gained political equality with those of the European Americans. Henderson (2004), the daughter of Brown whose namesake was used in the historic Supreme Court case, Brown vs. Board of Education noted, "The amendments enacted by Congress in 1865-1868, and 1870 but not implemented until nearly 100 years later when Brown vs. the Board (1954) forced our country to keep the constitutional promises that are inherent in those amendments" (p.21).

Throughout Reconstruction and Post-Reconstruction of the 1880s to the 1950s, the profession of teaching in the African American south was viewed as an honorable and worthwhile profession (Lewis, 2006). African American teachers had prestige and community standing throughout these years continuing to the 1960s. Comer (1988) and McCullough-Garrett (1993) reported the stature African American teachers had in the south typically meant they became community leaders and often set the standards for appropriate language, behavior, and dress.

It was the middle class African American teachers who formed what was to become a lasting heritage of African American education. African Americans groomed others to take over educational positions. According to Perkins (1989), this allowed them to impart values on youth they thought were lacking in the European American community, while insuring them professional positions. These ideas that began in the

north spread to the south shortly after the Civil War. Spring (2001) notes that while literacy rates started at 7%, “Within a ninety-year period after emancipation, the literacy rate jumped to 90 percent” (p.220).

If the African American teachers enjoyed social success in the early 1900s, it was not because of funding forthcoming from the federal government. Spring (2001) noted that because of the lack of equal funding of racially segregated schools of the early 1900s, the Anna T. Jeanes Fund, comprised of African American teachers who, instead of engaging in their primary job of teaching students, spent most of their time raising funds for African American schools. Spring stated of this fund’s success when he wrote, “Between 1913 and 1928, Jeane’s teachers raised approximately 5,000,000 dollars” (p.226). Additional funds often came from private citizens.

During the early 1900s, because of racial inequalities and a lack of other viable opportunities imposed upon them by society, many African Americans chose teaching as a career choice. Cole (1986) noted that as early as 1950, before the Civil Rights Act of 1967, “Teaching accounted for nearly half of African American professional workers, compared to less than one quarter of European American professionals” (p.326).

A landmark Supreme Court ruling, Brown vs. Board of Education, ruled in 1954 against segregation of public schools, and largely ended the earlier separate but equal ruling. According to Spring (2001), the Brown case was brought forth when Brown’s daughter was denied the right to attend a European American elementary school, forced instead to be bussed 21 blocks to an African American school. Although the Supreme Court did not find the two elementary schools inherently unequal, and initially ruled

against Brown, new evidence was brought before them that provided the basis for overturning the separate but equal doctrine.

As a result of school desegregation in the 1960s, the traditional African American schools disappeared and were integrated with European American schools. Dougherty (1998) reported even though integration was law, European American parents refused to allow their children to be educated by African American teachers. The result of these attitudes caused a mass exodus of African American teachers from the classroom.

The homogeneity of the elementary teaching force has always been at issue. Foster (1989) reported that in 1950, before the Civil Rights Act, almost half of the African American professionals in the United States were teachers. These legal and political factors have contributed to trends of decline in the presence of African Americans in public schools.

In 1950, according to Foster (1989), almost half of all African American professionals working in the United States were teachers. Hawkins (1994) stated in 1954, the year of the Brown decision, 82,000 African American teachers educated the nation's two million African American school children and served dual roles as counselors, role models and spiritual leaders. Clem (1986) noted during the time of the Brown decision, African Americans were being trained as teachers more than at any other time in American history. Kunjufu (2002) added these teachers were being trained by some of the best minds in the African American community. 12 years after the Brown decision, over 38,000 African American teachers had lost their jobs.

Taking the place of these African American educators were European American teachers who had little training, knowledge, and understanding of African American culture. Foster (1994) explained that the transfer of control over the educational system from African Americans to European Americans caused by desegregation unleashed a distrust in the educational system by African Americans because the African American community no longer held power or had standing in the system. Gordon (2000) supported this view when she found that African Americans felt, "With desegregation came the loss of control by the African American community over the education, and hence the future, of African American youth" (p.20). Tillman (2004) agreed the magnitude of this job loss had a devastating effect on the African American community and also continues to adversely affect African American achievement. It is important to consider this history when addressing the issue of diversity in schools so teacher race inequities can be rectified. Further, it is necessary for educators to work today to achieve equality in education so all students can work to their full potential.

Student Race Diversity

Over the past 30 years, research has indicated a trend showing a growing number of minority students in public schools. According to the U.S. Department of Education (1993), in 1991, 21% of public elementary and secondary students were classified as minority. Nine years later, that number had grown. In 2000, 39% of elementary and secondary school students were members of a minority group. 17% were classified as African American, 17% as Hispanic, and 5% of other racial/ethnic groups (U.S. Department of Education, 2002). Kendler (2002) reported that minority enrollment in

elementary and secondary education increased from 24% in 1976 to 40% in 2000. Additionally, Latinos almost doubled in this same time period from 6.4% in 1976 to 12% in 2000. During this same time period, Asian/Pacific Islander students increased a whopping 116% from just over 500,000 to almost 1.2 million.

According to the National Center for Education Statistics (NCES, 2003), in 1993 minority students comprised 30% of the elementary student population. The National Commission on Teaching and America's Future (1996) study reported nearly one-third of students were minorities (NCTAF, 1996) in that year. In 2002, that number rose to 38% and one year later NCES (2003) reports that minority students made up almost 40% of the school-age population nationally. These trends are expected to continue. It is anticipated that in just over 30 years, European American students will be a minority in public education.

Teacher Race Diversity

The racial, ethnic, and gender diversity of teachers has not kept pace with the changing demographics of students. According to the Equal Employment Opportunity Commission (2006), the percentage of African American public elementary school teachers in the United States dropped from 12.3% in 1982 to 8.7% in 2004. This is true with other populations such as Latino, Asian, Indian, and Native Americans. Shen, Wegenki, and Cooley (2003) reported that although the percentage of Hispanic teachers increased 86% over the 12 year period from 3% in 1987-1988 to 5.6% in 1999-2000, overall, "the public teaching force was essentially no more diverse in 1999-2000 than it was in 1987-1988. Minority teachers increased by a mere 0.4 points" (p.5). Smith and

Ingersoll (2004) reported that of the 8% of African Americans currently in education, only approximately one percent of all African American teachers work at the elementary level, with the remaining 7% working at the middle and high school level.

Student Gender Diversity

In considering the effect gender has on performance for both male and female students, Barnett and Rivers (2007) found that both boys and girls are doing better in overall achievement. Barnett et al. cited data from the National Assessment of Educational Progress that shows that over the past 30 years boys test scores are improving. More boys are attending and graduating from college with bachelor degrees. Rivers further stated the problem is found among disadvantaged students such as African American and Hispanic students in inner cities. The gaps in achievement are greater between students of different races rather than gender.

Longitudinal studies examining gender and learning differences, such as the National Center for Education Statistic's Early Childhood Longitudinal Study (2003), found that with math and reading, the two genders perform similarly when entering kindergarten. By third grade, boys outperform girls in math and science, while the girls outperform boys in reading. Student scores in the National Assessment of Educational Progress (NAEP, 2005) support these findings. This trend continues through high school with the gender achievement gap of 17 year old boys being 31% of a standard deviation below 17 year old girls in reading, a deficit of approximately one grade level (Dee, 2006). In science and math, girls of this age outperform boys nearly 22% of a standard deviation lower in science, and 10% of a standard deviation lower in math.

Teacher's gender may affect students of different genders differently. Dee (2006) investigated the teacher gender effect on student gender by using the National Education Longitudinal Survey (NELS) which contained data from 25,000 eighth-graders in 1988. Results from this study:

> Confirmed that a teacher's gender does have large effects on student test performance, teacher perceptions of students, and students' engagement with academic material. Simply put, girls have better educational outcomes when taught by women and boys are better off when taught by men. (Dee, p.69)

Further, Dee (2006) found that in science, social studies, and English, having a woman teacher raises the achievement of female students roughly four percent of a standard deviation and lowers the achievement of male students by 4%.

In terms of motivation, Marsh and Martin (2005) found no significant interaction between student gender and teacher gender in their study of nearly 1,000 junior and middle high school students in Australia. In this study girls were found to have better relationships with female teachers whereas boys had equally good relationships with teachers of both genders.

Teacher Gender Diversity

The gender imbalance of the elementary school began during the Civil War, when over 600,000 men fought and died (Spring, 2001). Some of these men were teachers who left classrooms for the battlefield. Prior to this time, the majority of teachers were male. This left a lack of available men teachers. Women teachers filled the void taking the vacant teaching jobs created by the war. The elementary school continues to be a gendered occupation with 88% of teachers being women (Sargent, 2001).

This problem is not specific to the elementary school as there also is also an increasing gap between male and female teachers at the high school level. While men represented half of secondary teachers in 1986, today they make up 35%. According to statistics compiled by the National Center for Education Statistics (2003) on the teaching force, there were no differences in the proportions of male and female beginning teachers in public and private schools.

Shen et al. (2003) found based on NCES statistics, the percentage of male teachers dropped 4.4% between the years 1987-1988 and 1999-2000. This pattern continued in 2003, according to the National Education Association (2003), when approximately 9% of teachers in elementary school were male. This figure was down from 14% in 1986. However, this trend appears to be changing. According to the United States Department of Labor, Bureau of Labor Statistics, (2005) of the 1,469,900 elementary school teachers, approximately 12% are male.

Lewis (2006) suggests African American males are especially underrepresented at all levels of education, including post-secondary education. This is especially true at the elementary level. Smith and Ingersoll (2004) report that of the 8% of African Americans currently working as teachers, only approximately 1% works at the elementary level, with the remaining 7% working at the middle and high school level. Of the few African American teachers currently working in the elementary schools, almost 75% are female (National Education Association, 2003). There is scant research addressing the concerns of African American males teaching at the elementary level. Of the European American

male educators, as with the African American males, large majorities are working at the middle, high, and college level.

Rationale for a Diverse Teaching Force

With the increasing diversity found in the student population and the lack of minority teachers in public schools, there is renewed discussion on the effects of teacher gender and race-diversity on student experiences and educational growth. There have been two studies that indicate that teachers impact student performance on standardized tests. Rivkin, Hanushek, and Kain, (2005) found data from the Texas Schools Project indicated that teachers have power effects on reading and math achievement. In a related study Rowan, Correnti, and Miller (2002) have documented that students learn differential amounts in a normal school year of 9 months or more depending on the teacher. Diversity has come to be associated with education as it relates to student performance and experience. There is evidence to support that a larger number of minority teachers could have an impact on the future lives of minority students. Foster (1997) reported on the positive effects African American teachers have on the lives of students based on biographical data of African American teachers. King (1993) documented a review which suggests the absence of African American teachers is a serious problem confronting the educational profession.

In higher education, there has been research supporting the value of diversity in the classroom and the positive effect it has on student-performance. Gurin, Dey, Hurtado, and Gurin (2002) found diversity experiences meaningfully and positively affected learning in higher education. Hurtado (2001) examined the positive student

developmental effects exposure to diversity-related campus activities and diverse peers had on students at UCLA. Maruyama, Moreno, Gudeman, Harvey, and Marin (2000) found that racial diversity increases the opportunities in the classroom and racially diverse classes enhance educational outcomes.

Teachers of different races may emphasize diversity related materials differently. Findings of Mayhew and Grunwald's (2003) study of the factors contributing to faculty's incorporation of diversity-related content support this point. Their research found that race is a very strong predictor, more so for males than females, as to whether faculty will incorporate diversity-related content into course materials. "NonEuropean American men are 88 times more likely to incorporate diversity-related materials in their classrooms than European American men: NonEuropean American women are only twice as likely to incorporate diversity-related content as European American women" (pg. 19). This particular study, while focusing on college faculty, illustrates the point of how teachers deal with diversity in different ways and how incorporation of diversity into curriculums can vary.

Having a mix of male and female teachers at the elementary level may help students in terms of having adequate role models. Shen, et al. (2003) suggested:

> The number of single parent homes, in conjunction with the limited communication between parents and their children, accentuate the argument for providing role models who represent both genders. We believe that students would be better served if provided both male and female role models throughout the educational process. (p.114)

More recently, Lynn (2006) found African American men's Culturally Relevant Pedagogy highlighted the role that African American men can play in the lives of urban students. Lynn stated these African American male teachers:

> Demonstrated a unique kind of cultural competence that helped them to be successful with "hard-to-reach" African American students. Their cultural competence included not only understandings about the children's culture but also information about their students' daily lives…this important knowledge was obtained via their experiences in the community. Their competence in African American cultural styles served as a foundation for their beliefs about teaching. (p.2418)

Lynn further suggested these African American male teachers fulfill roles as male role models who, with an understanding of street language, can communicate with troubled students experiencing difficulty in ways inaccessible to other teachers. It is their understanding of both the school and cultural environment that allows them a unique perspective of the human condition of many of their students. This places them in a position to assist students in very different ways. Morrell (2004) supported this in his finding that teachers' understandings of urban street culture, language, and music, can help foster long-term growth in the lives of urban students.

These studies support the value of having teaching personnel that are comprised of many races, ethnicities, and genders so learners may more readily learn from models similar to themselves. Duncan (2005) asserted African American male teachers act as role models and may be an important factor in the identity formation of African American youth.

There are conflicting reports on efforts made at addressing this issue. Although there appears to be some research addressing low population of male teachers, Wiest

(2003) stated, “Education researchers have paid little attention to issues surrounding the low and declining proportion of male elementary teachers” (p.62).

Zirkel (2002) found both racial and gender matches between teacher and student positively affect student outcomes. However, McDonald (2003) called for further research in the area of gender balancing in elementary schools when he concludes, “Future studies should address the need for ethnic diversity in the males entering the education field and the impact on the minority students who do not have access to a male role model of the same ethnicity” (p.101).

There may be ramifications to students academically and personally of having a lack of diversity in our elementary school teaching personnel. Kunjufu (2002) suggests a larger number of minority teachers could have an impact on the future lives of minority students. Gordon (2000) found that the perception amongst African American teachers is the lack of African American teachers leave children without role models and without the necessary encouragement to consider teaching as a career.

Factors Contributing to the Lack of Teacher Diversity

Moore and Herndon (2003) noted that according to recent data obtained from the 1999 National Study of Postsecondary Faculty, only approximately 5% of all full-time instructional faculty and staff were African American. The lack of African American teachers and faculty throughout the educational environment may be contributing to sustaining the problem. Further, in attempting to understand why more African American men have not chosen elementary school as a profession, the emphasis needs to be on the

experiences of these men in a cultural, economic, and historical context. Gordon (2000) wrote,

> Policies and programs in the past that have focused on structural and institutional barriers remain impotent without an understanding of the importance of history, culture, community attitudes, and expectations in shaping career choice, including the decision to embrace or eschew the teaching profession. (p.4)

Gordon's (2000) study investigated perceptions of African American teachers on the historical, cultural, and community forces contributing to African Americans not choosing education as a career choice. This study found three broad categories of reasons why African American teachers feel that African Americans are not choosing teaching as a career. The categories included economic, educational, and social/cultural reasons.

In terms of economic reasons, low pay, the high cost of education for the economic return, and that a host of more economically viable opportunities available to African American college students were reasons for them not to choose teaching as a career. According to Gordon (2000), "Although nearly all informants mentioned greater economic incentives as important in attracting and retaining teachers of color, money was not the pivotal reason students were resisting teaching as a career" (p.10). Gordon stated:

> Economic reasons focused on low pay, too much education for the return, and a wider range of career choices than for previous generations of African Americans. Educational reasons included inadequate K-12 schooling, negative school experiences, and lack of support in college. Social/cultural reasons centered on racism, lack of encouragement, and racelessness. (p.23)

Educational deterrents include negative experiences in elementary school and lack of support in college. Gordon (2000) found African American perceived European American teachers as generally unprepared and untrained to teach African American

youth. This leads to the perception that European American students have an advantage over African American youth in today's schools. This, in turn, contributes to negative attitudes of education and a lack of respect for the teaching profession among African Americans.

Experiences early in the educational process impacts career choices. Gordon (2000) suggested these early experiences, "determine how students see their teachers, how they are encouraged by the system and the ways in which they are labeled and responded to will mark their lives forever" (p.30). This is in support of the importance of teachers as contributing factors in forming positive perceptions of the educational system and of teaching. Further, Gordon noted, "How well teachers were prepared to teach diverse students and interact with students' families and communities appeared to be a crucial factor in altering the current shortage of teachers of color" (p.10). Carr (2002) argued that the economic and social image of the profession of teaching, the image of teachers themselves, and past elementary experiences contribute substantially to their decision to become elementary teachers. Carr also found a dominant theme emerging in his study as that of the influence of African American teachers as a model: "The impact of former male teachers and family members had a direct impact on their decision to enter the field of elementary education" (p.81).

Cultural obstacles included perceived racism and a lack of encouragement from family and friends within the community. According to Gordon (2000) career choices "grow out of common perceptions within minority families and communities" (p.4). When considering African American perceptions as viewed through the history of the

European American educational schooling system, causes for choices other than teaching begin to emerge:

> How one perceives the impact of schooling on one's community and culture, how one is currently experiencing schooling, and how schooling is seen as a determinant in one's future options, all combine to develop an image of schooling and its professional practitioners. These attitudes, often based on stories and experiences passed down through families and communities, either encourage or discourage young people in their consideration of teaching as a career. (p.4)

In terms of familial support, Gordon (2000) found that "teachers of color, parents, and community members tend not to encourage their youth to enter the field of teaching…so while the need for more teachers of color increases, encouragement decreases" (p.15). Gordon postulated, "The choice to enter a profession, any profession, is influenced long before college by the perceptions and attitudes held within the families, communities and schools from which students emerge" (p.2). Although the Gordon study provided valuable insight into reasons why African Americans choose not to enter education as a career choice, this study does not differentiate between the African American elementary teacher and those teaching on the secondary and post-secondary level.

Certification tests are another factor that may be contributing to the few numbers of African American teachers. Factors contributing to the few numbers of African American teachers include passing rates on the Praxis I test for admission to schools of education. African American candidates passed at the lowest rates, 53%, and European American candidates passed at the highest rates, 87%. The certification test Praxis II test found that European American candidates passed at the highest rates, 92%, and African

American candidates passed at the lowest rates, 65%. These results indicated that concern over these tests might be contributing to the lack of African American students choosing teaching as a career.

Research Studies on Role Models

One of the primary theories supporting the discussion on the importance of role models in a social context, and therefore diversity of the teaching force, comes from the social learning theory of Bandura (1977). Bandura suggested that learning is primarily accomplished through watching others model behaviors, attitudes, and emotions:

> Learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do. Fortunately, most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action. (p.22)

According to the social learning theory, the observer acquires the images of the behaviors as they are modeled in a four-step process in which clues as to appropriate behavior, emotions, and other skills are transmitted to the observer. These steps are (a) attention, (b) retention, (c) motor reproduction, and (d) motivation. Bandura (1986) stated that many cognitive, social, and psychomotor behaviors can be taught by observing respected adults.

Bandura (1977) suggested in the similarity hypothesis as it addressed how a learner chooses which adult model to emulate. In this hypothesis “Individuals seek career role models whom they perceive as similar to themselves regarding some easily identifiable characteristics because they assume that such role models’ experiences would apply to their own lives as well” (p.226). Therefore, it is important for the model to be

characteristically similar to the learner. Moreover, this study found individuals identify more with same-race role models.

Zirkel (2002) found that adolescents who had at least one same-race and same-gender role model showed better academic performance and had better achievement related goals than did students without these role models. According to Zirkel:

> Those students who reported having a race- and gender-matched role model showed relatively better academic performance more than a year after the initial assessment. The possession of a matched role model was positively correlated with achievement-relevant goals and an enjoyment of achievement-relevant activities. Students with a matched role model were also more likely to think about their futures and to focus on adults rather than peers as idols…Those students with a matched role model reported a greater investment in academic and achievement concerns irrespective of what career or professional position the role model held. (p.371)

According to Zirkel (2002), race- and gender-matched role models provide young people like-images to themselves in terms of gender and race. Through these images, young people develop an understanding of their placement in the world and of future possibilities available to them within the larger culture. Zirkel's findings link race- and gender-matched role models to students' investment in their future as well as their future academic success. These results depend upon both the race- and gender-matched role models and not to either one or the other. Zirkel stated:

> Whereas nearly all students in this sample listed at least one role model, the increased attention to achievement and academic performance is found only among those students with race- and gender-matched role models; and that is the central finding in this study. (p.373)

Karunanayake and Nauna (2004) reported similar findings on the close relationship between race and students' identified career role models and perceived role

model influence. However, findings of this study also found a lack of same-race role models are not necessarily a barrier for minority students. In addition to modeling educational activities, models also may be communicating other information such as cultural and career cues to the observer. In terms of the educational environments, teachers can model appropriate ways of thinking in addition to such things as study skills, problem-solving skills, and other educational activities.

Bandura's (2002) social cognitive theory provided further evidence as to the importance of role models for young learners. The concept of human agency explains how humans function in the world. Agency in the theory means people make a conscious volition to make things happen by their action. Social cognitive theory is composed of three modes of human agency: (a) personal, (b) proxy, and (c) collective. Of these modes, proxy agency deals with social modeling. Specifically, proxy agency enables people to get what they want by accessing the resources or expertise of others. According to Bandura (1997), people's efficacy, their assessment of their ability to solve whatever problems they are faced with, is influenced by their experience with their social models. Learners actively search for competent models to influence their self-image relating to their ability to solve problems through their opinions and other experiences. Further, Bandura found that similarity in characteristics between learners and social models significantly influences modeling effects in traditional classrooms. More importantly, according to Bandura, same-ethnicity models can be more credible and provide more opportunity for the learner to develop stronger efficacy beliefs and behavioral intentions than those models from other races and ethnicities. Bandura found that stronger efficacy

beliefs in their learning ability are developed when learners are exposed to multiple social models, and that a widely diversified group of models with different characteristics are superior to a single model.

These findings necessarily apply to the elementary age learner and can be connected specifically with elementary age learners and provide additional impetus and need for the present study. According to Bandura (2002):

> Social support raises perceived efficacy which, in turn, is accompanied by higher academic achievement and greater satisfaction with one's home and school life. At the elementary school level, maternal, paternal, *teacher*, and peer support all contribute to children's perceived academic efficacy. At the middle and high school levels, teachers' support fades from the picture, the contribution of maternal support declines and that of paternal support increases." (p.282)

Related is Vygotsky's (1978) social development model of learning. This theory examines the central role of social learning and the fundamental role interaction plays in the development of cognition. This theory suggested that cultural learning develops first on a social level, and then on an interpersonal level. Vygotsky asserted that all knowledge is learned in the sociohistorical context where all learners are active participants in their learning communities, accomplished within both the cultural and social context in which they live. Vygotsky's theory suggested that the practices of these learning communities are translated to learners through the social customs, language, and symbolism of the different cultures the learner's experiences. The internalization of the knowledge of these communities to the learner occurs on two planes of development, described by Vygotsky as the interpersonal and intrapersonal planes of development. According to Vygotsky:

> Any function in the child's cultural development appears twice, or on two planes. First it appears on the social plane, and then on the psychological plane. First it

> appears between people as an interpsychological category, and then within the child as an intrapsychological category. (p.163)

According to this theory, the development of intellect and knowledge are socially and culturally defined through interaction with the teacher primarily through language support rather than developed by the individual. It is important to understanding the crucial nature of the school environment and teachers as co-contributors and those who delegate beliefs, customs, and language of culture to the learner.

Research Studies on Culturally Relevant Practice

A cultural approach to pedagogy over the past number of years suggested that students should be approached in culturally sensitive contexts. Shen et al. (2003) reported that empirical studies over the past twenty years have found that culturally appropriate, responsive, and compatible pedagogies have been shown to be effective for minority students. Research investigating multiculturalism and culturally appropriate pedagogy shed light on the significant impact cultural context has on learning.

Irvine and Armento (2001) suggested culturally responsive pedagogy is interchangeably called culturally responsible, appropriate, congruent, compatible, relevant, and multicultural to describe a variety of teaching approaches in diverse classrooms. According to Ladson-Billings (1992):

> Culturally relevant pedagogy prepares students to effect change in society, not merely fit into it. These teachers support this attitude of change by capitalizing on their students' home and community culture. These teachers…empower students intellectually, socially, emotionally, and politically by using cultural referents to impart knowledge, skills, and attitudes. (p.382-383)

The foundation of this pedagogy is founded on four elements which have guided its development: a) Culture influences the teaching and learning process, b) teaching research is compatible with the principals of culturally responsive pedagogy, c) teacher knowledge and reflection are important considerations when implementing a culturally responsive lesson, and (d) high standards and high expectations are components of every culturally responsive lesson. (Irvine & Armento, 2001, pg.6).

Richards, Brown, and Forde (2007) defined a culturally responsive classroom as one in which:

> Effective teaching and learning occur in a culturally supported, learner-centered context, whereby the strengths students bring to school are identified, nurtured, and utilized to promote student achievement. (p.64)

Richards (2007) suggested culturally responsive pedagogy is comprised of three dimensions: (a) institutional, (b) personal, and (c) instructional. Richards suggests that teachers' values, prejudices, and biases affect relationships with students and their families and that by ridding negative feelings through self-reflection a teacher may contribute to student success by creating an atmosphere of trust and support for students and their families.

Gay (2000) defines culturally responsive teaching as one using the knowledge, prior experience, and styles of diverse learners to make learning more effective for them. Banks and Banks (2004) suggest there are a variety of culturally responsive activities that define a culturally sensitive classroom. For example, acknowledging and celebrating student differences as well as commonalities, validating cultural identities within the

classrooms through specific practices, and educating students as to the overall diversity of the world are ways in which a teacher can work to promote student performance.

There are multiple examples where cultural ideals are highly regarded, staunchly protected, and delivered by teachers who respect all aspects of the culture within local educational communities. One example of the importance of honoring cultural values of students is found in the First Nations institutions in Canada (Ball, 2004). Ball suggests the generative curriculum model, forged between First Nations and the postsecondary institutions in Canada, works to secure important cultural values of the indigenous Canadian people. According to Ball, First Nations is comprised of approximately 700,000 indigenous people in Canada who are working to maintain a sense of culture and identity community members and elders to, "plan, operate, and monitor programs for children and youth that are consistent with cultural values and that enhance positive cultural and community identity" (p.455). Although the primary goal of the First Nations educational program is to improve social conditions, community health, and economic conditions brought on by substandard forced schooling programs of the Canadian government, it is also at aimed at preserving cultural identity and improving student performance by combining Eurowestern academics with a culturally-sensitive indigenous curriculum.

The teacher, as deliverer of the curriculum is an important link in preserving these traditions. According to Ball (2004), training delivered by professionals of European ethnicity, "can shatter indigenous student's sense of cultural pride and seriously challenge their confidence in the validity of the cultural knowledge that they bring to the training" (p.455). Instead, community members acting as co-instructors share their cultural

experiences and knowledge of history of traditions, resulting in social support system that leads to better educational performance.

An attempt of Alaskan indigenous populations to preserve knowledge systems by including Native elders within the educational system is similar. Barnhardt and Kawagley (2005) reported one theme of the Alaska Standards for Culturally Responsive Schools is:

> The importance of drawing native elders into the educational process and utilizing natural learning environments in which the knowledge that is being passed on to students by elders takes on appropriate meaning and value and is reinforced in the larger community. (p.18)

Perhaps more importantly, Barnhardt (et al.) reports a strong positive correlation between the cultural emphasis in schools and native student academic achievement.

The Navajo and other southeastern tribes are an example of both the early success of tribally controlled schools and of the dangers to the culture of not having teachers who can teach language and customs of the tribe. In 1819, literacy rates among tribal schools were 90% before the Navajo and others were part of a forced removal to Oklahoma. Government interference, lack of funding, and legislation aimed at suppressing and obliterating tribally controlled school systems have contributed to the struggle of many of these cultures. According to Navajo epistemology, education is central to self-determination. Yet, according to Manuelito (2005), Native epistemologies are absent from teacher preparatory programs and few native teachers feel prepared to teach tribal language and culture. She further stated with the passage of the NCLB, culturally relevant curriculum will be sidelined for a more streamlined curriculum. Smith (2002)

calls on educators to resist these pressures and recognize indigenous epistemologies so these people can develop self-determination that will empower Native Americans.

Recruitment of African American Teachers

Legislation has avoided attempts at diversifying the teaching force. There are examples of past legislation that have neglected to focus at diversifying the teaching personnel in elementary schools. For example, on January 25, 1994, the 103rd Congress in Washington, D.C. released H.R. 1804 or Goals 2000: Educate America Act to, "To improve learning and teaching by providing a national framework for education reform" (Goals 2000, 1994, p.1). This act does not address the need to develop a multiethnic, multigender teaching force. Section 102, Goal 4, places the responsibility on the states and local school districts for addressing the need for teachers when it says that states and school districts are responsible for creating strategies to attract, recruit, prepare, retrain, and support the professional development of teachers so that there is a talented work force of educators (Goals 2000,1994). This document does not cite the need for a diversification of the teaching force or mention the importance of the recruitment of African American or other minority teachers. Additionally, Part C, Section 2301, of the Professional Development Demonstration Project of the Improving America's Schools Act of 1994 was released the same year with no mention of recruiting minorities into the education work force (IASA, 1994).

The National Commission on Teaching and America's Future (NCTAF) issued a report on the state of the teaching profession and the implications it has for student learning. Their report, Teaching and America's Future (NCTAF, 1996), avoided

discussion on the importance of a diversified teaching force and included instead one sentence which suggested addressing the cultural mix of society, “High-poverty urban and rural schools face persistent hurdles in hiring the teachers they need, and across the nation there is a critical need for many more teachers who reflect the racial and cultural mix of students in schools” (p.8).

Title 2, Section 210 of the NCLB generally addressed the teacher issue as the legislation is intended to provide grants with the intention of recruiting, preparing, and training, high quality teachers and principals. Again, absent from the legislation is the mention of the importance of creating a multi-ethnic, multi-racial work force (NCLB, 2002).

While recruitment at the national level is lacking, local efforts have worked to increase numbers of African Americans in education. Williams (2001) cited that school districts across the country have placed a strong effort on recruiting African American males into the teaching profession. Almost 75% of minority teachers have extensive experience of 10 or more years of teaching. Smith & Ingersoll (2004) report a significant number of existing minority teachers are expected to retire in the coming years.

South Carolina’s Call Me Mister program is aimed at recruiting African American male elementary teachers: According to Norton (2005):

> This model is becoming a model for the rest of the country. It was launched when Clemson University and three historically African American colleges – Benedict College, Claflin University and Morris College – created the Call Me MISTER program to recruit, train, certify and secure employment for African-American men as teachers in the state’s public elementary schools. The first class of MISTERs graduated in May 2004 and entered classrooms as strong, positive role models, mentors and leaders. (p.27)

Other programs target the need for more African American teachers. Bennett, Cole, and Thompson (2000) reported Project TEAM (Transformative Educational Achievement Model) is designed to address the shortage of teachers of color by increasing the number of students from underrepresented minorities at Indiana University who enter a teacher education program (p.12).

Henderson, the daughter of one of the plaintiffs in the Brown vs. Board 1954 decision realized many African American teachers were retiring with very few African American students in the educational pipeline to take their places. She started the Brown Foundation in Topeka, Kansas to fill the need for more African American teachers.

In Michigan, Marygrove College is working with the Detroit Public Schools using the grant, *Implementing Urban Mission,* and designed a program called Marygrove Griots. Kezie (2003) reported the goal of this program is to prepare African-American men, many of whom come from other professions to become teachers.

Concluding Statement

The question becomes how public schools will best serve the needs of this increasingly diverse group of students with an increasingly less diverse teaching force. These considerations seem to be taking a back seat to standardized testing. Chapters 3, 4, and 5 has addressed this complex problem by providing evidence that teacher race has effect on the performance scores of African American elementary grade 4 students.

CHAPTER 3: METHODOLOGY

Introduction

The major focus of this quantitative ex post facto causal comparative design study was to investigate the differences between different levels of diversity staffing and student performance. However, this design was not be able to rule out other possible explanations that are not included in the research study, for differences found between staffing diversities in student achievement. All African American students who took the grade 4 CRCT standardized test were intentionally chosen based on the level of diversity personnel staffing of the elementary school they attend. The three staffing levels of diversity personnel staffing include 39% to 50%, 25% to 27%, and 1% to 3% African American. The baseline data for this quantitative study came from the Georgia CRCT. The collection of the data took place in November 2007. The data was disaggregated into male and female categories.

Research Design and Approach

The optimal approach for this research, one in which the independent variable cannot be manipulated as it has already happened, is the ex post facto causal comparative design. This design is optimal for this study because there is no manipulation of the independent variables (racial diversity, gender, SES). The researcher was able to investigate differences in the dependent variables (test scores) without manipulating the a priori independent variables (Creswell, 1994). According to Gay and Airasian (2000),

"Causal Comparative studies attempt to establish cause-effect relationships; correlational studies do not….Causal-comparative studies involve comparisons, whereas correlational studies involve relationship." (p.350)

This design has uncovered differences between test scores of students who attend schools comprised of three levels of diversity personnel staffing. The three staffing levels of racial diversity personnel staffing include 39% to 50%, 25% to 27%, and 1% to 3% African American, and two levels of gender diversity of students on student performance scores while controlling for socio-economic factors. This study includes all African American students who completed the Grade 4 CRCT standardized test in each of the teacher diversity personnel staffing environments.

Setting and Sample

The county, located in suburban Atlanta, Georgia, has approximately 75,000 elementary students who range from Kindergarten to fifth grade. Of these, approximately 10,000 are fourth grade students who attend school in the 63 elementary schools.

The researcher intentionally selected 9 elementary schools that fall within three levels of racial diversity staffing. The three levels of racial diversity staffing include 1% to 3%, 25% to 27%, and 39% to 50% African American. From these nine schools, the researcher gathered scores from 395 African American students who took the Grade 4 CRCT test. In teacher diversity group 1, 1% to 3% African American, there were 164 students, 94 males and 70 females. Group 1 has a mean average of 21% free/reduced lunch. For this study, this 21% free/reduced lunch is considered high SES. None of the 4 schools in group 1 have Title 1 funding. In teacher diversity group 2, 25% to 27%

African American, there were 96 students, 45 males and 51 females. Group 2 has a mean average of 85% free/reduced lunch. For this study, this 85% free/reduced lunch is considered low SES. All of the 3 schools in group 2 have Title 1 funding. In teacher diversity group 3, 39% to 50% African American, there were 135 students, 67 males and 68 females. Group 3 has a mean average of 56% free/reduced lunch. For this study, this 56% free/reduced lunch is considered Moderate SES. Neither of the 2 schools in group 3 have Title 1 funding. There were a total of 395 student participants.

The racial makeup of the teaching staff represented a unique opportunity to investigate the effects of the level of diversity hiring while controlling for SES. The researcher controlled for SES by using the school's percent free and reduced lunch data as the operational definition. Additionally, the school diversity hiring designations were determined based on percentage of teachers hired from each of the racial groups.

To generate a sample of students from each type of diversity hiring, a two-stage sampling process was used to identify participants. In identifying the elementary schools for the first stage, purposive cluster sampling was used to identify comparable elementary schools in terms of percent minority staff. Schools were chosen that represent the least minority staff percentage, schools were chosen representing the greatest minority percentage. Schools were also chosen representing the mean of both the least and greatest minority percentage. The second stage of sampling was to select all African American students who took the Grade 4 CRCT test in each of these nine schools. This sample size is adequate for this county-wide study because it includes all students in each of these schools who participated in the CRCT test. It is understood schools meeting diversity

staffing criteria with generally matching demographics are limited and therefore, populations drawn from these schools are also limited. The sampling size is based on the size of the population of 3066 4th Grade African American students with a 95% confidence level and 5% error.

Instrumentation and Materials

The researcher used the Criterion Referenced Competency Test (CRCT) to measure student performance. Data from this test is reported for grades one through eight in reading, English/language arts, and mathematics, and grades three through eight in social studies and science. Test reliability refers to the expected consistence of test scores and is quantified by a reliability coefficient, which expresses the consistency of test scores as the ratio of true scores to total score variance, and the SEM, the standard error of measurement. The Georgia Department of Education (2007) reported:

> Since no test measures performance with perfect reliability, it is important to take into account the standard error of measurement (SEM) when interpreting test scores. For the CRCT, the SEM is calculated for each test, and an error band (plus/minus one SEM unit) is reported together with the student's scale score….the SEM is a function of the number of items on which a particular score is based…If a student received a score of 862, for example, the SEM range might be 842-882. The wider this range, the greater the potential variation between the student's observed score and his or her "true" performance level. The SEM is a way to measure this variation in performance. If a student were to take this test multiple times, all of his or her scores would likely fall within the standard error of measurement range. (Retrieved from: http://www.doe.k12.ga.us)

The reliability index for the overall test scale scores is based upon WINSTEPS' Person Separation Index, or the Coefficient Alpha. Total test reliabilities ranged from 0.70 to 0.85 for Reading, 0.83 to 0.87 for English/Language Arts, 0.87 to 0.91 for Math, 0.88 to 0.92 for Science, and 0.88 to 0.90 for Social Studies.

In terms of validity, Georgia Department of Education ensured that this criterion-referenced test was aligned with Georgia's performance standards and the quality core curriculum. According to the Standards for Educational and Psychological Testing (1999), validity refers to the degree in which evidence and theory support the interpretation of test scores by the uses of the tests. The validity of the CRCT is judged as to its primary purpose to evaluate a school for AYP for NCLB. Content related evidence of validity is given in terms of how the items were developed in the five content areas. During the process of building the test, the statistical characteristics of Rasch difficulty, Infit, p-value, and point biserial were observed to ensure the statistical properties of the 2006 test were similar to those in previous years. All test items were reviewed for Quality Core Curriculum to Georgia Performance Standards Alignment. In terms of item writing, all items were tracked according to content domain and standards. Item reviews were conducted by specialists from Riverside Test Development and in committees including Georgia educators from around the state. All item review sessions were held in private meetings and participants were required to sign confidentiality agreements so the integrity of the test questions was not compromised. Finally, care was taken in both the bias and statistical review. Part of the item-development process included training writers to identify and eliminate potential bias. As part of the statistical review of the test items, Riverside used n-counts, p-values, percentage choosing each response option, and point biserials: distractor analysis and differential item functioning (DIF) using a Mantel-Haenszel Chi-Square and Delta procedures. It is important to note for the proposed study,

after the 2003 field test, DIF was investigated for female/male and African American/European American focal/reference groups.

Data Analysis

In this research study, the independent variables of racial diversity and gender cannot be manipulated as they have already happened. The dependent variable of the test scores were observed for significant effect between the groups. For all of the hypotheses, the analysis of covariance (ANCOVA) served as the method of data analysis. According to Green and Salkind (2003):

> A one-way analysis of covariance (ANCOVA) evaluates whether population means on the dependent variable are the same across levels of a factor, adjusting for differences on the covariate, or more simply stated, whether the adjusted group means differ significantly from each other. With a one-way analysis of covariance, each individual or case must have scores on three variables: a factor or independent variable, a covariate, and a dependent variable. (p.191)

The source of data for this study comes from the Georgia CRCT scores. The reliability index for the overall test scale scores is based upon WINSTEPS' Person Separation Index, or the Coefficient Alpha. Total test reliabilities ranged from 0.70 to 0.85 for Reading, 0.83 to 0.87 for English/Language Arts,0.87 to 0.91 for Math, 0.88 to 0.92 for Science, and 0.88 to 0.90 for Social Studies. These ranges establish reliability for each of the tests.

In the first hypothesis, three groups (39 to 50%, 25 to 27%, and 1 to 3% African American) serve as the factor or independent variable. The dependent variables are student test scores with the covariate being the socio-economic status of the students as measured by the school's percent free and reduced lunch data.

H_0: There will be no significant difference among schools that employ 39% to 50%, 25% to 27%, and 1% to 3% African Americans on all students who completed the Grade 4 CRCT standardized tests while controlling for SES.

H_1: There will be a significant difference among schools that employ 39% to 50%, 25% to 27%, and 1% to 3% African Americans on all students who completed the Grade 4 CRCT standardized tests while controlling for SES.

The second hypothesis concerns differences among the three groups (39% to 50%, 25% to 27%, and 1% to 3% African American) between male and female students on student standardized testing. An ANCOVA was used with student gender nested within racial diversity.

H_0: There will be no significant differences among schools that employ 39% to 50%, 25% to 27%, and 1% to 3% African Americans between African American male and female students who completed the Grade 4 CRCT standardized tests while controlling for SES.

H_2: There will be significant differences among schools that employ 39% to 50%, 25% to 27%, and 1% to 3% African Americans between African American male and female students who completed the Grade 4 CRCT standardized tests while controlling for SES.

These hypotheses were tested to determine if significant differences were found in scores from these environments. The sample data gathered in the participating schools were used as a basis for drawing conclusions about the populations found in the participating county.

CRCT test scores were collected from participants in order to compare the levels of diversity staffing of the school. The gender of the students nested within levels of diversity hiring was compared utilizing performance test scores to see if there are variations occurring as a function of the gender of the students. The calculated means were then compared utilizing the ANCOVA to see any statistically significant differences while controlling for SES as measured by the school's percent free and reduced lunch data as its operational definition.

Participants Rights

Insuring anonymity for the study participants was easily controlled in this study and was not a major concern for the researcher. The director of research and evaluation of Gwinnett County Public Schools via electronic file disseminated participant test scores to the researcher. Names of the participants did not accompany the scores. Therefore, the researcher did not have access to participant's names which ensured anonymity. The test data will not be used for any other purpose than to conduct this study. I chapters 4 and 5, results and recommendations will be outlined (IRB # 11-14-07-0290570).

CHAPTER 4: RESULTS

Introduction

This study examined the relationship between three levels of diversity personnel staffing and student test scores at elementary schools in a suburban Atlanta county to determine if the level of diversity staffing impacted student achievement scores while controlling for SES. This study also examined differences among African American male and female students who completed the Grade 4 CRCT standardized tests while controlling for SES. Data was gathered from schools with three levels of diversity personnel staffing, 1% to 3%, 25% to 27%, and 39% to 50% being African American.

Sample

Data were collected from all elementary schools in Gwinnett County, Georgia that met specific diversity staffing criteria of 1% to 3%, 25% to 27%, and 39% to 50% African American. Four schools met the classification of being in the 1% to 3% African American staffing criteria, 3 schools met the 25% to 27% staffing criteria, and 2 schools met the 39% to 50% staffing criteria. The total number of student scores analyzed was 395. The numbers can further be defined as: 164 students, 94 male and 74 female from the 1% to 3% category, 96 students, 45 male and 51 female from the 25% to 27% category, and 135 students, 67 male and 68 female from the 39% to 50% category (Table 1).

Table 1

Number of Male and Female Participants

Staff	Diversity %	#Students	# Males	# Females	Free/Red%	SES	Funding
1	1-3%	164	94	70	21%	High	No
2	25-27%	96	45	51	85%	Low	Yes, Title 1
3	39-50%	135	67	68	56%	Med.	No

Results of Analyses

The Criterion Referenced Competency Test (CRCT) was used as the source of data for the study. Each of the 5 Grade 4 CRCT test sections; English, Math, Language Arts, Science, and Social Studies was analyzed to see if any patterns existed that were specific to each section. The reliability index for the overall test scale scores was based upon WINSTEPS' Person Separation Index, or the Coefficient Alpha. Total test reliabilities ranged from 0.70 to 0.85 for Reading, 0.83 to 0.87 for English/Language Arts, 0.87 to 0.91 for Math, 0.88 to 0.92 for Science, and 0.88 to 0.90 for Social Studies.

The independent variables in this study were the 3 levels of diversity personnel staffing: 1% to 3%, 25% to 26%, and 39% to 52% African American. The dependent variables in this study were the grade 4 African American CRCT scores in each of the 5 subject areas. The covariate was the socio-economic status of each school which was based on the percent of students participating in the free/reduced lunch program.

The first step in data analysis was to conduct a homogeneity-of-slopes assumption test to evaluate the interaction between the covariate and the factor in the prediction of the dependent variable. A one-way ANCOVA was then performed to test the main effect.

Null Hypothesis 1: There will be no significant difference among schools that employ 39% to 50%, 25% to 27%, and 1% to 3% African Americans on all African American students who completed the grade 4 CRCT standardized tests while controlling for SES.

A test for the homogeneity-of-slopes assumption was conducted for each of the subtests of the CRCT to include English/Language Arts, Reading, Math, Science, and Social Studies. For the English/Language Arts (ELA) subtest, the homogeneity-of-slopes revealed that the interaction between the covariate (free/reduced) and the factor (Diversitystaffing) is not significant, $F(2, 389) = 1.23$, $p = .292$, partial $\eta^2 = .01$. Homogeneity-of-slopes can be assumed (Table 2).

Table 2

Homogeneity of Slopes for English/Language Arts (ELA)

Source	*df*	*MS*	*F*	Sig.	Partial eta
FR*DS	2	1078.32	1.23	.29	.01

An ANCOVA was then performed for the English/Language Arts subtest. The English/Language Arts scores, adjusted for socioeconomic status (SES) of the school, were ordered. Group 1 with 1% to 3% diversity staffing had the smallest adjusted mean

(*M* = 805.2). Group 2 with 25% to 27% diversity staffing had the largest adjusted mean (*M* = 860.2). Group 3 with 39% to 50% diversity staffing had the median adjusted mean (*M* = 838.8). The adjusted mean scores are shown below (Table 3).

Table 3

Adjusted Group Means for English/Language Arts (ELA-GPS)

Group	Diversity	Adjusted Mean	Non-adjusted Mean
1	1-3%	805.2	831.10
2	25-26%	860.2	826.54
3	39-52%	838.8	831.39

The ANCOVA proved not to be significant and results of the analysis indicates that the null hypothesis should be accepted, $F(2,391) = 2.36$, $p = .1$ (Table 4).

Table 4

Analysis of Covariance for English/Language Arts (ELA-GPS)

Source	*df*	*MS*	*F*	Sig.	Partial eta
FR*DS	2	2066.26	2.36	.10	.01
Error	391	874.60			

For the Reading subtest, the homogeneity-of-slopes revealed that the interaction between the covariate (freereduced) and the factor (Diversitystaffing) is not significant,

F(2, 389) = 2.76, p = .07, partial η^2 = .01. One can assume homogeneity-of-slopes (Table 5).

Table 5

Homogeneity of Slopes for Reading

Source	*df*	*MS*	*F*	Sig.	Partial eta
FR*DS	2	2106.98	2.76	.07	.01

An ANCOVA was then conducted for the Reading subtest. The results of the analysis indicates that the null hypothesis should be rejected, F(1,391) = 6.60, p = .01. The partial η^2 of .02 suggests a small relationship between diversity staffing and Reading while controlling for SES. The strength of the relationship between the level of diversity staffing and Reading student scores was weak, with the diversity staffing accounting for 1.7% of the variance in test scores (Table 6).

Table 6

Analysis of Covariance for Reading

Source	*df*	*MS*	*F*	Sig.	Partial eta
DS	1	5087.03	6.60	.01	.02
Error	391	770.66			

The means of the Reading subtest adjusted for SES (Free/reduced lunch) across the three levels of diversity staffing found that Group 2 had the largest adjusted mean (*M*

= 864.5), Group 3 had a smaller adjusted mean (*M* = 840.5), and Group 1 had the smallest adjusted mean (*M* = 802.3) (Table 7).

Table 7

Adjusted Group Means in Reading

Group	Diversity	Adjusted Mean	Non-Adjusted Mean
1	1-3%	802.3	831.39
2	25-26%	864.5	826.52
3	39-52%	840.5	832.09

Follow-up tests were conducted to evaluate pairwise differences among these adjusted means. It was found that Group 2 (25% to 27% Diversity Staffing and Low SES) was significantly greater than Group 1 (1% to 3% Diversity Staffing and High SES) (*p* = .019), Group 2 (25% to 27% Diversity Staffing and Low SES) was significantly greater than Group 3 (39% to 50% Diversity Staffing and Moderate SES) (*p* = .048), and Group 3 (39% to 50% Diversity Staffing and Moderate SES) was significantly greater than Group 1 (1% to 3% Diversity Staffing and High SES) (*p* = .011).

For the Math subtest, the homogeneity-of-slopes revealed that the interaction between the covariate (freereduced) and the factor (Diversitystaffing) is significant, $F(2, 389) = 7.08$, $p = .00$, partial $\eta^2 = .04$. One cannot assume homogeneity-of-slopes (Table 8).

Table 8

Homogeneity of Slopes for Math

Source	*df*	*MS*	*F*	Sig.	Partial eta
FR*DS	2	6413.04	7.08	.00	.04

A one-way analysis of variance was conducted to evaluate the relationship between diversity staffing and student scores on the Math subtest. The independent variable, diversity staffing, included three levels: Group 3, 39% to 50%, Group 2, 25% to 27%, and Group 1, 1% to 3% African American. The dependent variable was the math test scores. The ANOVA is not significant, $F(2, 392) = 1.66$, $p = .19$, partial $\eta^2 = .01$. Because the $p > .05$, we accept the null hypothesis that there are no differences among the 3 levels of diversity staffing (Table 9).

Table 9

ANOVA for Math

Source	*df*	*MS*	*F*	Sig.	Partial eta
DS	2	1549.59	1.66	.19	.01

For the Science subtest, the homogeneity-of-slopes revealed that the interaction between the covariate (freereduced) and the factor (Diversitystaffing) is significant, $F(2, 389) = 6.24$, $p = .002$, partial $\eta^2 = .03$. One cannot assume homogeneity-of-slopes (Table 10).

Table 10

Homogeneity of Slopes for Science

Source	df	MS	F	Sig.	Partial eta
FR*DS	2	7176.76	6.24	.00	.03

For the Science subtest, there was no significant homogeneity-of-slopes with the interaction between the covariate (freereduced) and the factor (Diversitystaffing). An ANOVA was performed for the Science subtest.

A one-way analysis of variance was conducted to evaluate the relationship between diversity staffing and student scores on the Science subtest. The independent variable, diversity staffing, included three levels: 39% to 50%, 25% to 27%, and 1% to 3% African American. The dependent variable was the Science test scores. The ANOVA is significant, $F(2, 392) = 4.35$, $p = .014$, partial $\eta^2 = .02$. Because the p value is less than .05, we reject the null hypothesis that there are no differences among the 3 levels of diversity staffing. The strength of the relationship between the diversity staffing and the student science scores, as assessed by η^2, was small, with the diversity staffing accounting for 2.2% of the variance of the dependent variable (Table 11).

Table 11

ANOVA for Science

Source	*df*	*MS*	*F*	Sig.	Partial eta
DS	2	5141.62	4.35	.01	.02

Follow-up tests were conducted to evaluate pairwise differences among the means in Science. Because the variances among the three groups ranged from 1026.56 to 1391.29, the researcher chose to assume the variances were homogeneous and conducted post hoc comparisons using the Tukey HSD test, a test designed to perform a pairwise comparison of the means to determine the significant difference. There were significant differences in the means for one of the three comparisons at the .05 level. The 95% confidence intervals for the pairwise differences, as well as the means and standard deviations for the three levels of diversity staffing, are reported in table 12. Group 1 (1% to 3% Diversity Staffing and High SES) was significantly greater than Group 2 (25% to 27% Diversity Staffing and Low SES) (p =.014).

Table 12

95% Confidence Intervals of Pairwise Differences in Mean Changes Diversity Staffing for Science

Diversity Staffing	M	SD	Group 1	Group 2
Group 1, 1-3%	825.32	37.30		
Group 2, 25-27%	812.30	32.04	-2.62 to 23.41	
Group 3, 39-50%	819.97	32.22	-4.17 to 14.87	-17.86 to 2.52

For the Social Studies subtest, the homogeneity-of-slopes revealed that the interaction between the covariate (freereduced) and the factor (Diversitystaffing) is

significant, F(2, 389) = 9.29, p = .00, partial η^2 = .05. One cannot assume homogeneity-of-slopes (Table 13).

Table 13

Homogeneity of Slopes for Social Studies

Source	*df*	*MS*	*F*	Sig.	Partial eta
DS	2	5270.46	9.29	.00	.05

For the Social Studies subtest, there was no significant homogeneity-of-slopes with the interaction between the covariate (Freereduced) and the factor (Diversitystaffing). An ANOVA was performed for the Social Studies subtest.

A one-way analysis of variance was conducted to evaluate the relationship between diversity staffing and student scores on the Social Studies subtest. The independent variable, diversity staffing, included three levels: 39% to 50%, 25% to 27%, and 1% to 3% African American. The dependent variable was the Social Studies test scores. The ANOVA is significant, F(2, 392) = 6.78, p = .001, partial η^2 = .03. Because the p value is less than .05, the null hypothesis was rejected. There were differences among the 3 levels of diversity staffing. The strength of the relationship between the diversity staffing and the student math scores, as assessed by η^2, was small, with the diversity staffing accounting for 3.3% of the variance of the dependent variable (Table 14).

Table 14

ANOVA for Social Studies

Source	*df*	*MS*	*F*	Sig.	Partial eta
DS	2	4001.26	6.78	.00	.03

Follow-up tests were conducted to evaluate pairwise differences among the means in Social Studies. Because the variances among the three groups ranged from 461.82 to 668.74, the researcher chose to assume the variances were homogeneous and conducted post hoc comparisons using the Tukey HSD test, a test designed to perform a pairwise comparison of the means to determine where the significant difference is found. There were significant differences in the means for two of the three comparisons at the .05 level. When not controlling for SES, Group 1 (M = 333.11) was significantly greater than Group 2 (M = 322.35). Group 3 (M = 332.49) was significantly greater than Group 2 (M = 322.35). The 95% confidence intervals for the pairwise differences, as well as the means and standard deviations for the three levels of diversity staffing, are reported in table 15.

Table 15

95% Confidence Intervals of Pairwise Differences in Mean Changes Diversity Staffing for Social Studies

Diversity Staffing	M	SD	Group 1	Group 2
Group 1, 1-3%	333.11	24.49		
Group 2, 25-27%	322.35	21.49	3.85 to 17.66	
Group 3, 39-50%	332.49	25.86	-6.33 to 7.57	-17.56 to -2.71

Null Hypothesis 2: There will be no significant differences among schools that employ 39% to 50%, 25% to 27%, and 1% to 3% African Americans between African American male and female students who completed the Grade 4 CRCT standardized tests.

To conduct these tests, student gender was nested within diversity staffing. A two-way ANOVA was conducted for each of the subtests of the CRCT; English/Language Arts, Reading, Math, Science, and Social Studies. From this test, a determination regarding whether the gender main effect, the diversity staffing main effect, and the interaction between gender and diversity staffing in each of the subject areas were significant. If significant results were found, follow-up tests were conducted to determine where the significance was.

A 3 x 2 ANOVA was conducted to evaluate the effects of three levels of diversity staffing conditions (1% to 3%, 25% to 26%, and 39% to 52% African American) and student gender on the CRCT/ELA test scores of 4th Grade African

American students. To help make the results of the two-way ANOVA more understandable, a boxplot of the Science Scores for male and female students is displayed in figure 1.

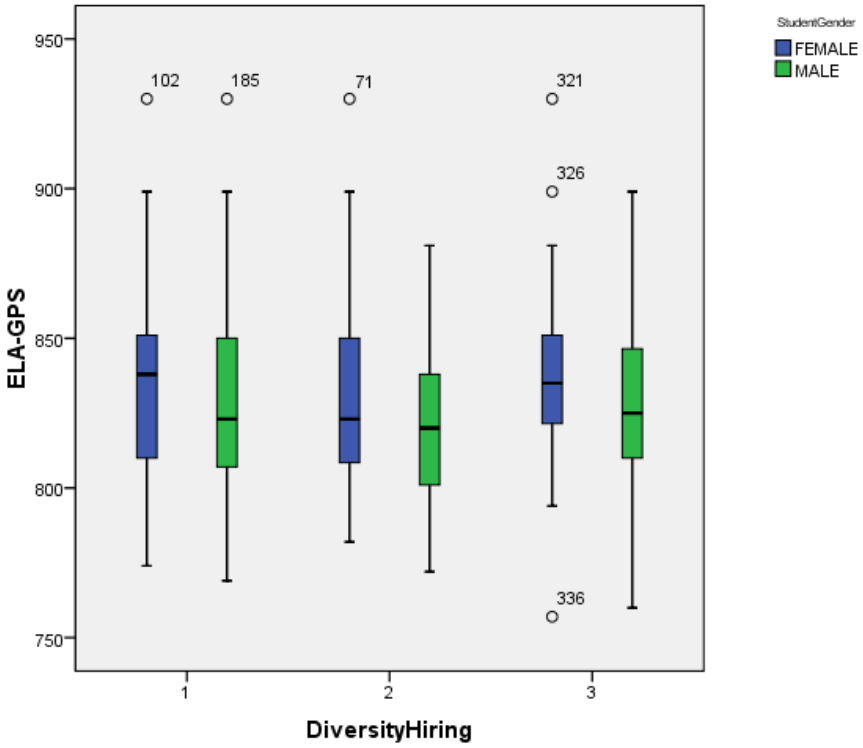

Figure 1. Boxplots of ELA-GPS scores by teacher diversity level for male and female

The results for the ANOVA indicated no significant interaction between diversity hiring and student gender, $F(2,389) = .10$, $p = .901$, partial $\eta^2 = .00$, no significant diversity staffing main effect, $F(2,389) = 1.14$, $p = .322$, partial $\eta^2 = .01$, but significant main effects for gender, $F(1,389) = 8.86$, $p = .003$, partial $\eta^2 = .02$. The difference found is that females tended to have higher ELA test scores than males

overall. Because gender has only two levels, post hoc tests are not necessary (Table 16).

Table 16

3 X 2 ANOVA for ELA-GPS

Source	*df*	*F*	Sig.	Partial eta
Gender Main Effect	1	8.86	.00	.02
Diversity Main Effect	2	1.14	.32	.01
Gender*Diversity	2	.10	.90	.00

The means and standard deviations for test scores as a function of gender are presented in Table 17.

Table 17

Means and Standard Deviations for Gender/Diversity Staffing for English/Language Arts (ELA-GPS)

Gender	Diversity Staffing	Mean	SD
Male	1	827.70	31.50
	2	822.04	28.64
	3	825.90	28.52
Female	1	835.55	30.42
	2	830.51	29.61
	3	836.79	26.79

A 3 x 2 ANOVA was conducted to evaluate the effects of three levels of diversity staffing conditions and student gender on Reading subtest scores of 4th Grade African American students. To help make the results of the two-way ANOVA more understandable, a boxplot of the Reading scores for male and female students is displayed in figure 2.

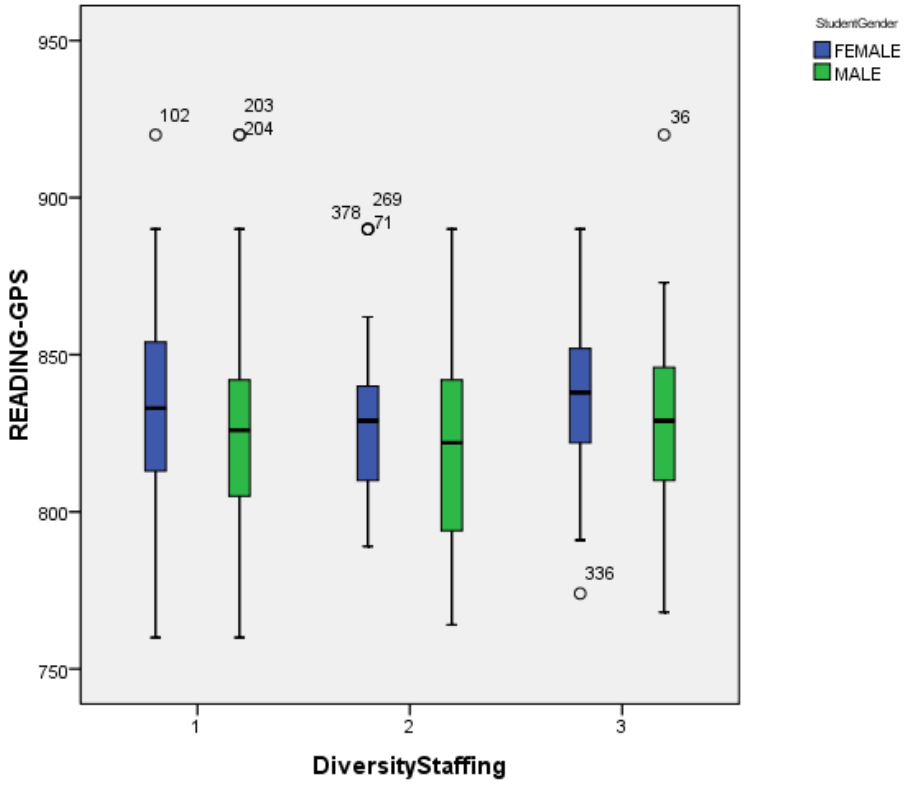

Figure 2. Boxplots of Reading scores by teacher diversity level for male and female.

The ANOVA indicated no significant interaction between diversity hiring and student gender, $F(2,389) = .10$, $p = .901$, partial $\eta^2 = .00$, no significant diversity staffing main effect, $F(2,389) = 1.14$, $p = .322$, partial $\eta^2 = .01$, but significant main effects for gender, $F(1,389) = 8.86$, $p = .003$, partial $\eta^2 = .02$. The difference found is that females tended to have higher Reading test scores than males overall. Because gender has only two levels, post hoc tests are not necessary (Table 18).

Table 18

3 X 2 ANOVA for Reading

Source	*df*	*F*	Sig.	Partial eta
Gender Main Effect	1	8.86	.00	.02
Diversity Main Effect	2	1.14	.32	.01
Gender*Diversity	2	.10	.90	.00

The means and standard deviations for test scores as a function of gender are presented in Table 19.

Table 19

Means and Standard Deviations for Gender/Diversity Staffing for Reading

Gender	Diversity Staffing	Mean	SD
Male	1	828.06	30.42
	2	822.51	30.19
	3	827.94	25.87
Female	1	835.75	30.09
	2	830.06	25.04
	3	836.18	23.30

A 3 x 2 ANOVA was conducted to evaluate the effects of three levels of diversity staffing conditions and student gender on Math subtest scores of grade 4

African American students. To help make the results of the two-way ANOVA more understandable, a boxplot of the Math scores for male and female students is displayed in figure 3.

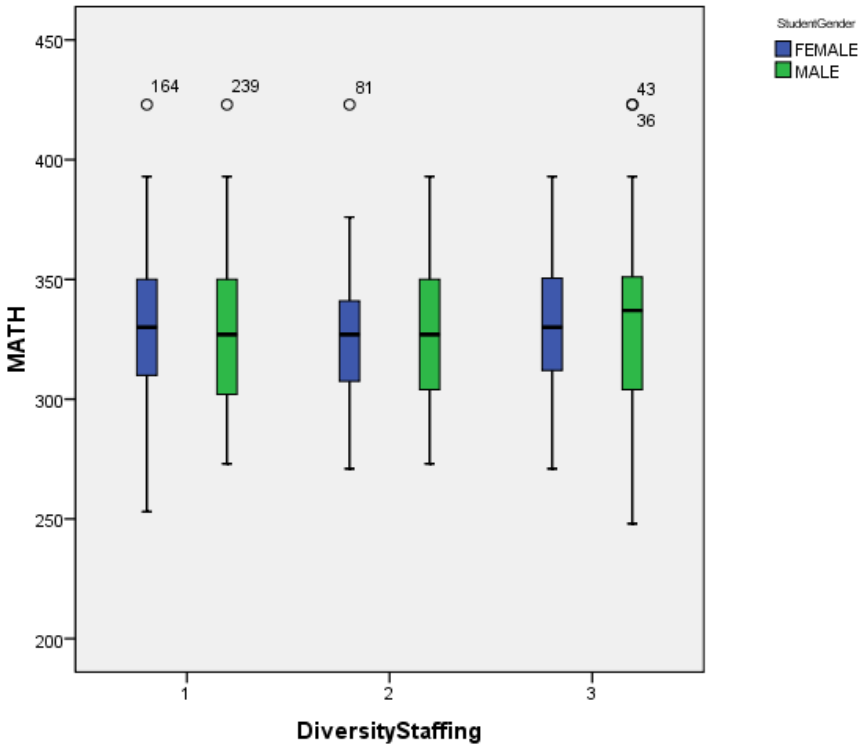

Figure 3. Boxplots of Math scores by teacher diversity level for male and female.

The ANOVA indicated no significant interaction between diversity staffing and student gender, $F(2,389) = .000$, $p = 1.000$, partial $\eta^2 = .00$, no significant diversity staffing main effect, $F(2,389) = 1.64$, $p = .196$, partial $\eta^2 = .01$, and no significant main effects for gender, $F(1,389) = .00$, $p = .972$, partial $\eta^2 = .00$. There was no significant teacher diversity staffing effect, no significant student gender effect, and no significant

interaction between diversity staffing and student gender. It was found that females tended to have similar Math test scores with males overall. No follow-up tests were performed (Table 20).

Table 20

3 X 2 ANOVA for Math

Source	*df*	*F*	Sig.	Partial eta
Gender Main Effect	1	.00	.97	.00
Diversity Main Effect	2	1.64	.20	.01
Gender*Diversity	2	.00	1.00	.00

The means and standard deviations for test scores as a function of gender are presented in Table 21.

Table 21

Means and Standard Deviations for Gender/Diversity Staffing for Math

Gender	Diversity Staffing	Mean	SD
Male	1	327.78	31.51
	2	325.76	29.91
	3	332.79	33.86
Female	1	327.87	31.52
	2	326.00	28.03
	3	332.79	28.04

A 3 x 2 ANOVA was conducted to evaluate the effects of three levels of diversity staffing conditions and student gender on Science subtest scores of grade 4 African American students. To help make the results of the two-way ANOVA more understandable, a boxplot of the Science scores for male and female students is displayed in figure 4.

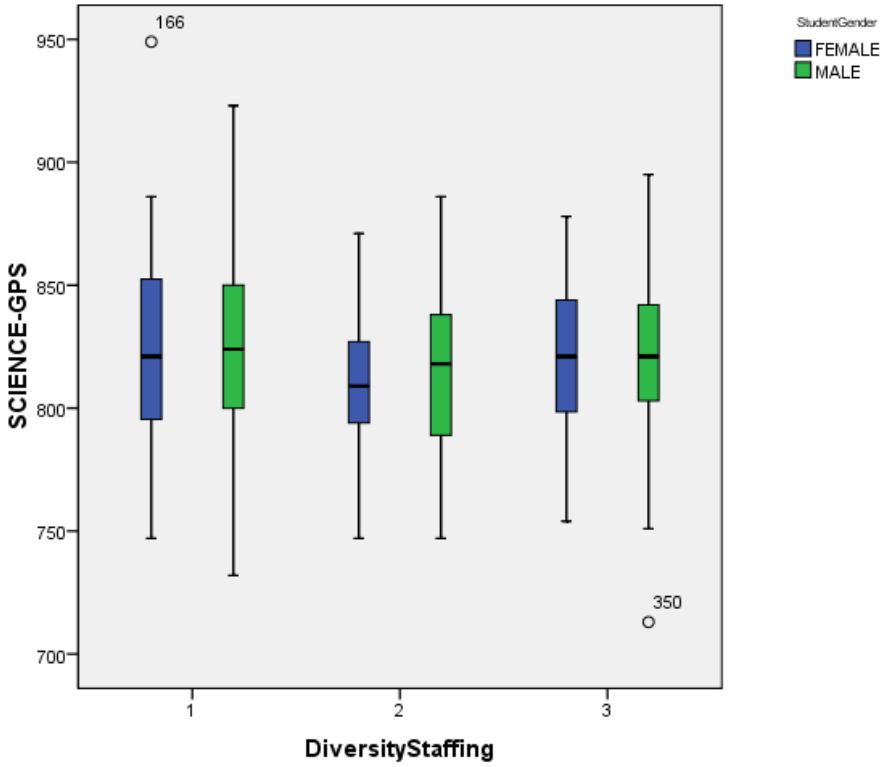

Figure 4. Boxplots of Science scores by teacher diversity level for male and female.

The ANOVA indicated no significant interaction between diversity staffing and student gender, $F(2,389) = .31$, $p = .733$, partial $\eta^2 = .00$, a significant diversity staffing main effect, $F(2,389) = 4.13$, $p = .017$, partial $\eta^2 = .02$, and no significant main effects for gender, $F(1,389) = .20$, $p = .654$, partial $\eta^2 = .00$ (Table 22). With a significant difference on the diversity staffing main effect, follow-up tests were performed.

Table 22

3 X 2 ANOVA for Science

Source	*df*	*F*	Sig.	Partial eta
Gender Main Effect	1	.20	.65	.00
Diversity Main Effect	2	4.13	.02	.02
Gender*Diversity	2	.31	.73	.00

The means and standard deviations for test scores as a function of gender are presented in Table 23.

Table 23

Means and Standard Deviations for Gender/Diversity Staffing for Science

Gender	Diversity Staffing	Mean	SD
Male	1	825.70	38.37
	2	815.27	37.32
	3	819.13	36.00
Female	1	824.82	36.11
	2	809.69	26.65
	3	820.79	28.28

Follow-up analyses of the main effect of diversity staffing and gender were completed. The test results for males in Science were not significant $F(2,389) = .72$, $p = .49$, as were the test results for females $F(2,389) = .56$, $p = .57$. The follow-up tests

following significant simple main effect consisted of all pairwise comparisons among the three types of diversity staffing for both males and females.

For the males, one significant difference was found. The Group 1 (1% to 3% diversity staffing) scored significantly higher than the Group 2 (25% to 27% diversity staffing), ($F(1,389) = 5.71$, $p = .02$). For the females, no significance was found (Table 24).

Table 24

Pairwise Comparisons for Males and Females in Science

Gender	Group	*F*	Sig.
Male	Group 1 vs. Group 2	5.71	.02
	Group 1 vs. Group 3	.47	.49
	Group 2 vs. Group 3	3.02	.08
Female	Group 1 vs. Group 2	2.78	.10
	Group 1 vs. Group 3	1.41	.24
	Group 2 vs. Group 3	.34	.56

A 3 x 2 ANOVA was conducted to evaluate the effects of three levels of diversity staffing conditions and student gender on Social Studies subtest scores of grade 4 African American students. To help make the results of the two-way ANOVA

more understandable, a boxplot of the Social Studies scores for male and female students is displayed in figure 5.

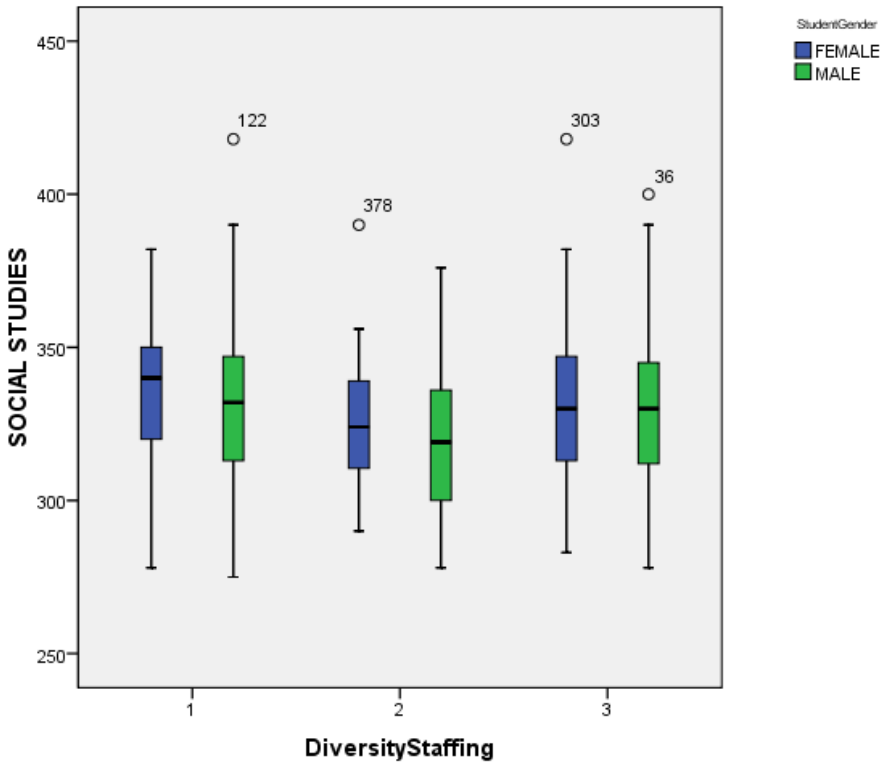

Figure 5. Boxplots of Social Studies scores by teacher diversity level for male and female.

The ANOVA indicated no significant interaction between diversity hiring and student gender, $F(2,389) = .44$, $p = .645$, partial $\eta^2 = .00$, a significant diversity staffing main effect, $F(2,389) = 7.22$, $p = .00$, partial $\eta^2 = .04$, and no significant main effects for gender, $F(1,389) = 2.03$, $p = .155$, partial $\eta^2 = .01$ (Table 25).

Table 25

3 X 2 ANOVA for Social Studies

Source	*df*	*F*	Sig.	Partial eta
Gender Main Effect	1	2.03	.16	.01
Diversity Main Effect	2	7.22	.00	.04
Gender*Diversity	2	.44	.65	.00

The means and standard deviations for test scores as a function of gender are presented in Table 26.

Table 26

Means and Standard Deviations for Gender/Diversity Staffing for Social Studies

Gender	Diversity Staffing	Mean	SD
Male	1	331.30	25.73
	2	319.07	23.08
	3	332.30	27.52
Female	1	335.48	22.73
	2	325.25	19.77
	3	332.68	24.32

Follow-up simple main effects analyses of diversity staffing and gender examined this issue. The follow-up tests regarding significant simple main effect consisted of all pairwise comparisons among the three types of diversity staffing for both males and

females. The SSType3 F test evaluates the pairwise mean differences across comparisons.

For the males, the results of this analysis indicated the following: When not controlling for SES, Diversity Staffing Group 1 (1% to 3% diversity staffing) scored significantly higher than Diversity Staffing Group 2 (25% to 27% diversity staffing), (F(1,389) = 5.71, p = .02). For the females, the results of this analysis indicated the following: When not controlling for SES, Diversity Staffing Group 1 (1% to 3% diversity staffing) scored significantly higher than Diversity Staffing Group 2 (25% to 27% diversity staffing), (F1,389) = 7.70, p = .00). The Group 2 (25% to 27% diversity staffing) scored significantly higher than Group 3 (39% to 50% diversity staffing), (F(1,389) = 8.00, p = .01) (Table 27).

Table 27

Pairwise Comparisons for Males and Females in Social Studies

Gender	Group	*F*	Sig.
Male	Group 1 vs. Group 2	5.71	.02
	Group 1 vs. Group 3	.46	.50
	Group 2 vs. Group 3	2.72	.10
Female	Group 1 vs. Group 2	7.70	.00
	Group 1 vs. Group 3	.07	.80
	Group 2 vs. Group 3	8.00	.01

Summary of Results

The aim of this study was to determine whether staffing diversity had an effect on student achievement, when controlling for SES. This study found that it did have an effect on student achievement when there was control for SES.

For hypothesis 1, there will be no significant difference among schools that employ 39% to 50%, 25% to 27%, and 1% to 3% African Americans on all students who completed the Grade 4 CRCT standardized tests while controlling for SES, significance was found with the Reading test. Group 2 (25% to 27% Diversity Staffing and Low SES) was significantly greater than Group 1 (1% to 3% Diversity Staffing and High SES), Group 2 (25% to 27% Diversity Staffing and Low SES) was significantly greater than Group 3 (39% to 50% Diversity Staffing and Moderate SES), and Group 3 (39% to 50% Diversity Staffing and Moderate SES) was significantly greater than Group 1 (1% to 3% Diversity Staffing and High SES). With the Science test, when SES was not controlled for, Group 1 (1% to 3% Diversity Staffing and High SES) was significantly greater than Group 2 (25% to 27% Diversity Staffing and Low SES). With the Social Studies test, when SES was not controlled for, Group 1 (1% to 3% Diversity Staffing and High SES) was significantly greater than Group 2 (25% to 27% Diversity Staffing and Low SES), and Group 3 (39% to 50% Diversity Staffing and Moderate SES) was significantly greater than Group 2 (25% to 27% Diversity Staffing and Low SES).

For Hypothesis 2, there will be no significant differences among schools that employ 39% to 50%, 25% to 27%, and 1% to 3% African American between African

American male and female students who completed the grade 4 CRCT standardized tests, results of the 3X2 ANOVA indicate that with the ELA test, significant main effects for gender were found, which was to be expected, with females tending to have higher overall ELA scores than males. With the Reading test, significant main effects for gender were found, with females tending to have higher overall Reading scores than males. With the Science test, a significant diversity staffing main effect was found. For the males, Group 1 (1% to 3% Diversity Staffing and High SES) scored significantly greater than Group 2 (25% to 27% Diversity Staffing and Low SES). With the Social Studies test, a significant diversity staffing main effect was found. For the males, Group 1 (1% to 3% Diversity Staffing and High SES) scored significantly greater than Group 2 (25% to 27% Diversity Staffing and Low SES). For the females, Group 1 (1% to 3% Diversity Staffing and High SES) scored significantly greater than Group 2 (25% to 27% Diversity Staffing and Low SES). Also for the females, Group 2 (25% to 27% Diversity Staffing and Low SES) scored significantly greater than Group 3 (39% to 50% Diversity Staffing and Moderate SES). It is significant that when there is no control for SES, with both male and female students with the Social Studies test, Group 1 (1% to 3% Diversity Staffing and High SES) scored significantly greater than Group 2 (25% to 27% Diversity Staffing and Low SES). For the Math, Science, and Social Studies tests, SES was not used as the covariate because the homogeneity-of-slopes tests revealed a significant interaction between the covariate (Free/Reduced Lunch) and the factor (Diversity Staffing).

CHAPTER 5: DISCUSSION

Overview of the Study

The goal of this study was to ascertain the effect of three levels of diversity elementary staffing on achievement scores of Grade 4 African American students. Scores from 395 students were collected and analyzed to determine the effect of diversity staffing on their achievement test scores. In the high SES Group 1, 164 student scores were collected from 4 schools that had a diversity staffing of 1% to 3% African American with a free/reduced lunch of 21%. In the low SES Group 2, 96 student scores were collected from 3 schools that had a diversity staffing of 25% to 27% with a free/reduced lunch of 85%. In the moderate SES Group 3, 135 student scores were collected from 2 schools that had a diversity staffing of 39% to 50% with a free/reduced lunch of 56%. Scores from all 5 subtests of the CRCT were gathered; Language Arts, Reading, Math, Science, and Social Studies to determine if teacher diversity staffing influenced particular subject areas more than others. Male and female scores were analyzed separately to determine the role of gender in the study. Scores were collected from the 2007 CRCT assessment in schools in Gwinnett County, Georgia.

SPSS 16.0 software program was used to perform the tests. Homogeneity of slopes, univariate ANCOVAs and Custom Hypotheses tests (SSType3) as well as pairwise comparisons were performed when necessary for each unit and research question. Each socioeconomic status was determined by the percentage of students who receive free and reduced lunches. This percentage served as the covariate in the study.

This chapter will provide an analysis of the results found in chapter 4. In some cases, this data supports the first null hypotheses that there was no significant effect between the 2007 CRCT subtest and 3 levels of teacher diversity hiring for grade 4 African American students. In other cases, the null hypothesis was rejected. In these cases, effect size proved to be minimal. These data do not support the second null hypothesis that there was no significant effect between the 2007 CRCT subtests and 3 levels of teacher diversity hiring for both male and female African American students. In these cases, the study supported existing research that females tend to score better on English/Language Arts and Reading tests, whereas males tend to do better on Math and Science tests.

Overall, this study found mixed results across the subtests, and across gender. A potential explanation for the different results in this study could be that even though the researcher controlled for the SES factor, it nevertheless dominated the results. It should also be noted that as a possible adjunct explanation of these results is that all of the Group 2 schools are Title 1 schools that have additional funding and personnel. Although some significance was found in the results, the inconsistency of the results indicated no clear patterns. Therefore no assumptions could accurately be made. Instead, the data pointed more clearly to the confounding variable of SES as a more dominant predictor of test scores.

Interpretation of Findings

In the first hypothesis, results from the English/Language Arts subtest showed the differences in adjusted means were not significant. Therefore, the null hypothesis was accepted and no follow-up tests were necessary.

Results from the Reading subtest supported the hypothesis that diversity staffing may impact test scores. With the reading test, SES was used as a covariate. This study found significant differences in the adjusted means. Therefore, the null hypothesis was rejected. When looking at the means adjusted for SES, group 2 (25% to 27% Diversity Staffing and Low SES) did the best. The second group was group 3 (39% to 50% Diversity Staffing and Moderate SES), followed by Group 1 (1% to 3% Diversity Staffing and High SES). When the means were adjusted for SES, it was found the students in the schools with more African American teachers performed better on the Reading test. Group 2, the Title 1 schools, performed better than the other schools, but only when adjusted for the SES. This suggests that Title 1 funding as well as diversity staffing may have an effect on student achievement. When the means are adjusted, diversity staffing appears to have an effect.

This study found no significant differences in the adjusted means with the Math subtest, thereby accepting the null hypothesis that there are no significant differences among the 3 levels of diversity staffing. With no significance found, no follow-up tests were done.

For the Science and Social Studies tests, SES could not be used as a covariate, and although a regular ANOVA found significant differences that did not support the

hypothesis, it was because SES could not be used as a covariate. Therefore, there was no adjusted means and no control of SES. With the Science subtest, the null hypothesis was rejected. There were significant differences among the three levels of diversity staffing. When the means were not adjusted and SES was not controlled for, Group 1 (1% to 3% Diversity Staffing and High SES) was significantly greater than group 2 (39% to 50% Diversity Staffing and Low SES). When SES was not controlled for, students in the lowest SES schools scored lowest on this test indicating SES possibly had a dominant effect.

With the Social Studies subtest, there was no homogeneity of slopes. Therefore, there was no adjusted means and no control of SES. With the Social Studies subtest, the null hypothesis was rejected. There were significant differences among the three levels of diversity staffing. Group 1 (1% to 3% Diversity Staffing and High SES) and Group 3 (39% to 50% Diversity Staffing and Moderate SES) students scored significantly greater than Group 2 (25% to 27% Diversity Staffing and Low SES) students. There were no significant differences between Group 1 (1% to 3% Diversity Staffing and High SES) and Group 3 (39% to 50% Diversity Staffing and Moderate SES) when SES was not controlled for.

In summary, concerning Hypothesis 1, the results of the CRCT subtests show that with control for SES, diversity staffing did have an effect on achievement scores of students. When the means were adjusted, achievement scores from Group 2 (25% to 27% Diversity Staffing and Low SES), with the lowest SES but funded as Title 1 schools, were greater than the other groups. This possibly indicates that the effect of

Title 1 funding might have had an effect that superseded the effect of diversity staffing. It may be reasonable to conclude a confounding variable such as the Title 1 funding of Group 2 may have a persistent, controlling effect on the test scores.

In Hypothesis 2, in evaluating three levels of diversity staffing environments and student gender, no significant differences between the three groups and the ELA-GPS were found. There was no significant interaction between diversity hiring and student gender, and no significant diversity staffing main effect. There were significant main effects for gender. Because gender has only two levels, conducting follow-up tests to a significant gender simple main effect was not necessary. Females scored significantly higher than males.

In evaluating three levels of diversity staffing environments and student gender, no significant differences between the three groups and the Reading subtest were found. There was no significant interaction between diversity hiring and student gender, and there was no significant diversity staffing main effect. There were significant main effects for gender. Because gender has only two levels, conducting follow-up tests to a significant gender simple main effect was not necessary. Females scored significantly higher than males.

In evaluating three levels of diversity staffing environments and student gender, no significant differences between the three groups and the Math subtest were found. There was no significant interaction between diversity staffing and student gender, no significant diversity staffing main effect, and no significant main effects for gender.

In evaluating three levels of diversity staffing environments and student gender, significant differences between the three groups on the Science subtest were found. For the Science subtest, males in Group 1 (1% to 3% Diversity Staffing and High SES) scored significantly greater than males in Group 2 (25% to 27% Diversity Staffing and Low SES). With SES as a covariate not being utilized, males in Group 3 (39% to 50% Diversity Staffing and Moderate SES) scored the second best followed by the males in Group 2 (25% to 27% Diversity Staffing and Low SES), who scored the lowest.

In evaluating three levels of diversity staffing environments and student gender, there was no significant interaction between diversity hiring and student gender. There was a significant diversity staffing main effect. With SES not being used as a covariate, males in Group 1 (1% to 3% Diversity Staffing and High SES) scored significantly higher than males in Group 2 (25% to 27% Diversity Staffing and Low SES). Females in Group 1 (1% to 3% Diversity Staffing and High SES) and females in Group 3 (39% to 50% Diversity Staffing and Moderate SES) scored significantly higher than females in Group 2 (25% to 27% Diversity Staffing and Low SES). These findings may suggest that Title 1 funding may have a deleterious effect on male Science and Social Studies scores and female Social Studies scores. For Science, significantly low results for males in Group 2 (25% to 27% Diversity Staffing and Low SES) may indicate that Title 1 funding may impact achievement by emphasizing areas other than Science. For Social Studies, results for males and females in Group 2 (25% to 27% Diversity Staffing and Low SES) may indicate Title 1 funding may have a negative effect on Science and Social Studies scores by emphasizing areas other than Science.

The Socioeconomic Factor

The findings of this study relate to a larger body of literature on the topic. This study examined student achievement as it relates to teacher race in Grade 4 suburban Atlanta African American students. This study found student achievement may have been significantly influenced by SES rather than by teacher diversity staffing. Despite controlling for SES, this variable seemed to be a factor in determining student scores.

This finding is not new or surprising, as it has been the focus of discussion and research for at least 40 years. Coleman (1966) was the first to study school effects and student achievement using probability samples of elementary and secondary students. The Coleman study examined the issues of SES and concluded that family variables, rather than school variables, accounted for much of the achievement differences among racial and ethnic groups. Cunningham and Sanzo (2002) had similar findings in their study that showed a strong relationship betweens students' state assessment test pass rates and students' socioeconomic status. Braun, Wang, Jenkins, and Weinbaum's (2006) study supported these findings in their study examining African American and European American student achievement gap in 10 states. The 10 states together enroll 40% of U.S. African American students. In this study, data was aggregated by states, in schools according to the SES level of the students, and within groups of schools within states. This study found that, although mean achievement rose for both African American and European American students, the achievement gaps were large, profound, and persistent. These gaps are due, in part, to SES factors.

Title 1 schools, with an emphasis particularly on reading achievement, have shown that scores may be positively influenced by the additional support services which Title 1 affords. Reed, Marchand-Martella, Martella, and Kolts (2007) reported Title 1, at-risk students made similar gains to those readers who were not at-risk with the Success Level A reading program. Results from this study seem to concur with the results of the present study in that additional support staff, funding, and other services may result in greater gains for at-risk Title 1 students.

In defining what has historically been considered to be an adequate definition of SES, Wright (1997) states SES is a hierarchy of class labels which are determined by income. SES may determine where a family lives, what type of transportation they use, and other issues of time and money they have for leisure activities. Wright suggests that lower-income students and their families are often unable to prioritize school because of the more important issues of part-time jobs, home chores, and other activities of daily survival. Middle- and upper-class students have the time and support for homework and involvement in other school activities. According to Wright, “School is not the essential vehicle for working class life” (p.97). This problem may be ameliorated by working to equalize the SES factor by addressing the racial makeup of the teaching staffs in schools. The results of this study, as found within the Wright study of ten years earlier showed an inverse relationship between test scores and the percentage of students receiving free and reduced lunch.

The 1965 Elementary and Secondary Education Act, and Title 1 was an effort to provide federal funds to districts and schools that serve low SES children and families.

It seems clear this is having a beneficial effect on the performance scores of students from low SES backgrounds. Increasing the level of funding to these districts may help address the problem at least partially.

Barton (2003) assembled 14 factors related to academic achievement which include factors related to health, housing, school quality and nutrition. He then estimated minority and majority student gaps within these factors. For each factor, the gap favored majority students in a very substantial way. Barton concluded that the educational achievement gap is only one consequence of the differences among students, and school reform is unlikely to ameliorate the gap.

This is not to say that teacher effects are insignificant and cannot help lessen the problem of the achievement gap. Konstantopoulos (2004) conducted school effects research by examining high school student achievement in high school math and science scores. One interesting conclusion found that teachers mattered considerably. Konstantopoulos found “Differences in achievement between teachers in the same school are much larger than differences in achievement between schools. (p.2577) This research may suggest that teacher staffing within each school is very important. This may shed light on the importance of the balance of teachers within the microcosm of each school.

In terms of the present study, research shows that SES impacts student performance scores. Konstantopoulos (2006) performed a study on the school effects on student achievement. It was found that characteristics of the school, specifically SES, have a considerable effect on student scores. For example, students attending

schools with a low-SES had lower scores than students attending schools with a high-SES. However, it was also found that differences in achievement scores were more affected by teachers within the same school than differences in different schools. According to Kanstantopoulos;

> In addition, the female, race, and SES achievement gap varied significantly between teachers within schools, but not between schools both in mathematics and in science (except for the minority gap). This indicates that teachers may play a more significant role in the mathematics and science achievement gap than schools do. (p.2576)

These findings suggest that teachers are of utmost importance when addressing the achievement gap of students and that differences found in the achievement gap were due to teachers within schools. Teachers, with the support of their schools and their school systems, matter considerably when addressing the achievement gap.

This study failed to draw a consistent link between teacher diversity staffing and student test scores. However, when SES was able to be utilized as a covariate, significant differences were found on reading scores and schools with diversity staffing of 25% or more performed significantly better than schools with diversity staffing of less than 3%. Are there other ways in which an ethnically and racially diverse school environment is an advantage to students? The research on this effect in elementary schools is scant. Goldsmith (2004) examined how schools' ethnic and racial mix of both students and teachers effect African American, European American, and Latino occupational expectations, educational aspirations, and concrete attitudes. This study found that Grade 8 African American and Latino students are more likely to have high

educational expectations, high job expectations, and better attitudes than European Americans when attending schools that have high numbers of minority students. These attitudes and beliefs were found to be compounded in schools in which minority teachers and students predominate. According to Goldsmith:

> Moreover, the analysis suggests the blacks and Latinos in segregated-minority schools are not opposed to attitudes and beliefs that improve their achievement. In fact, this analysis suggests that blacks and Latinos in segregated-minority schools, especially those with many minority teachers, tend to have great optimism about their future education and desired occupations and tend to profess positive attitudes about their teachers and classes. (p.139, 140)

Another issue of SES relating to minority students, low test scores, and diversity staffing is the discussion of teacher attrition in high minority schools. Strunk & Robinson (2006) found that teachers are significantly more likely to leave the school in which they work if there are a high percentage of minority students. Also, African American teachers are less likely to quit when they teach in schools with higher percentages of African American teachers or students. These assumptions are based in social identity theory which purports that teachers may identify with their own racial group and prefer to work in schools where both the students and staff diversity percentages reflect their own race. Further, social identity theory would then suggest that because teachers may identify with schools that have a high percentage of students that closely resemble their racial group, and because teachers tend to interact more closely with students than other teachers, teachers would derive more satisfaction with their jobs if they were educating students of their own racial identity.

To the degree there is a mismatch between a teachers' own identity and that of the students or staff of a particular school, it may be considered more probable that it will result in teacher attrition. With the understanding there is a severe shortage of African American teachers', it may be assumed that those schools that have a high percentage of minority students will have much higher levels of teacher attrition. High teacher attrition may result in lower performance scores for African American students.

In future research, teacher attrition is a factor that must be considered when looking at student test scores, teacher diversity staffing, and SES. Strunk and Robinson (2006) explained that a schools percentage of minority students usually do not match the percentage of minority teachers. This mismatch of teachers and students, the subject of this study, should be considered in greater depth and should perhaps influence to a greater degree staffing recommendations. It is possible that schools and teachers contribute to this problem. To this extent, a more in-depth study should be considered in determining the effects on students of teachers in terms of race and cultural matches.

Limitations

No consideration was made to compare students from schools with similar SES backgrounds. The SES variables for each of the groups were not equal and the SES covariate could not be utilized in all areas. The SES covariate could not be utilized most of the time because of the significant interaction between the covariate and diversity staffing occurred in those instances. The mixed results indicate that when doing this type of research, it is important to look at people in the same socio-economic

background. If this study had been conducted utilizing students from schools that were all of the same SES, then more significant findings might have been realized.

Secondly, the students in this study were chosen from schools without regard to location. It may be better to choose schools from similar demographic backgrounds to insure equanimity of conditions contributing to the scores. Location is only one factor which may contribute to SES status of a school.

Thirdly, the researcher in this study did not take into account the Title 1 status of the school. Title 1 status, which is often tied to SES, means these lower performing schools receive additional funding and support staff which undoubtedly would greatly impact test scores.

Implications for Social Change

The findings of this study provide supporting evidence that the race of the person delivering services in the elementary classroom affects student achievement test scores. Results support the hypothesis in the reading test, where SES was able to be used as a covariate. In terms of implications for social change, this study raises important questions on factors associated with student SES.

The implications for social change have gone beyond what was expected and outlined in Section 1 of this study. It was noted that because the enactment of the NCLB of 2002 requiring all states to develop academic standards to meet federal requirements by the year 2014, all avenues to increase student performance should be investigated. While this study focused on teacher diversity as a means to increase student scores,

perhaps a larger issue dealing with the changes our culture is undergoing would have been better served as the focus.

Information gleaned from this study could be useful in addressing the pressing need of socioeconomic inequities found within schools and, indeed, within school districts. This study reemphasizes and highlights the effects economic issues have on our elementary students. This study also contributes to a growing body of knowledge locally, nationally, and globally which consider issues of race and poverty, and the effects these have on students as they learn and grow. The impact of raising awareness in the educational community of these important issues related to the diversity of our student population will enlighten policy makers, administrators, and other educational leaders to promote change within communities.

This research addresses diversity both of the teachers and of the students. Students living in low SES communities may be attending and benefiting from schools that offer Title 1 status. This research suggests, to a small degree, the increased money and staff afforded students who attend these schools result in gains in student achievement. Students who attend a school that does not have the necessary percentage to qualify for Title 1 status need to be considered. Perhaps it is the educational system's arbitrarily imposed percentage of free and reduced lunch applications and how that percentage is used to govern the additional spending at Title 1 schools that is shortchanging students who otherwise desperately need additional services. It would seem to be in the best interests of the school system, given the public pronouncements as

to the importance of test scores, to allocate whatever resources are necessary to help ameliorate the problem. It is in this perspective this study speaks loudly for social change.

Although it is important to further investigate the importance of having a diverse teaching force to better serve the needs of today's diverse student population, it may be more accurate to describe the implications of social change for this study as one found not in the racial makeup of the teaching staff, but more in addressing and ameliorating the SES inequalities. By addressing these important economic issues, as is currently being done with Title One schools, the sought-after student achievement gains may be realized by clearer educational goals, increased student efficacy, lower dropout rates, and a better educated society. The social implications of this study emphasize an important point that may need greater attention. Without important economic needs being met, both within the family and school, factors such as teacher race and social models may be far less important in determining higher achievement scores of students.

Recommendations for Action

The recommendations for action based on the conclusions of this study are many. The results of this study should be disseminated to and read by all policy makers and stakeholders within the public school system as well as parents who have an interest in issues of race, poverty, and the education of youth.

The issues of race and poverty are steeped in American culture, have been in the forefront of our collective thought, and have been negotiated since the beginning of this century. It would be difficult to adequately address such a complicated problem, so endemic within our culture, with any degree of completeness. Given the expansive

nature of the problems associated with SES inequalities, the inability to adequately address all of the concerns of such an issue, and the apparent inability of the governmental agencies to do the same, recommendations for action follow.

A change in public educational policy to respond more readily to the economic inequalities in our student population would ensure those students who need services receive them. Looking at the problem of test scores and performance gaps through the lens of race may be too simplistic. It may be more helpful for public policy makers to understand the complexity of the issue, to look at other issues such as poverty, opportunity, and cultural conditions rather than take a one-dimensional approach. An in-depth review of the setting up of Title 1 schools could be an excellent beginning focus. The rethinking of the Title 1 policy could possibly provide recommendations that allow a more flexible model and local control of the flow of money and services to those who need them. This flexibility is also important at the local level. By allowing school officials and teachers to determine who and how to dispense services to students with a greater degree of pliability is important in helping lessen the effects of economic disparity. Currently, many services are out of reach of students who need them because they do not qualify for such services. Because of legal mandates, administrators often have their hands tied as to who receives these services. In local communities, policies that foster affordable housing and new jobs greatly affect the culture of schools. Earlier in this study, it was explained that parents of low SES have trouble meeting the basic needs of the family and therefore have little time to help small children with schoolwork.

Although many problems associated with SES inequalities cannot be totally ameliorated, the solutions and recommendations ultimately have to be found at the local level. It is recommended that local school boards of education hire leaders that ask more of our schools. Leaders that are action oriented are needed to help lessen the severity of the SES problem. Therefore, principals and teachers need to pay attention to the results of this study. It is recommended that local administrators and teachers re-evaluate the level of action they are willing to contribute to help solve the problem. Solutions are needed at the local levels that foster action rather than mere discussion.

In light of the effect of the inequalities of low SES conditions amongst schools and students and the effect this may have on student test scores, it is also a recommendation of this study that high-stakes testing be reconsidered as the sole promotional tool. Rather, a combination of test scores, teacher and parent input and classroom activity should be considered when promoting students. This is important because often many factors such as student maturity, background, and other readiness factors may suggest a student is prepared for advancement, but with an undo emphasis on scores, promotion to the next grade is problematic. Cunningham and Sanzo (2002) suggest that a students' home environment influences success at school. Cunningham suggests student achievement cannot be improved by success on a single test. To further this philosophy is particularly unfair to low income students. Conversely, placing emphasis on a single test may cause retention for students who otherwise may be promoted. This may be equally detrimental to students as retention may be a strong factor in the possibility of the future drop-out rate of students.

The causal factors of racial and economic disparity are many. It is time for administrators, teachers, and parents to get beyond assigning blame and accept responsibility for disparate test scores. It is important that the issue of difficult SES conditions of students be addressed. Administrators need greater flexibility for dispensing services. Teachers need more flexibility in identifying and directing students toward needed services. Finally, parents need guidance in working more closely at home with students.

Recommendations for Further Study

This study provides support to existing research investigating how cultural context and a diverse elementary teaching staff significantly affect student performance scores. The differing levels of school and student SES was also found to contribute to the achievement gap between African American and European American students. There are several recommendations to extend the exploration of the issues set forth in this study dealing with racial diversity and similar economic concerns. Recommendations for further study include:

1. Research similar to this study should be undertaken. This type of study should ensure the diversity staffing would differ, but the SES of participating schools would be the same.
2. Research investigating the differences between diverse teachers at the same school, as opposed to diverse teachers between schools may also be an important recommendation.

3. A closer examination of the effects of differing levels of SES should be conducted to help further our understanding of the issue and how it relates to the educational environment.
4. This study should be replicated using a larger sample size and population at the state or national level.
5. This study should be replicated to use other national standardized tests, such as the ITBS, from which to gather data.
6. This study should be replicated using multiple grade levels to determine effects across grade levels.
7. More comprehensive, longitudinal studies should be conducted with data gathered over a period of time.
8. More study should be conducted on the effects on students of teacher role models who come from different racial and ethnic backgrounds.

Concluding Remarks

The question of the importance of teacher race and gender as it relates to student success, both inside and outside of the school walls, is one that needs to be much more thoroughly investigated. The issue of SES on student achievement should also be investigated. It is the opinion of the researcher that elementary schools across the nation may benefit if greater numbers of teachers from a greater diversity of backgrounds contribute to help educate our school children. It is essential that all members of our

society contribute to solving issues affecting education and to support the profession of elementary school teaching within families and cultures. Greater effort must be made to attract and retain male and female African American, Latino, Asian, and other much needed teachers. These teachers will provide a representative sample of the racial and cultural makeup of the nation. These teachers will also provide students the opportunity to be taught from a variety of world-views and perspectives.

The responsibility for creating positive learning environments ultimately rests with a populace that must accept the challenge to join the greatest profession of all-teaching. It is in teaching that the future rests on the shoulders of the young men and women of the future who will come from all races and ethnic backgrounds. It is in these ranks that we will find those who want to contribute and make a difference.

Finally, is it fair to compare schools in different socioeconomic districts based solely on high-stakes testing? Based on the factor of SES as it relates to this study, it would seem unfair to expect low-SES districts to compete solely on high-stakes testing. According to Toutkoushian (2005), high-stakes testing may be a misleading indicator as to how well schools are meeting the needs of their students. He posits that the relationship between outcomes and SES should be removed from this type of evaluation system. Addressing the many issues associated with SES may contribute more than any other factor in ameliorating the gap in the achievement scores between Black and European American students.

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