

THE EFFECTS OF TEACHING STYLES ON MALE ACHIEVEMENT IN
SINGLE-SEX AND CO-EDUCATIONAL CLASSROOMS IN SELECTED SCHOOL
DISTRICTS IN GEORGIA

by

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(Under the Direction of Yasar Bodur)

ABSTRACT

The purpose of this study was to examine the effects of teaching styles on male achievement in single-sex and co-educational classrooms in selected middle schools in Georgia. The researcher used the Grasha Teaching Styles Inventory Version: 3.0 to measure relationships between male achievement and teaching styles in single-sex and co-educational classrooms. The population of this study consisted of 16 teachers and 169 students in three middle schools located in Georgia. The survey identified characteristics of each category of teaching style. The teaching styles for this study were Expert, Formal Authority, Personal Model, Delegator, and Facilitator. These styles were considered to be the most common styles exhibited by teachers across the country (Grasha, 2002). This procedure allowed the researcher to see if teachers in single-sex and co-education classrooms differ significantly in the type of teaching styles exhibited. This procedure allowed the researcher to see if different combinations of teaching styles and educational environments significantly differ when examining male reading achievement during middle school.

The researcher hand delivered the surveys to each school and the designated Counselors and Instructional Coach distributed the surveys to the teachers resulting in a

100% rate of return. All statistical analyses were conducted using scaled scores. The unit of analysis was the individual students. The alpha level of .05 was used as the criterion for failing to reject a difference as statistically significant. The significance level for this study was ($p < .05$) as this created a better than chance relationship between the variables. Teachers' teaching styles were analyzed using Chi Square test because of the nature of the data (discrete variable). The second year reading achievement data and teaching styles data were analyzed using a 2 X 5 factorial analysis of variance (ANOVA). The SPSS program generated results to determine whether there was a relationship between the dependent and independent variables. In this design, the researcher tried to find whether a relationship existed between a particular teaching style and the level of male academic achievement and whether or not that relationship was statistically significant.

INDEX WORDS: Teaching styles, Male achievement, Single-sex classrooms, Co-education classrooms, Gender, Grasha teaching styles

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Partial Fulfillment of the Requirements for the Degree

DOCTOR OF EDUCATION

STATESBORO, GEORGIA

2009

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Electronic Version Approved:
May 2009

DEDICATION

This dissertation is dedicated to a few well deserving people who gave me their continuous support and encouragement throughout this process. First, I must give honor to GOD who gave me the strength to persevere and stand when times were tough. To my wonderful husband, Kelvin, for standing in the gap and making sure our home remained stable throughout this tedious process. This dissertation is for you because when no one else thought I could do it, you did. To my children, Nick and Savannah, thanks for your patience with late nights, Saturday mornings and too many holidays.

I want to dedicate the idea behind this dissertation to my son Nick who has grown into a charismatic young man with great potential even though your needs as a male were sometimes overlooked in the co-educational learning environment.

ACKNOWLEDGMENTS

I want to thank my major professor, Dr. Yasar Bodur, for his guidance and support through this process. I want to thank my committee members, Dr. Randal Carlson and Dr. Bridget Melton, who provided me with encouragement while setting high expectations to produce a quality study. To Dr. Shuntina Johnson, whose knowledge and words of encouragement meant so much as long days of researching became weary days of uncertainty. We started out as acquaintances and ended up being spiritual friends. The knowledge I have gained from this study has enabled me to become a better researcher and educator.

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CHAPTER 1

INTRODUCTION

Understanding diverse contexts of how males and females learn has penetrated the field of education for some time (McLaughlin & McLeod, 1996). The idea that males and females bring a great deal with them to the learning experience has led educators to consider new expectations about the capabilities of students, demanding new ways of implementing instructional strategies according to McLaughlin and McLeod. The authors also noted that providing equal opportunities for all students regardless of their gender, ethnicity, and language background was a necessity to increase academic achievement and, according to Kafer (2007), is the responsibility of the educational system. Kafer maintained that gender related differences in student achievement, especially in reading and math, indicated that male students have a greater risk of falling behind their female counterparts for various reasons. There are developmental, cultural, and educational factors that affect male and female academic achievement (Mead, 2006). Males and females also face obstacles that are a result of culture and social responsibilities that affected their skill level and created different opportunities at various stages of development (Mead). According to Bianchi (2004), males and females develop, learn, and benefit from an environment that caters to these differences. Friend (2006) stated that, although educational stakeholders promote single-sex classrooms to positively affect student achievement, a thorough examination of teaching styles is needed to ensure equal opportunities to academic success.

Mead (2006) discovered that there are many factors that impact male performance in school. This study has specifically focused on educational opportunities to increase

successful outcomes for males. Within the educational scope, teaching styles in single-sex and co-educational classrooms have been examined. Mead also reported that traditional classrooms were not accommodating to the needs of males. In the first and second grades males were stronger in visual-spatial activities and generally scored comparable to females on national standardized math tests. Yet, by third grade, Mead found that the achievement gap between reading and math was apparent and continued to increase with females performing higher than males as they progressed through grade levels. More males are labeled with learning, emotional, and behavior disabilities along with speech impediments (Dee, 2006). A higher percentage of males were suspended from school or retained, resulting in a greater dropout rate. Dee also maintained that males were considered to be disruptive in class and usually demanded negative attention from teachers. According to Freeman (2004), males were more likely to be physically victimized at school and involved in the use or abuse of illegal substances.

Dee (2006a) reported that pedagogical practices have become the focus of many researchers due to the negative academic outcomes faced by males. Interactions between teachers and students impacted education outcomes according to Dee. These interactions were also related to test scores, teacher relationships and perceptions about male abilities. Glatthorn and Jailail (2000) stated that males end up being overlooked when it comes to educational opportunities because of low teacher-student relationships and interest in school. Campbell and Wahl (1998) reported that teachers were the leaders and shapers of the classroom and should be vested in making education work. Teacher ability to adjust his or her style to meet the student needs is important when determining high quality outcomes. The U.S. Department of Education Office of Planning, Evaluation, and Policy

Development (2005) found that for years single-sex education has been viewed as an alternative for males and females. According to the U.S. Department of Education, single-sex classes were viewed as beneficial for students who experienced disadvantaged circumstances. Freeman (2004) reported that males and females were given similar educational opportunities, but their educational outcomes vary.

In an effort to reform the educational system to ensure academic success of male students, Tyre et al. (2006) noted that educators were exploring the implementation of single-sex classrooms. The National Association for Single-Sex Public Education (2003) found that single-sex schools helped students to focus on academics, which was the greatest indicator of success. Many co-education schools rarely embrace the stigma that learning is fun. Issues about who's who and who's doing what, take precedence at co-educational schools. On the other hand, Riordan (1999) found that single-sex schools helped students develop essential skills as well as become involved in activities.

Tyre et al. (2006) reported that males and females have experienced positive and negative effects of equal access to educational opportunities over the years. Consequently, over time, females have started to perform higher than males in reading, writing, and math. Perry-Johnson et al. (2003) found that by the end of middle school, the majority of males are academically inferior to females. According to Perie et al., although the score gap decreased with males and females performing on the same level in the 1980s; the gap increased again by the 1990s, with females performing higher than males. The U.S. Department of Education (2005) reported district reading assessment results from several major urban cities. In Atlanta, Georgia, males scored 14 points lower than females. Nationally, males scored 10 points lower than females in reading assessments.

Planty et al. (2007) stated that eighth grade students performing at proficient or above in reading and math assessments have not varied significantly over the past 10 years but show improvement. As a result, low academic achievement and other indicators such as drop-out rates and social stigmas have allowed females a greater opportunity to experience academic success (Perry-Johnson et al).

The Georgia Department of Education (2007) report on academic achievement indicated that eighth grade males scored lower than females in reading (1 point), math (4 points), social studies (8 points), and science (7 points) on the Criterion Referenced Competency Tests (CRCT); but scored 2 points higher on the language arts CRCT. In various Georgia districts such as Atlanta City Public Schools, Savannah-Chatham County, Clayton County, Cobb County, Dekalb County, Fulton County, Gwinnett County, and Richmond County, males far exceeded females in referrals for support programs and disciplinary actions (Holzman, 2006).

Schemo (2006) stated that, with the implementation of the No Child Left Behind Act, schools have the opportunity to decrease the achievement gaps between males and females with single-sex classrooms. An estimated 14,000 males from grades seven to twelve have dropped out of school in Georgia. Over 60% of males, compared to 30% of females, were retained in Georgia. Although males experience increased deficits in academic achievement and discipline, equitable opportunities continued to support female achievement in an effort to recognize Title IX laws (Riordan, 1999). Lee, Grigg, and Donahue (2007) reported that females performed higher than males in reading and math by an estimated 7% in Georgia. Male students in Georgia performed lower than the national proficiency score in all areas according to Perie et al. (2005). Educators and

reformists were faced with the dilemma of whether or not to promote single-sex education in an attempt to provide interventions for male underachievement. According to Coleman (2006), legislators were viewing single-sex education as a possible intervention to increase male academic achievement.

Before and after studies regarding male achievement was conducted and reports by the NASSPE (2003) supported the success of single-sex education. The reports targeted schools that transitioned from co-educational to single-sex classes with the same males and females, teachers, and school buildings. In 2000, Benjamin Wright, a principal at Thurgood Marshall Elementary School in Seattle, began the aforementioned transition and saw a dramatic decrease in discipline referrals, from 30 to an average of two per day. Suspensions and expulsions also decreased to zero percent. Not only did discipline improve, but academic achievement as well. Male achievement increased from an average of 30% to 73%. Reading scores increased from 20% to 66% and Thurgood Marshall Elementary received the highest scores in the state for writing with an increase from an estimated 20% to 66 percent. Attendance remained at over 90% for three years.

Principal George Smitherman at Moten Elementary School in Washington D.C. also transformed the school from co-educational to single-sex in 2001, according to the NASSPE (2003). With 98% of students on free and reduced lunches in one of the poorest areas of Washington D.C., he saw a dramatic increase in achievement on standardized tests within one year. Math scores on the Stanford 9 had increased from 49% to 88%, reading increased from 50% to 91%, and discipline decreased by 99%. High schools also experienced similar results. Eighty percent of students began to pass their End of Course Tests in comparison to 65% before the transformation.

The BEST (Business, Engineering, Science, Technology) Academy at Benjamin S. Carson and the Coretta Scott King Young Women's Leadership Academy have started their first year of providing separate environments for males and females. The initiative came about in an effort to improve student achievement and decrease dropout rates according to the Atlanta Public Schools Student Report (2007). After reviewing data, school officials became aware of the need to increase student achievement while increasing graduation rates and post-secondary opportunities for those who faced challenges within their communities. Imagine Wesley Charter School initiated its single-sex program, after extensive research, in August 2007 to eliminate obstacles in the co-educational setting in an effort to provide males and females with quality learning (Imagine Schools Profile, 2007). The goal was to provide an alternative approach to education by targeting the specific needs of students to ensure successful outcomes.

Background of Study

One of the initial goals of single-sex education was to improve academic opportunities for males and females (American Association of University Women Educational Foundation [AAUW], 1992). Thompson and Ungerleider (2004) also stated that improving academic opportunities was one of the primary goals of single-sex education. According to the AAUW, the success of single-sex classrooms depended on how reformers measured the impact of factors such as academic achievement, course preference, and overall outlook towards learning. Perie et al. (2005) stated that 24% of the males surveyed disliked school. According to the National Association of Single-Sex Public Education [NASSPE] (2006), breaking down barriers in traditional classes and encouraging students to explore individual interests was another goal of single-sex

classrooms. Perie et al. also reported that males participated less than females in non-athletic extracurricular activities and programs such as clubs, student organizations, and fine arts programs, resulting in only 19% involvement. The report stated that participation in such activities was the key to creating equality in education.

Single-sex classrooms have been under the microscope of Title IX to ensure the Equal Protection Clause of the 14th Amendment (Salomone, 2000). Newberger (1999) stated that as feminist laws and women's organizations continued to support the ambitions of females, there was a paradigm shift in the dominating roles of males as dictated by current responsibilities and educational opportunities. According to Thompson and Ungerleider (2004), there were psychological and social benefits for having single-sex classes because the environment contributed to breaking down gendered climates that discouraged students from enrolling in non-traditional courses, whereas co-education reinforced them. According to Reeves (2006), a Florida study randomly placed male students in single-sex and co-educational classes to determine specific needs in order to increase academic achievement. The results revealed that 86% of males in single-sex classes scored proficient on writing achievement tests while only 37% of males in co-educational classes scored proficient according to Perie, Moran, and Tirre (2005). The report also stated that 36% percent of males as compared to 26% of females did not find value in the curriculum. Thirty-three percent of males also believed learning in their current academia would not help them in the future. Parker and Leonie (2002) reported that single-sex classroom instructional strategies and teacher involvement were pathways to increase male achievement.

Balkin (2002) stated that supporters of single-sex education were examining why segregation of the sexes was viewed as a better educational opportunity. Rowan (2001) discovered that the classroom environment contributed between 4% and 10% of yearly achievement gains. Dee (2006a) also reported that male underachievement was determinant upon the classroom environment. Thompson and Ungerleider (2004) suggested that differences in academic achievement should reflect measurements based upon girls to girls and boys to boys, rather than girls to boys. Reeves (2006) also reported that, due to learning variances between genders, comparisons would only reinforce stereotypical expectations. Newberger (1999) maintained that males are often misunderstood and underestimated. Tyre (2006b) noted that labels were attached to males because there was a lack of understanding about their biology and behavior. Additionally, Tyre noted that males were academically behind females and were 11% more likely to be perceived as discipline problems. Schools were not catering to the needs of males and this has resulted in a crisis with male education. Dee (2006a) reported that teacher-student relationships impacted student performance and educational outcomes. Males were aware of the negative perceptions teachers have and the lack of effort to establish positive connections. As a result, lower teacher expectations contributed to male disconnectedness, creating barriers between the student and the teacher. Dee also reported that beliefs and perceptions held by students and teachers impacted male achievement.

Symonds (2004) asserted that teachers who spent more time trying to understand the needs of the students experienced higher and faster educational gains than teachers who did not. The study revealed that 75% of the teachers who failed to understand

individual student achievement saw a slower rate of educational gains among students. Symonds (2004) stated that teachers must learn to connect with students and afford them the opportunity for success in the classroom environment. Teachers who experienced rapid educational gains addressed issues of gender openly and implemented specific strategies to address student achievement. Dee (2006b) asserted that teacher-student relationships were the foundation of academic achievement and increasing knowledge on how to connect with students would enhance the learning opportunities for males.

According to Grasha (2002), teacher-student relationships affected learning styles in the classroom. Learning styles, according to Grasha (2002a), were selected based on how students chose to learn. Learning styles were individual aptitudes that influenced male and female ability to attain information, connect with peers and teachers, and engage in learning opportunities. Grasha (2002) found that students have different needs and learning styles affect the way they attain knowledge and establish relationships with people they interact with on a daily basis. Grasha (2002a) reported that interactions from teachers shape and support the way students adopt various learning styles. Grasha (1994) found that teaching styles affected learning and certain reactions impacted how students responded. According to Grasha (2002), the learning styles are considered part of the teaching philosophy because they provided a reason for implementing a variety of strategies during instruction. The learning styles most commonly displayed in relation to the five teaching styles according to Grasha (2002) were competitive, collaborative, avoidant, participant, dependent, and independent.

Grasha (2002) explained that competitive learners made the effort to perform better than their peers; collaborative learners liked to share ideas and talents; and learners

who exhibited avoidant learning styles were not enthusiastic about being engaged or being a part of the classroom activity. Students who were participant learners displayed good citizenship and enjoyed being a part of the class; dependent learners did not take the initiative to explore information and viewed the teacher as the main supporter; and independent learners were confident and worked alone in the classroom. According to Grasha, these styles are related to a mixture of characteristics that can be connected with any type of learner and integrated with certain teaching styles.

Learning was only part of the teacher-student relationship according to Grasha (1994). Teaching styles were the model of needs, beliefs, and behaviors exhibited by teachers in the learning environment. Grasha found that a thematic interpretive of data collected represented five distinctive teaching styles that included Expert, Formal Authority, Personal Model, Facilitator, and Delegator. Grasha (2002) noted that teaching styles reflected actions that were representative of the way teachers conducted class and can be determined by the description or method of how the teacher teaches. Grasha maintained that teaching styles were identified by the elements that gauge self-examination to ensure the climate was conducive for learning. The elements of teaching styles included (1) classroom behaviors that were categorized with expert teaching, (2) exceptional characteristics and teacher roles that were categorized with formal authority teaching, (3) methods of teaching and personality traits that were identified with personal model, (4) common behaviors that were identified with delegator and (5) archetypal forms of teaching that were identified with facilitator. Grasha found that teachers exhibited each of the teaching styles examined in the study, although one style was often

used more than the other. The elements of teaching styles were also attributed to actions that were common across all five categories and played a vital role in the classroom.

The AAUW (1998) reported that although student achievement can be gained in a single-sex environment, teaching styles were primary factors in the educational reformation. The AAUW also stated that teachers were viewed as leaders, disciplinarians, and shapers of the single-sex or co-educational classroom. According to Leithwood and Riehl (2003), creating powerful communities within schools and understanding the needs of students were important factors for teachers to consider when making connections. Specifically, Morin (2003) reported that in a study conducted with junior high school math teachers, beliefs that males were not interested in the class were a staggering 45% even though results indicated males had potential to progress. The study also revealed that 48% of teachers believed males learn better in competitive classrooms. Haberman (1995) suggested that teachers should take the opportunity to understand male biology and behavior so that positive connections were made in the classroom. Haberman emphasized that a typical student has an estimated 54 teachers by graduation, signifying that all educators have the responsibility of connecting with males and creating opportunities for their educational success. The Caroline and Sigmund Schott Center report (2003) indicated that gender based learning training should be a part of the teacher education program because teaching styles impact males across all curriculum areas.

In order to determine the effectiveness of single-sex education, Campbell and Wahl (1998) reported that programs must exist beyond a certain length of time. According to Perie et al. (2005), the long-term benefits of single-sex intervention must be considered when preparing students to be successful throughout their school careers.

Salomone (2000) stated that legislators must also remove the legal barriers that hang over single-sex education and allow schools the flexibility to develop programs to meet the needs of males. In addition, empirical data were needed for a certain length of time to determine if single-sex or co-educational classrooms were the best educational option for males according Campbell & Wahl. The driving force for supporters and opposers of single-sex education was whether it increased male student achievement (Bianchi, 2002). Single-sex education should not be used as a quick-fix solution that lends itself to the political attacks instead of focusing on male student achievement.

There was paucity in the literature about teaching styles and male achievement in single-sex classrooms. Teaching styles seemed to be an important factor when evaluating the opportunities for success in the classroom (Campbell & Wahl, 1998). According to Glatthorn and Jailail (2000), teachers that established effective styles in the classroom provided increased opportunities to improve male achievement. Campbell and Wahl suggested that teachers examine the culture of the classroom and alter their teaching styles with the norms and expectations of the students' social and academic needs.

Thompson and Ungerleider (2004) found that there appears to be a lack of focus on teaching styles and the impact it has on student achievement in single-sex and co-education classrooms. Parker and Leonie (2002) found that when teachers were able to implement teaching styles specific to their students, certain skills could be targeted. Campbell and Wahl (1998) discovered that teachers were responsible for creating a climate that encouraged students to be successful by providing the opportunities for increased academic achievement. Teaching styles made a difference in single-sex classrooms when attempting to increase male academic achievement.

Statement of the Problem

The disparities between male and female achievement in co-educational settings have generated debate as to the viability of single-sex education according to Campbell and Wahl (1998). Teaching styles were critical when determining what factors impact educational opportunities for males (AAUW, 1992). According to Tyre (2006b), males were viewed as loafers and uncommitted to increasing academic achievement. Haberman (1995) found that teaching styles were essential to influencing and increasing male academic achievement in the classroom.

Teaching styles in single-sex and co-educational classrooms should be explored to a greater degree to understand contributing factors that impact male achievement (Thompson & Ungerleider, 2004). Even though there were studies that focus on the student beliefs about achievement, little has been researched in regards to teacher styles and the impact it has on achievement. Haberman (1995) asserted that boys scored lower academically and teachers are not taking the time to learn about the students' needs or culture. Teachers must make the connection between the curriculum and student interests, which will require stepping out of their comfort zones, to make powerful connections in the classroom. Therefore, the purpose of this study was to assess the differences in teaching styles and the impact it has on male achievement in single-sex and co-educational classrooms.

Research Questions

1. Do male students in co-educational and single-sex classrooms differ in their reading gains as measured by standardized test scores?

2. Do teachers in co-educational and single-sex classrooms differ in their teaching styles toward males?
3. Is there a relationship between teachers' teaching styles and male students' reading achievement in different classroom settings (single-sex versus co-educational)?

Significance of the Study

This study helped teachers identify teaching styles that impacted male achievement in single-sex and co-educational classrooms. This study attempted to contribute to the literature in the field by identifying contributing factors of teaching styles that impacted male achievement. The results of the study helped teachers and administrators understand the importance of developing teaching styles that positively impact male academic achievement. The results of the study informed policy makers about single-sex and co-educational classrooms.

Thomas and Ungerleider (2004) reported that single-sex education was considered an alternative to co-education in an effort to minimize the achievement gap between males and females. Campbell and Wahl (1998) stated that educational reform should consider examining teaching styles that may influence male achievement. Teachers must implement strategies that enable them to connect with males and create strong communities within the classroom (Liethwood & Riehl, 2003). Tyre (2006b) reported that males have more behavior problems, lower academic achievement, and a greater chance for dropping out of school. Haberman (1995) insisted that effective teaching styles helped to alleviate many of the negative experiences that males face daily resulting, in poor academic achievement.

Teaching styles in the classroom were examined to provide a greater understanding of the relationship between teaching styles and male student achievement. Educators benefitted from this study by considering professional development opportunities to assist with fostering teaching styles that met the needs of males. It was the goal of the researcher to gain information from teachers with high and low male achievement to help other teachers identify factors that impact male achievement. From this study, teachers were able to target problematic areas and increase the opportunities for improved male achievement. The results of this study added to the existing body of literature on single-sex classrooms versus co-educational classrooms in an effort to help educators understand the importance of implementing teaching styles that may increase male achievement. The study also enabled educators to examine the needs of males within their schools and determine if present teaching styles positively or negatively impact male achievement.

Definitions of Terms

For clarification and understanding of the reader, in this study the following terms are defined:

1. Academic Achievement – Represents mastery and solid performance demonstrating competency in subject matter (Snyder, Dollow, & Hoffman, 2007).
2. Co-Education – Males and females educated in the same classrooms including lunch and electives (NASSPE, 2006).

3. Delegator – Concerned with developing students’ capacity to function in an autonomous manner. Students work independently on projects or as part of autonomous teams (Grasha, 2002).
4. Expert – Possesses knowledge and expertise that students need. Strives to maintain status as an expert among students by displaying detailed knowledge and by challenging students to enhance their competence (Grasha, 2002).
5. Facilitator – Emphasizes the personal nature of teacher-student interactions. Guides and directs students by asking questions, exploring options, suggesting alternatives and encouraging them to develop criteria to make informed choices (Grasha, 2002).
6. Formal Authority – Possesses status among students because of knowledge and role as a teacher. Concerned with providing positive and negative feedback, establishing learning goals, clear expectations, and rules of conduct for students (Grasha, 2002).
7. Learning Style – Preferences for how people prefer to learn (Grasha, 2002a). A profile that resides in every student (Grasha, 2002).
8. Male Achievement – Adequate performance in the classroom and on assessments that meets proficient requirements in the classroom, district, state, and national assessments in comparison to female peers of the same age (Mead, 2006).
9. Personal Model – Believes in “teaching by personal example” and establishes a prototype for how to think and behave. Oversees, guides, and directs by

showing how to do things, and encouraging students to observe and then to emulate the teacher's approach (Grasha, 2002).

10. Personality Traits – Characteristics found in formal theory of personality or the outcomes of observations that group teachers with similarities (Grasha, 2002).
11. Single-Sex Classrooms – All male or all female classes within co-educational schools that have some co-educational activities such as lunch or electives (NASSPE, 2006).
12. Single-Sex Education – Schools that offer all activities including lunch and all electives classes in a setting, which is all male or all female (NASSPE, 2006).
13. Social Organization – The structure of social relationships within a group, usually the relations between its subgroups and institutions known as schools (Campbell & Wahl, 1998).
14. Teacher Role – Consistent patterns of behaviors that guide and direct thoughts and behaviors in specific situations. Roles include consultant, resource person, and personal model (Grasha, 2002).
15. Teaching Methods – Preferred instructional practices of teachers that describe their style. Labels and styles become synonymous with the methods employed in the classroom (Grasha, 2002).
16. Teaching Styles – Manners or modes of acting or performing defined by guiding and directing instructional processes as well as patterns of needs, beliefs, and behaviors displayed in the classroom. (Grasha, 2002).

CHAPTER 2

THE EFFECTS OF TEACHING STYLES ON MALE ACHIEVEMENT IN SINGLE-SEX AND CO-EDUCATIONAL CLASSROOMS IN SELECTED SCHOOL DISTRICTS IN GEORGIA

Historical Perspectives

The father of American Education, Horace Mann, believed that every child born in America should be able to attend school (Mason-King, 2004). Mann believed that whether a child was rich or poor, equal education was a birthright. Having ...“a common school would be the ‘great equalizer’ reported Mason-King” (p. 1). Mann laid the foundation for the first public school in America (Mason-King, 2004). According to Dunae (1997), the legislators of the Common School Act insisted that public education should be accessible to all children. Dudley (2007) contended that the goal of public education was to prepare students with basic knowledge to become good citizens. Although public education was established to educate all students, females were not allowed to attend formal school in the beginning. According to the National Association of Single Sex Public Education (NASSPE, 2003), formal education was afforded to males while females were educated domestically. Jackson, Stanaback, and Martinez (2005) found that when females received the opportunity to go to school they were not taught the same subjects as males or encouraged to pursue a higher education. Males were educated in subjects that were more rigorous and were provided the opportunity to receive higher levels of education.

According to Tyre (2006b), over time, women’s rights mandated equal educational opportunities and protection against discrimination. By 1972, Title IX bound schools to ensure opportunities across all educational domains. Sadker (2004) reported

that Title IX guaranteed protection against sex discrimination. This law benefitted females by declaring efforts to build schools that ensured gender equality. Tyre claimed that over time females began closing the gap and males were left behind. Newberger (1999) found that as feminist laws and women organizations continued to support the ambitions of females, society began to view males as aggressive and unwilling to conform to the social structures of equality.

Why Single-Sex Education?

According to Tyre (2006b), supporters of single-sex education are reviving the idea of separate learning environments for males and females. Schemo (2006) claimed the Department of Education has considered the reauthorization of Title IX to provide flexibility for single-sex classrooms and schools in order to meet the goals of No Child Left Behind. No longer will single-sex schools be required to show a significant reason to justify their operations. Educators have been given the approval to bolster the number of single-sex classrooms and schools. Stipulations should be considered, such as voluntary enrollment and...“classes of ‘substantially equal’ quality available for members of the excluded sex (Schemo, p. 1)” has been recommended. As a result, there has been a significant increase in the interest for single-sex classrooms and schools. Reeves (2006) stated that supporters of single-sex classrooms provided two reasons why this proposal was important; different learning styles of males and females, along with distractions often exhibited by the other sex.

NASSPE (2006) reported a comparison study of single-sex and co-educational schools was completed over a period of six years and results indicated an increase of an estimated 15% to 22% in achievement with males who attended single-sex classrooms.

According to a report by the NASSPE, males in single-sex classrooms found relevance in the curriculum. The report also indicated that co-educational environments have difficulty meeting the needs of large groups of males during the teenage developmental years. According to Tyre (2006b), while females were progressing with support of feminist organizations, males were falling through the cracks and receiving little support. Newberger (1999) was concerned about the perceptions of males being misunderstood and underestimated. The Rennie Center report (2006) indicated that although much attention was given to increase female achievement...“the pendulum may be swinging in the other direction”... (p. 1) and males are now receiving attention in order to address poor academic achievement.

Issues that Impact Male Achievement

The NASSPE (2003) reported that the goal of single-sex education is to decrease male underachievement and dropout rates. Standards such as Adequate Yearly Progress (AYP) have caused many schools to toss underperforming students aside (Perry-Johnson et. al., 2006). Tyre (2006b) claimed that, at an astounding rate, males are falling behind females academically and dropping out of school. In 2005-2006, the male dropout rate was 3.9% in comparison to a 2.6% female dropout rate according to the Georgia Department of Education report. According to Tyre (2006a), schools are not male centered which has resulted in a “crisis” in male education. Price (2006) reported that males are placed in classes where they cannot perform on the same level as females. Perry-Johnson et. al. claimed that the trend of males falling behind female counterparts seems to affect males of all races and socioeconomic levels.

Friend (2006) reported that the National Association of State Boards of Education (NASBE) viewed single-sex education as an intervention to address dropout rates, cutting classes, and disruptive behavior among students. The NASSPE (2003) acknowledged that single-sex education has the potential to increase grades, test scores, and decrease stereotypes. Friend reported that practices to improve male achievement have become a priority in an effort to meet No Child Left Behind. Datnow, Hubbard, and Woody (2001) found that single-sex classes decreased distractions and provided an environment that encouraged open discussions to meet the needs of males and eliminate gender comparisons.

According to Gurian and Stevens (2004), schools do not recognize and meet gender-specific needs. The NASSPE (2003) declared that single-sex education offered fair programs that increased educational outcomes. Friend (2006) asserted that schools are considered open systems that should recognize how teachers and the environment impact achievement. Heise (2004) argued that differences between males and females should be embraced instead of being overlooked. Ai (2002) stated that issues of teaching styles and achievement have become persuading factors to re-establishing single-sex education.

Understanding Males

Males and females possess different biological components that result in uneven maturation and learning styles according to the report from the Rennie Center (2006). Halpern (2002) discovered that maturity levels for males and females developed at varying rates, therefore interactions should vary. Labels are often associated with males

simply because there is a lack of understanding when it comes to their biology make up and their behavior (Tyre, 2006a).

Barker (1997) reported that the brains of males were found to be inferior to females due to less stimulation in academic areas and more involvement in physical activities requiring little expression of feelings. The verbal lobes of males were not fully developed, making their opportunities to cope with intensive language difficult. Tyre (2006b) reported that adolescent boys feel overwhelmed at times, but often hide their true emotions for fear of being labeled weak. Newberger (1999) found that males suffer from low self-esteem just as much as girls, but it is less noticeable.

According to Gilligan (2006), males experience depression as well as speech and learning disorders as early as elementary school. Newberger (1999) reported that statistics showed that adolescent males are identified emotionally or learning disabled more so than females. Tyre (2006a) claimed that males were placed in special education at a rate twice as often as females. Males are more likely to repeat one grade level and be placed in special education. Tyre (2005) reported that 70% of students that are identified with learning disabilities are male. Tyre (2006b) reported that from 1980 to 2001 males dislike for school increased to an estimated 70 percent. Dee (2006a) found that the achievement gap between males and females increases with age. From elementary to postsecondary school, male and female achievement gaps have become more noticeable (Elwood, 2005). In elementary school, males read less and score less on standardized tests. Tyre (b) reported that males begin getting into trouble around age five. It is no surprise that in elementary school the light bulb goes off within males, hiding their

intellectual ability, and resulting in receiving behavioral labels that cause them to fall behind (Robinson-English, 2006).

Tyre (2006b) also found that as males leave elementary school and embark upon middle school, they are persuaded into fads, socializing, and disinterest, which cause them to fall behind females, making it difficult to catch up. Throughout middle school, males continue to score less on standardized tests, and are more likely to get into serious trouble. Barker (1997) found that as males become older, they tend to be jokesters, noisy, and impulsive. Perry-Johnson et. al. (2006) reported that this type of behavior depicts the notion that negative attention is better than no attention at all. Price (2006) claimed that 70% of students receiving D and F grades are males as a result of low achievement in reading and writing as compared to females. A staggering 80% of males are involved in disciplinary problems and remain at a higher risk for dropping out of school (Newberger, 1999). Price also found that teachers must implement immediate action to help close the achievement gap between males and females by making connections that will last after boys exit the schoolhouse doors at the end of the day. The NASSPE (2003) reported that single-sex education might reduce distractions in middle grades where more distracters occur than any other grade level.

Chaplain (2000) discovered that males were often placed in an environment that did not promote studying; instead a masculine perception was expected to define their adolescent identities. Self-esteem has also become a factor in the achievement gap between males and females (Price, 2006). Smith (2004) indicated that males must be taught how to advocate for themselves and be aware that outcomes for playing the macho role result in underachievement when compared to females. Informing males about the

dynamics of assessments increased their desire to take their academic achievement seriously. Heise (2004) suggested that educators understand the dynamics of male achievement in order to implement adequate educational opportunities.

There are several factors, in addition to low achievement, that contribute to under-achievement of males such as impulsivity, lack of interest, and disruptive behavior according to Barker (1997). Perry-Johnson et. al. (2006) reported that males are viewed as predators with low or no work ethics. Newberger (1999) found male hormones have been the suggested reason for their aggressive behavior, lack of verbal expression, and quick fix problem solving techniques. Many males find it pleasing to seek instant gratification, whether it is taking drugs or participating in unethical practices, males seem to validate themselves in mischievous behavior rather than risk being non-existent according to Perry-Johnson et. al. Newberger claimed that males have gained a bad rap over the years and have been portrayed as violent, competitive, and sex addictive with little compassion towards others. Males view themselves as risk takers and unsympathetic to others according to Barker. Males also like to question authority, resulting in being spoken to harshly or sent out of the classroom.

Male Behavior

Mead (2006) reported that 42% of males have been suspended in comparison to 24% of females according to the U.S. Department of Justice. Tyre (2006a) discovered that males are more likely to be involved in crime, be more competitive, be considered overly sexual creatures, be too physical, and lack empathy. Ai (2002) found that skipping class, discipline problems, and non-interests in school contributed to student behavior concerns and the ability to progress academically. Mead (2006) reported that males are

twice as likely as females to receive a diagnosis of Attention Deficit Hyperactivity Disorder (ADHD).

The Snyder et. al. (2006) reported that in Georgia 2,103 males were expelled while only 665 females were expelled. The state also reported 84,459 males were suspended compared to 36,714 females in Georgia. Perie, Moran, and Tirre (2005) reported that males were 5% less likely to participate in after-school programs. Rooney et al. (2006) reported that males continued to fall behind in participation of after-school programs. The report revealed that males were more likely to be engaged in violent crimes at and away from school. Males 12 to 14 years of age were involved in violent crimes at school 18% more often than females.

Single-Sex Classrooms vs. Co-Educational Classrooms

Mead (2006) noted that there are many factors that affect male achievement ranging from instructional practices to classroom settings. The classroom environment has an impact on student achievement and the interactions between teachers. Friend (2006) reported that single-sex class surveys revealed there was a positive response in the classroom, although the impact was not significant. Grasha (2004) also found that the learning styles of students guide the interactions between teachers. Students and teachers influence each other in the classroom and the actions between one another impact relationships. Mead claimed that the need for more structure and discipline has been difficult to balance. Drehle (2007) reported that some schools have eliminated labs, physical education, and recess, which are environments males need for greater movement. Males need an environment that allows frequent movement. Mead explained that males have difficulty adjusting to the structure of the typical classroom because of

their need to be actively engaged. Tyre (2005) found that giving males space, less organization, and various seating arrangements were beneficial strategies. The Education Alliance (2007) explained that males have shorter attention spans and need more physical movement. Howard, Sansted, Peterson, and Du (2003) reported that separate environments would allow males to focus on instruction and be less distracted by the opposite sex. Males also had the opportunity to participate in open discussions and were shown leniency when dealing with aggressive gestures resulting from eagerness to contribute to the lesson. Single-sex classes may offer males the opportunity to receive instruction they may not get in co-educational classrooms.

According to Schemo (2006), concerns regarding male achievement in middle and high school have caused educators to consider single-sex education. Reeves (2006) noted that single-sex schools take into consideration the different learning styles of males and females. Separate learning environments for males and females eliminate distractions that interfere with learning. Recognizing the different learning styles between males and females allows for exploration in subject areas that are typically of interest to the opposite gender. Academic courses such as math, science, and computers are considered atypical classes for females and language arts and art classes are atypical for males.

Parker and Rennie (2002) reported that the curriculum in single-sex schools should demonstrate equitable opportunities to males and females. The separation of males and females allows teachers to understand and identify the different patterns of interactions with males and females. The study concluded that teachers reported a change in the environment because of their knowledge of male and female learning styles. The awareness had an effect on teachers who taught the same students in co-educational

classes and single-sex classes. According to Mael, Alonso, Gibson, Rogers, and Smith (2005) a review of single-sex education found more advantages for male and female academic aspirations than co-education. In single-sex classes, students were more inclined to take difficult courses. The culture of single-sex classes promoted academic ambitions for males and females rather than socializing. Co-education classes were viewed as relaxed cultures that promoted more opportunities for social contact between males and females. Lawless and Poling (1996) reported to the Chairman, Committee on the Budget, and House of Representatives that program officials stated that single-sex classes offered greater opportunity for increased test scores, increased attendance rates, and a decrease in behavior problems.

The United States General Accounting Office (1996) found that single-sex classes may alleviate gender bias and distractions that are part of the co-education classroom. Bracey (2006) reported that educational practices were the basis of what single-sex education offered above gender comparisons. Riordan (2002) noted that single-sex classrooms were beneficial for minority students who come from low socioeconomic backgrounds and who are considered at-risk for failing. Sax (2005) found that single-sex education prepares students for successful post-secondary opportunities. According to Parker and Rennie (2002), single-sex classrooms provided the opportunity for a greater level of interaction with the teacher and less harassment from the opposite sex. Students held the perception that single-sex classes were more supported than co-education classes. Teachers provided more in depth teaching opportunities that allowed for meaningful problem solving strategies for students. Additionally, teachers provided non-academic interactions between males in single-sex classrooms that allowed for increased

teacher-student relationships. Single-sex classrooms gave teachers the opportunity to focus on the needs of males in the areas of work ethics and communication.

According to Parker and Rennie (2002), males need females in co-education classes to help manage their desire to socialize and take an interest in learning. Teachers reported that girls' presence helped to manage the behaviors of males in co-educational classes. In co-education classes, teachers also gave little effort to improve communication with males and often overlooked work ethics among males. Teachers also provided few opportunities to challenge females with higher order critical thinking skills. Lawless and Poling (1996) reported that similar instructional strategies implemented in single-sex classrooms are just as successful in co-education classrooms. Providing teachers with training that recognizes male and female student needs can also help to eliminate bias in co-education classrooms. Sax (2005) found that, although females and males have different learning styles, they must be able to live productively in a co-educational community. Dee (2006a) stated that student-teacher relationships impact male and female academic achievement, especially in middle school years.

Hannon and Ratliffe (2007) stated that gender dominance in sport activities are not seen in single-sex education, while it is more prevalent in co-education classes. Kelly (2002) noted that teachers must consider short periods of gender separation in the learning environment. Teachers must also give attention to instructional material and decide how it impacts males and females in an effort to promote equal opportunities for learning. Teachers must reflect on their style of teaching by planning and integrating opportunities to deal with equity while giving males and females meaningful assignments and assessments that ensure academic achievement. Bleuer & Waltz (2004) found that,

although males score at or above females in the area of science, they are categorized as failures in schools usually assigned to special programs for additional instructional assistance. Although it appears that males receive more attention from teachers in co-education classes, it is the result of redirecting for unacceptable behaviors. Flannery (2006) reported that single-sex classes may promote stereotypes such as males having behavior issues, being overly active, and being disinterested in school. Teaching styles and classroom structure have been proven to impact single-sex and co-education classrooms positively and should be the focal point of interventions to meet No Child Left Behind. In order for single-sex and co-education programs to be successful, teachers must have a desire and the training to teach in a specific culture to ensure each student has the opportunity to reach their full potential.

Male Achievement

Kleinfield (2006) stated that males lag behind females at an average of a year and a half. Mead (2006) found that around age 13 males score an average of 10 points lower than females. Mead reported that males are 3% more likely than females to be retained in school. In Georgia, 62.3% of students retained are male, in comparison to 37.7% of females, according to the State Department of Education. Ten percent of males miss more than 15 days of school in comparison to 9.5% of females. The report showed that males were more likely to come to school unprepared by 9.2 points in comparison to females. Sanders (2002) noted that male reading levels are lower than females at all grade levels. Rooney et al. (2007) revealed that males fell behind females in the 8th grade by an average of 10 points, but the math gap has lessened over the years. Results from the study showed a gap of 1.47 in math between males and females. Mead (2006) also stated that

males performed lower than females in writing across every grade level. Ai also found that if females had an increase in their academic growth rate, the gap increased to 2.4 points above males. Mead reported that males performed lower than females in writing across every grade level. Zhang and Wang (2007) found that males had a 5% to 9% lower rate than females in efforts to pass state tests in the eighth grade.

Ai (2002) reported that background variables were generated in a study to determine achievement and discovered interest and usefulness were considered elements of student attitudes towards learning. Ai found that high expectations from teachers affected student attitude towards learning. The study also established that male attitudes were affected greater than females when it came to learning. Newberger (1999) stated that a staggering 80% of males are involved in disciplinary problems and remain at a higher risk for dropping out of school. Price (2006) stated that teachers must implement immediate actions to help close the achievement gap between males and females by making connections that will increase academic success.

Perry-Johnson et al. (2006) noted that males are not preparing themselves to meet academic expectations in public schools. Bearne and Warrington (2003) reported that male achievement was linked to disattachment with their own learning environment. Zhang and Wang (2007) reported that 8th grade males discuss their school experiences 3% to 8% less than females. Turner and Patrick (2004) indicated that males tend to avoid activities that required engaged tasks and had a lower rate of achieving mastery goals than females. Results of a study by Garton, Spain, Lamberson, and Spiers (1999) indicated that males received a low percentage on making contributions to their learning. Gurian (1996) stated that teaching styles should be altered to meet the needs of males.

Disparity in Reading Achievement

According to Howard et al. (2003), research findings that males are not benefiting from current educational practices are representative in state and national male achievement scores. According to Tyre et al., females scored an estimated 10 points higher on reading achievement tests and 20 points higher on writing achievement tests than their male counterparts. The Georgia Department of Education found the largest discrepancy in the area of reading and writing. Perie, Moran, and Tirre (2005), reported that females have performed higher than males on national reading assessments by an average of 10% over the last 25 years.

Zhang and Wang (2007) also reported an eight-year trend that revealed males performed lower than females in reading. Eighth grade males scored between 4% and 8% lower than females in reading. Perie, Moran, and Tirre (2005) found that males performed lower than females in reading assessments at age thirteen. Rooney, Hussar, Planty, Chay, Hampden-Thompson, Provasnik, and Fox (2006) also reported that males fell significantly behind in reading by 5 to 10 points in 2005. Zhang and Wang discovered that eighth grade males were reported reading daily at home on an average of 7% to 11% less than females.

Teaching Styles

According to Newberger (1999), teachers are searching for the answers to make connections with male students. Schulte (2004) stated it is important for teachers to take the time to understand male biology and learning styles. Teachers should become “culturally competent” and realize that a teacher’s reality is not the same as a student’s reality. Simply altering teaching styles can impact the way males receive and retain

information. Changing instructional strategies does not change the validity of the information, it just changes the way students understand it. Gilligan (2006) claimed that males are aware of barriers that impact teacher relationships and that their response can be perceived by teachers as being disruptive. The needs of males must be acknowledged in order for males to reach their full potential.

Schulte (2004) discovered that underachievement of males has become a problem due to teachers failing to reflect and understand the diverse population they face each day. Haberman (1995) reported that teachers should be equipped to deal with assertive and intimidating boys. A typical student has an estimated 54 teachers by graduation, reflecting the notion that teachers should make an effort to create opportunities for success. According to Boaler (2002), having access to the same opportunities for academic achievement in the learning environment impact males greater than gender differences. Tyre (2006b) reported that a large percentage of males struggle in school. According to Tyre, males and females should be separated and given an environment that aligns with their development.

According to Grasha (2002), teaching styles define, guide, and direct instructional practices that impact students and their ability to learn. Grasha (1994) indicated that the five teaching styles blended in the classroom confirm it is an embodiment of style. The categories included Expert, Formal Authority, Personal Model, Delegator and Facilitator. The teacher who is an Expert is considered knowledgeable and informed enough to provide the students with what they need. The teacher who exhibits Formal Authority is concerned with following rules and is focused on expectations. The Personal Model teacher is hands-on and provides direct instruction through modeling. The teacher who is

a Delegator believes in autonomy and directs students to become researchers. The Facilitator is able to provide students with alternatives to achieve goals and assists students in becoming responsible. Grasha (1996) reported that teaching styles and learning styles were connected. Grasha (1996) grouped teaching styles into clusters with characteristics of learning styles. The blended processes were categorized into four clusters of teaching and learning styles with a percentage of the 761 classrooms that included expert/formal authority-dependent/participant/competitive (38%), (2) personal model/expert/formal authority-participant/dependent/competitive (22%), (3) facilitator/personal model/expert-collaborative/participative/independent (17%), and (4) delegator/facilitator/expert-independent/collaborative/participant (15%). Grasha (1996) noted that 92% of the classrooms that were analyzed reflected the four clusters of teaching styles.

According to Turner and Patrick (2004), teaching styles impact student ability to increase academic achievement unequivocally. Grasha (2002) reported that classroom behavior reflects the conduct and attitude of the teacher, such as communication and interactions among students. Exceptional characteristics are identified by extraordinary and appealing attributes. Grasha also reported that these characteristics are difficult to duplicate and sets the teachers apart from others because they perform well and better than others do. Teaching methods identify teachers and the practices they use in the classroom. The method includes categories such as captivating lecturer or dynamic speaker with excellent use of technology, fish bowl discussions, along with open discussion techniques according to Grasha. Common behaviors reflect teacher's instructional practices that clarify the style through organization, passion, and caliber.

The role of the teacher transpires into characteristics of effective teaching determined by the service provided to students. Roles were categorized as being a coach, consultant, expert, or being a resourceful teacher. Grasha continued by stating that teacher personalities reflect their individuality in the classroom. The personality of a teacher can be seen through their interests, preferences, decisions, and personal choices.

According to Grasha (2002), characteristics of attitudes wrapped up in daily activities impact teaching styles. Ai (2002) reported that encouragement from teachers as well as student attitudes impact learning. Archetypal forms of teaching determine whether the environment is teacher-centered or student-centered. Archetypal forms of teaching are the demeanor and interactions with students in a manner that establishes a relationship. Teacher metaphors reflect personal beliefs and labels used to express the style of the teacher. Grasha found that metaphors generalize how teachers and students describe instruction practices in relation to style such as...“Mother duck leading ducklings” (p. 36). Grasha claimed that although teaching styles vary, elements incorporate distinctive behaviors and characteristics between students and teachers. Tucker et al. (2005) also noted that teachers must implement styles that provide the opportunity for successful behaviors and provide a climate that define expectations with constant reminders. A report from the Education Alliance (2007) revealed that teaching styles could positively impact achievement when teachers understand how students learn by modifying their style of teaching to the students learning style.

Grasha (2002) reported that self-examination on teaching styles enables teachers to engage in better interactions in the classroom. Duffy, Warren, and Walsh (2001) discovered that teaching styles depend on the belief teachers have about authority and

support. Tucker et al. (2005) claimed that teachers should set standards to meet the expectations of the teaching elements to ensure students meet outcomes for increased academic achievement. Teaching styles should include the ability to change students and overcome outside influences that impact student achievement through the elements of self-examination. Grasha found that teachers should be aware of ideas and behaviors that are displayed in classroom. Garton et al. (1999) established that teaching and learning includes characteristics that influence teaching styles, reveal backgrounds of students, promote interactions between teachers and students, and impact development of skills and attitudes toward learning.

Grasha (2002) stated that teachers who are aware of learning styles are proactive with building relationships with students. Boers (2001) stated that a survey from teachers revealed that student communication, responsibility for learning, and preparation for class are needed for student success. Tucker et al. (2005) study revealed that teachers with high expectations were able to reach difficult students because of their beliefs in teaching styles. Teachers who use methods with high expectations spent less than 22% of their time in small group instruction. Good and Brophy (2003) also found that small group instruction related to less student engagement and whole group instruction related to increased student engagement.

Turner and Patrick (2004) found that teachers interact with higher achievers more frequently when teaching challenging material. Results also noted that teachers became easily frustrated with lower achieving students, signaling the expectations were different among students. Lane, Wehby, and Cooley (2006) found that teachers expect students to follow rules and communicate needs. Teachers also expect students to be engaged in their

learning and respect gender differences in the classroom. Student personalities and respect for gender differences are related to student achievement. A comparison study on expectations found that males scored lower than females by an average of .91 percent. Failure to meet expectations results in higher student discipline referrals, removal from the classroom, referrals to special intervention programs, and, eventually, removal from the regular school setting. High expectations from teachers affected student attitude.

Teachers should take into account that students learn in various ways and should consider modifying their teaching styles to meet student needs. This includes recognizing the gaps in teaching and learning styles. Howard et al. (2003) reported that teachers are faced with the challenge of providing teaching and learning opportunities to improve educational outcomes of learning for males. Warren and Payne (2001) discovered that common planning time to share concerns for middle school teachers impacted their ability to meet the needs of the students as well as their teaching style. Grasha (1996) found that identifying predominant teaching styles allowed teachers to reflect on who they were as a teacher and who they wanted to become. As a result, instruction is solidly based upon knowledge of teaching and learning styles.

Teacher Interactions

Dee (2006b) claimed that teachers interact with males and females differently and unknowingly communicate biased expectations that result in disproportionate ideas about how each gender affects the class environment. Duffy, Warren, and Walsh (2001) claimed that males received more attention from teachers due to redirecting inappropriate behaviors. Results from the study revealed less interaction from teachers when it comes to acceptance and intellectual stimulation, and more interaction criticizing.

Haberman (1995) found that teachers have unrealistic expectations at times because the real dynamics of the student population is different from the examples discussed in professional development seminars and traditional teacher preparation programs. Professional development alone cannot teach educators how to implement effective teaching styles in a class of diverse and contentious students. Schulte (2004) reported that teachers must develop “cultural competency” by understanding the students, their backgrounds, and learn how to genuinely care. Teachers are not taking the time to learn their students or culture, but are more likely to feed into the media and develop fear and distrust. Teachers do not have to be fans of the fads and social stigmas, but they do need to be aware of what types of activities their students engage in. Nobel, Bradford, and Francis (2000) indicated that teachers at all levels should implement teaching styles that will increase male achievement and create equitable opportunities in the classroom. Zusman, Knox, and Lieberman, (2005) claimed that males continually fall behind females because they did not conform to the perceptions of being a good student. Haberman (1995) also reported that...“no school can be better than its teachers” (p. 44). According to Boaler (2002), change can only occur if educators abolish their preconceived notions that impact male academic achievement.

Teacher Gender

Dee (2006a) reported that teachers interacted with males and females differently in the classroom, but the gender of a teacher did not affect performance. Boaler (2002) indicated that...“gender, like culture, is a response rather than a characteristic” (p 140). Friend (2006) conducted a study and found that the teacher’s gender did not have a significant impact on instructional practices. Duffy, Warren, and Walsh (2001) found that

middle school male teachers interact with males more than females one third of the instructional time. Johannesson (2004) also suggested that students did not view teacher gender as a major contributor to their achievement. Gender bias seems to be the culprit for creating the perception that male teachers knew how to deal with negative male behavior more effectively than females. Friend (2006) reported that gender bias often occurs without student and teacher knowledge. Dee maintained that males experience less positive interactions with female teachers and were classified as more disruptive than females. Female teachers found patterns among genders in relation to achievement, but individual differences among students had the most impact on achievement. Johannesson (2004) found that female teachers benefited from dealing with the total male package, rather than just curriculum. Johannesson argued that there was no evidence that male teachers did any better than female teachers in regards to administering discipline.

Conclusion

For over thirty years, gender has been the center of creating equal educational opportunities for females (Heise, 2004). According to Barker, (1997) the curriculum for males and females has been sexist beginning as early as elementary school. Females were given soft choices such as dolls and enrolling in home economic classes, and males were given tough choices such as playing with legos and enrolling in physics classes or doing metalwork. Male underachievement was a major factor for establishing single-sex schools flexibility, a contributing factor on whether or not females will continue to outperform males in areas that were uncommon in past generations. Although some feminists question the rise of single-sex schools, their popularity has been on a steady increase over several years (McGuire, 2003). Heise (2004) found that attendance

increased almost twenty percent in all male schools in a single year. According to the NASSPE (2003), supporters of single-sex education reported high test scores, increased attendance, and less discipline referrals.

Heise (2004) found that supporters of the alternative education initiative must gain an understanding of how the law and policy intersects with the single-sex concept. Educators must examine the concept carefully to ensure academic success (NASSPE, 2006.). Salomone (2003) stated that there is a long running conflict on gender equality, especially in single-sex schools. Salomone examined the dynamics of policy and educational practices in regards to gender equality. Advocates of single-sex education suggest that schools research the concept before implementation to ensure it will benefit the population of students affected by the change. Davis (2003) reported that establishing single-sex classrooms should aim to (1) improve educational achievement, (2) provide the same classes as the co-educational environment, (3) offer classes on a volunteer basis, and (4) re-evaluate single-sex program every other year. These practices can be closely monitored as schools re-evaluate single-sex education to ensure federal compliance. The NASSPE (2006) found that the goal of single-sex education is to break down gender barriers and encourage exploration of individual interests that may vary from the norm.

Davis (2003) reported that although schools have the flexibility to implement single-sex classrooms, education programs must present substantially equal opportunities that are diverse and take the students' needs into consideration. Heise (2004) found that supporters are examining how to re-establish single-sex schools without imposing...“the pre-Brown era and gendered version of an educational Jim Crow” (p. 1219). Feminists believe that single-sex schools will re-open wounds from past educational experiences.

Heise also stated that some feminists welcome the opportunity for limited separation of males and females that will consider gender bias and assurance that inferiority of women will be eliminated. Single-sex schools offer a separated learning environment for males and females where each is able to concentrate on their academics.

Heise (2004) reported that test results are indicators of how well males and females will achieve academically. However, according to Jackson (2002), test scores should not be the sole determinant. Although females generally score higher than males and math and verbal scores fluctuate, the achievement gap is apparent. According to Heise, the differences in male and female scores ignite the question of whether either sex is being shortchanged. Salomone (2000) also indicated acceptance for single-sex schools are prevailing although there continues to be an acute desire for co-education as reported by Heise. Jackson indicated that questionnaires and interviews were completed to obtain a true picture of how students view co-education and single-sex classrooms. More than 50% of males were neutral about their progress. Sadker and Zittleman (2004) stated that some supporters think the concept is a quick-fix solution to academic deficits in public schools.

Single-sex schools encourage males to take classes that are considered a typical interest of females and challenge them to explore non-traditional classes (McGuire, 2003). Males should be provided the same opportunities in an environment that embraces their needs. These opportunities will build the foundation for males to be productive citizens, while classroom practices remain essential to the educational progress (AAUW, 1992). Gilligan (2006) reported that establishing single-sex schools would reopen the doors to offer males and females equitable opportunities. Haag (2004) reported that

single-sex schools safeguard males from distractions. Heise (2004) reported that single-sex schools do not violate children's rights; instead, better attitudes towards academics are fostered and male students benefit from this alternative. Co-education schools stand firm on the beliefs that male and female differences in achievement and educational equivalence should be harmonious according to Haag. Co-education environments must be perceived as a meeting ground for challenges to learn and respect all sexes. Daly and Defty (2004) also found that low achieving males accomplished more in single-sex schools. Salomone (2000) stands on the premise that single-sex education should be a choice that is supported and examined. Newberger (1999) found that keeping males on track and focused will result in increased academic awareness and achievement. Ai (2002) reported that male achievement should be examined over time to show true outcomes of learning.

CHAPTER 3

METHODOLOGY

The purpose of this study was to investigate teaching styles and their impact on male achievement in the single-sex and co-education classrooms. Teaching styles were important factors when evaluating the opportunities for success in the classroom (Campbell & Wahl, 1998). According to Glatthorn and Jailail (2000), teachers that establish effective styles in the classroom increased opportunities to improve male achievement. Campbell and Wahl suggested that teachers examine the culture of the classroom and alter their teaching styles with the norms and expectations of the students' social and academic needs.

This study may assist teachers in identifying teaching styles that influence male achievement in single-sex and co-educational classrooms. Thomas and Ungerleider (2004) reported that single-sex education was considered an alternative to co-education in an effort to increase academic performance among males. Campbell and Wahl (1998) stated that educational reform should have considered examining teaching styles that may influence male achievement. Teachers must practice strategies that enable them to connect with males and create strong communities within the classroom (Liethwood & Riehl, 2003). This study may assist teachers with developing styles that positively impact male students and increase academic opportunities available in single-sex or co-educational classrooms. Tyre (2006a) reported that males have more discipline referrals, lower academic achievement, and a greater disinterest in school. Haberman (1995) insisted that effective teaching styles would help alleviate many of the negative experiences that males face daily, resulting in poor academic achievement.

Teaching styles in the classroom were examined to provide a greater understanding of how single-sex classrooms may increase male achievement. Individuals who benefited from this study included teachers, building administrators, district personnel, assistant superintendents and superintendents. Teacher awareness was increased and policy makers may decide to consider separate classrooms for males as an intervention for increasing academic achievement. District personnel may also consider professional development opportunities to assist teachers with fostering effective teaching styles that will increase male achievement.

This chapter includes a description of the research design, population and sample, data collection procedures and methods of data analysis. This study was conducted to answer the following questions.

Research Questions

1. Do male students in co-educational and single-sex classrooms differ in their reading achievement as measured by CRCT scores?
2. Do teachers in co-educational and single-sex classrooms differ in their teaching styles toward males?
3. Is there a relationship between teachers' teaching styles and male students' reading achievement in different classroom settings (single-sex versus co-educational)?

Research Design

This study was designed as a comparative and correlational quantitative study. Teachers from single-sex and co-educational environments and student CRCT (Criterion Referenced Competency Test) scores were compared. This study was inferential in

nature. The goal of this research was to try to make a connection between teaching styles and male students achievement. According to Sprinthall (2007), inferential statistics allows the researcher to reach conclusions that extend beyond the immediate data alone. Inferential statistics infers from the sample data what the population might think. In this study, the sample data and population were the same due to the number of teachers that specifically teach Reading courses in middle school. English Language Arts teachers were also included because they teach reading. As this study was an attempt to explain one facet of the phenomena of male achievement in single-sex classrooms, inferential statistics was employed as a tool to explain the effects of teaching styles on male achievement.

This study was appropriate for teachers because teaching styles were varied and difficult to select when examining ways to increase male academic achievement. There have been few attempts to link teaching styles to male achievement in single-sex and co-educational classrooms. For this research, teaching styles and the educational setting (co-educational versus single-sex) were the independent variables. The dependent variable was male achievement as categorized by standardized test scores using students' CRCT reading scores.

The Georgia Department of Education (2007) provides an overview of the CRCT each year. The CRCT is a required test in Georgia that assesses content areas of Reading, English/Language Arts, Mathematics, Science, and Social Studies. The test was administered in the spring to students in grades 1-8. The test measured achievement of the Georgia Performance Standards (GPS) and Georgia Quality Core Curriculum (QCC). The CRCT measured student understanding of knowledge, concepts, and skills aligned

with the GPS and QCC. Committees of Georgia educators reviewed the curriculum and contributed to the development of the assessment program.

According to the Georgia Department of Education (2007), the domains for reading included reading skills and vocabulary acquisition, literary comprehension, information and media literacy for grades four through eight. The contents and skills assessed were categorized by grade and content domain. A score interpretation guide was provided for teachers and administrators. The score guide has four sections that include an overview of key terms and test-related concepts, guidelines for interpreting scores, a snapshot and overview of each score report, and performance level descriptors for each grade and content area. The information from the CRCT reports was used to examine individual student strengths and weaknesses in relation to instruction. The report also monitors the quality of instruction for the state of Georgia.

The Georgia Department of Education (2007) reported that the scale score for each content area was derived by converting the number of correct responses on the test (the raw score) to the CRCT scale. Since the scale scores were equivalent across test forms within the same content area and grade, students obtaining the same score have demonstrated the same level of performance with respect to GPS and QCC. In both of these scoring systems, the scale score systems were constructed separately, but the values were the same for QCC and GPS content areas. The mean score, standard deviation, and error of measurements were specifically designed for each score scaling system. It was appropriate to compare scores from one year to the next for the same grade and content area. The tests must be based on the same GPS or QCC curriculum. The GPS were submitted to the State Board for final approval in September 2004. The final English and

Language Arts GPS were posted in October 2004. Both schools with single-sex classes introduced the GPS starting with English Language Arts (including Reading) during the 2005-2006 school year. All three middle schools represented in this study have CRCT scores reports based upon GPS.

The scale scores for the GPS included a range of 650 to 900. Performance levels for GPS include (1) Does Not Meet the Standard: below 800, (2) Meets the Standard: 800-849, and (3) Exceeds the Standard: at or above 850. The scale score for the QCC included a range of 150 to 450. Performance levels for QCC include (1) Does Not Meet the Standard: below 300, (2) Meets the Standard: 300-349, and (3) Exceeds the Standard: at or above 350. According to the Georgia Department of Education (2007), it was appropriate to compare results from one year to another for the same grade and content area as long as the curriculum was the same.

Reading scores were the preferred data for this study because of the increase in reading achievement gaps between males and females and the impact reading has on all other academic areas. According to Tyre et al. (2006a), females scored an estimated 10 points higher on reading achievement tests. Perie, Moran, and Tirre (2005), reported that females have performed higher than males on national reading assessments by an average of 10% over the last 25 years. The research compared male students' standardized CRCT reading test scores using an Analysis of Covariance (ANCOVA) procedure and analyzed teachers' teaching style data using an Chi Square test due to categorical nature of the teaching styles data.

The researcher gained permission to enter into three sample schools in Georgia to gather data. Data from two consecutive years, 2006 and 2007, were requested and

obtained. First year data were analyzed using an independent samples t-test to assess any differences between males in single-sex and co-education classrooms when all of them were in co-education classrooms.. The second year data were used to assess achievement differences between single-sex and co-education students. The second year data were also used to assess the relationship between student achievement and teaching styles through 2 X 5 factorial ANOVA.

Population and Sample

The sample included students from single-sex and co-educational classrooms at three middle schools in Georgia. Additionally, there was a survey sample of teachers who taught single-sex or co-education classes. The population for this study consisted of 16 teachers representing teachers who taught single-sex classes and co-educational Reading or English Language Arts classes in three middle schools. Three hundred and thirty eight CRCT reading scores were used to examine achievement difference between students in single-sex and co-education classes. After examining the scores, 169 students were tracked successfully for two consecutive years. The participants were chosen based on schools that conducted single-sex and co-education classes. Table 1 displays a description of the sample. The table shows the number of teachers who taught 6th and 7th grade single-sex and co-education classes. The total number of sampled teachers was 16 and there were 84 students in single-sex classrooms and 85 students in co-education classrooms. The researcher selected three schools from which to collect data using the Grasha Teaching Style Inventory: Version 3.0 (1994).

Table 1

Description of Teachers and Students in School Sites

School	W.M.S.	R.M.S.	F.S.M.S
Number of Teachers in Coed	3	2	8
Number of Students in Coed	23	61	84
Number of Teachers in Single-sex	2	1	0
Number of Students in Single-sex	23	61	0

The first school, W.M.S., selected by the researcher employed 46 teachers and had an enrollment of 493 students in grades six through eight. Fifty nine percent of the students at the research site were African American, 36% were Caucasian, and 5% were Hispanic, with 66% of the students receiving Free and Reduced Lunch. Two percent of the students had limited English proficiency, 1% of them were migrant students, and 15% were identified in the special education program. The second school, R.M.S., selected by the research employed 52 teachers and had an enrollment of 819 students in grades four through eight. Fifty six percent of the students at the research site were Caucasian, 24% were African American students, 15% were Hispanic, 4% Multiracial, and 1% Asian, with 71% of the students receiving Free and Reduced Lunch. Two percent of the students had limited English proficiency, 4% were migrant students, and 8% are identified in the special education program. Prior knowledge about the single-sex classrooms within this co-educational environment was the criteria used to select the schools for this study.

The third school, F.S.M.S., employed 56 teachers and had an enrollment of 820 students in grades six through eight. Seventy one percent of the students at the research

site were African American, 18% were Caucasian and 4% were Hispanic, with 57% of the students receiving Free and Reduced Lunch. One percent of the students had limited English proficiency, no students were identified as migrant, and 11% were identified in the special education program. This school was selected because it only had co-education classes. The data collected from this school was used to compare data from the two schools that had single-sex and co-education classrooms. The samples were selected from a general staffing list provided by each school. According to Gay and Airasian (2003), experience and knowledge of the sample was a good indicator for selecting purposive sampling. To determine comparability, all teachers completed a survey about teaching styles.

Instrumentation

The Grasha Teaching Styles Inventory: Version 3.0 (1994) survey was used to collect data from teachers. The Grasha survey contained 40 items that evaluated attitudes and behaviors related to five teaching style categories. The survey included questions that allowed participants to describe their teaching styles and how they related to academic achievement. The five teaching styles selected as the most common characteristics exhibited in the classroom included (1) Expert, (2) Formal Authority, (3) Personal Model, (4) Delegator, and (5) Facilitator. The Grasha Teaching Styles Inventory: Version 3.0 was developed after interviews with instructors from various disciplines, discussions with instructors about difficulties encountered in the classroom, workshops, seminars, information described in literature on teaching, and from personal experiences. This research was guided by the five teaching styles according to Grasha (2002). The five

teaching styles represented a collection of all the teaching methodologies in research conducted by Grasha.

For the purposes of this research design, the five teaching styles supported the researcher's goals of defining teaching styles and how they related to academic achievement. The researcher chose this method because it offered the participants the opportunity to identify their dominant teaching style. The survey allowed the profiles of the five teaching styles to be obtained from each participant. The survey was able to capture scores related to grade level, ranking of style, teacher gender, and academic areas. In order to develop the survey, Grasha (2002) administered the inventory to 381 faculty representing 200 public and private educational institutions. There were 275 participants in national and regional workshops conducted by Grasha. The remaining 106 teachers were randomly selected within two large educational institutions. Information on 762 classrooms across ten academic areas was included in the study. The academic areas were arts/music/theater, humanities, foreign languages, social science, applied sciences, business administration, physical/biological science, mathematics/computer science, and education. Grasha (1994) reported that the data were simplified to include the overall scores for each category. The higher the mean score, the more dominant a style was displayed in the classroom. The expert and formal authority styles were statistically reliable even though there were changes. The data allowed faculty members to be placed into the four clusters. Teachers with scores that exceeded the mean on all the primary styles in each cluster were calculated. The participants for this study taught in traditional classes.

According to Grasha (1994) ... “the differences in mean ratings on this teaching style were statistically reliable or significant as determined by a MANOVA analysis

($p < .05$). The variations in mean ratings on this teaching style were statistically reliable or significant as determined by a MANOVA analysis ($< .01$) (pp 13)”. The Newman-Keuls test was used to examine variations in mean ratings between academic areas that were statistically reliable. Each style displayed the academic areas with ... “statistically reliable variations in their mean rating and are represented by the superscript notations (all p 's $< .05$) (pp 14)”.

Grasha Teaching Style Inventory: Version 3.0 (1994) reported that the scores were computed by obtaining the sum of the ratings for each question. The styles are categorized into columns and divided by eight to obtain the numerical average rating assigned to the questions associated with teach style. Table 2 displays a distribution of questions with matching teaching style.

Table 2

Grasha Teaching Style Inventory Questions and Values

Teaching Styles	Questions	Total
Expert	1-6-11-16-21-26-31-36	8
Formal Authority	2-7-12-17-22-27-32-37	8
Personal Model	3-8-13-18-23-28-33-38	8
Facilitator	4-9-14-19-24-29-34-39	8
Delegator	5-10-15-20-25-30-35-40	8

The average rating was recorded to the nearest decimal point in each category according to Grasha. A range of low, moderate, and high scores for each style was provided based on the test norms. Each participant was given a score, style, and range when the test was completed. The higher the average score, the more participants exhibited that style in the classroom (Table 3).

Table 3

Grasha Teaching Style Inventory Scale: Version 3.0

Teaching Style Scale	Low Score	Moderate Scores	High Scores
Expert	1.0-3.2	3.3-4.8	4.9-7.0
Authority	1.0-4.0	4.1-5.4	5.5-7.0
Personal Model	1.0-4.3	4.4-5.7	5.8-7.0
Facilitator	1.0-3.7	3.8-5.3	5.4-7.0
Delegator	1.0-2.6	2.7-4.2	4.3-7.0

The survey is accessible online to the public at <http://www.longleaf.net/teachingstyle.html>.

The online version scores, measures, and computes the scores automatically after the survey is completed. The scores are computed based upon the scoring guides and the results can be viewed immediately after completion.

Procedures

This comparative and correlational quantitative study examined middle school male students' reading achievement in relation to the educational environment they were in (single-sex versus co-education classrooms) and in relation to their teachers' teaching styles. Teaching styles of teachers who taught in single-sex or co-education classrooms were analyzed. The teachers completed the Grasha Teaching Style Inventory: Version 3.0 (1994) to collect data concerning teaching styles. The surveys were administered during the first and second semesters of the 2008-2009 school year to teachers in single-sex and co-educational classrooms. The researcher collected student achievement data from CRCT reading score reports for two consecutive school years and distributed a paper copy of the survey to teachers. Reading scores were examined exclusively to ensure all data were comparable and reflected appropriate achievement from one year to the next.

The student names on the score reports were kept confidential by using a number system to identify the scores with specific student names.

The paper copy of the Grasha Teaching Style Inventory: Version 3.0 was the same as the web-based version which was used by the researcher to input results. The web-based version of the survey automatically computed the scores and the results were viewed immediately. When the surveys were distributed, the teachers were instructed to complete the questionnaires during non-instructional times at their convenience. The teachers completed the surveys on the same day the researcher delivered them to the site. The participants responded anonymously to the survey. The surveys were collected by the Counselor or Instructional Coach at each school and given to the researcher in a sealed envelope. Once the data were entered into Statistical Package for the Social Sciences (SPSS), the surveys were placed in a locked cabinet provided by the researcher. The locked cabinet was located in the office of the researcher and the researcher was the only person with access to the key to ensure confidentiality of data. Confidentiality was fulfilled by using a number system to identify teachers with the correct CRCT class score report. The survey was the preferred data collection method because it had direct questions that covered a variety of areas about teaching styles and the impact it had on male achievement. The advantage of using this survey was that the questions were developed specifically for studies that examine teaching styles.

Gay and Airasian (2003) provided a number of factors that should be considered when conducting a research study. Ethics, legal restrictions when retrieving student information and gaining cooperation from authorized personnel at the school were required to conduct research. A copy of the survey instrument is located in Appendix A.

Permission to use this national survey was granted and a copy of the approval letter is located in Appendix B. An application to conduct this study was submitted to the Institutional Review Board (IRB). An approval letter to conduct this study is located in Appendix C. Upon obtaining approval from IRB, a letter requesting access into the research sites was sent to the appropriate personnel in each school district. Copies of the letters granting permission to enter the research sites are located in Appendices D, E and F. A copy of the informed consent letter provided to each participant is located in Appendix G. This procedure was necessary in regards to ethics, legal restrictions when retrieving student information and gaining cooperation from authorized personnel at the school to conduct research.

For this study, inferential statistical analysis was used to provide a summary of teaching styles and the impact it had on male achievement in single-sex and co-educational classrooms. Student CRCT scores were examined to compare student achievement in both learning environments. To ensure privacy, the participants' names were not used; instead, a number system was used to identify teachers and individual student CRCT scores. The researcher protected the name of the research site, the school system, and all persons involved in the study. The researcher presented information and actions in a professional manner that protected all participants and representatives related to this study. Purposive sampling was selected to ensure that teachers who taught single-sex classes were included in this study.

Data Collection

According to Gay and Airasian (2003), one of the major ways to collect research data is by administering a nationally known survey. The data for this study will be

collected using the Grasha Teaching Styles Inventory: Version 3.0 (1994) and student CRCT scores for two consecutive school years. The researcher collected data from teachers over a period of 16 weeks. The Counselors or Instructional Coaches were designated by the building Administrators to administer the survey to teachers at the selected schools during non-instructional time. During the time the survey was administered, the teachers were asked to sign informed consent letters. Specific instructions for the completion of the questionnaire were attached. The format allowed for easy selection of items rated on a 5-point Likert scale consisting of Strongly Agree to Strongly Disagree. The questionnaire was developed with consideration of time and convenience. All teachers were present and the researcher was able to gain a participation rate of 100 percent. The teachers placed the completed surveys in sealed envelopes and turn them in to the Counselor or Instructional Coach. A hard copy of the surveys was hand delivered to the researcher in a sealed envelope to ensure full confidentiality and anonymity. The teacher surveys were numbered to represent each teacher participating in the study. The numbers representing each teacher were used to associate teaching styles surveys with students' data.

The survey was the preferred data collection method because it had direct questions that covered a variety of areas about teaching styles and the impact they have on male achievement. The advantage of this survey was that the questions were developed specifically for studies that examine teaching styles. As questionnaires were collected from the population, the researcher examined and reexamined the data in search of teaching styles that positively and negatively affect male achievement.

The researcher used the Grasha Teaching Styles Inventory: Version 3.0 (1994) to collect data concerning teaching styles. The survey allowed teachers to evaluate their attitudes toward teaching styles. The survey contained forty questions that probe assumptions about practices in specific classrooms. The survey allowed the teachers to take the questionnaire by responding to a five point scale for each item. The results were compared to an on-going compilation of data. The survey was administered during the first and second semesters of the school year to teachers in single-sex and co-educational classrooms. The researcher collected student achievement data from CRCT reading score reports for two consecutive school years. Reading scores were examined exclusively to ensure all data were comparable and reflected appropriate achievement from one year to the next.

Data Analysis

For this study, inferential statistics were used to compare the average performance of two groups on a single measure to see if there was a difference. For the purpose of this research the groups compared were middle school male students in single-sex classrooms and co-education classrooms to investigate if there was a significant difference in their reading achievement based on the educational setting. Each variable was coded for input into SPSS to test for significance. The students were identified by using a school identification number assigned by the district administrators. Students kept the same identification numbers throughout their middle school years. Student names or other personal identification information were not used in this study. The researcher chose this method because the school system used this method to protect student identity when reporting or using data that involved students. Teachers that participated in this study

were also assigned a number that was placed on their survey to associate the surveys with student data. The researcher collected data from the first year and analyzed it using an independent samples t-test to assess the difference between male students' reading scores at the onset of the study. The second year data were analyzed using Analysis of Covariance (ANCOVA) in which the first year data served as the covariate. In other words, the second year reading scores were adjusted based on the first year reading scores that consequently produced more accurate results.

According to Sprinthall, the t-test assessed whether the means of two groups were statistically different from each other. This analysis was appropriate whenever you compare the means of two groups. The independent t-test assumed that analyzed data were from a normal distribution. Furthermore Robinson, Funk, Halbur, and O'Ryan (2003), stated that the t-test should be applied to two independent groups, e.g. single sex-classrooms versus co-educational classrooms, and that the sample size from both groups may or may not be equal. There was the assumption that the standard deviation was approximately the same in both groups and that a 95% confidence interval for the mean difference was used for calculation. A p-value was calculated where p was the probability of a false-positive event. The alpha level of .05 was used as the criterion for failing to reject a difference as statistically significant. The significance level for this study was ($p < .05$) as this created a better than chance relationship between the variables. According to Robinson, Funk, Halbur, and O'Ryan (2003), alpha levels below .05 should be used when researchers conduct one-time studies that have serious implications. However, implications from the ($p < .05$) level of significance were explained in this study. Robinson et al. found if educational researchers were conducting small-scale studies, then

using the ($p < .05$) alpha level of determining significance was an appropriate screening device for calculating relationships.

Teachers' teaching styles were analyzed using Chi Square test because of the nature of the data (discrete variable). This procedure allowed the researcher to determine if teachers from single-sex and co-education environments differ significantly in the type of teaching styles they used. The second year reading achievement data and teaching styles data were analyzed using a 2 X 5 factorial analysis of variance (ANOVA). This procedure allowed the researcher to determine if different combinations of teaching styles and educational environments significantly differ in the reading achievement they produced for male middle school students. The following Table 4 illustrated the 2 X 5 factorial ANOVA.

Table 4

Factorial ANOVA

	Expert	Facilitator	Delegator	Personal Model	Authority
Single-sex	Reading Scores	Reading Scores	Reading Scores	Reading Scores	Reading Scores
Co-ed	Reading Scores	Reading Scores	Reading Scores	Reading Scores	Reading Scores

All statistical analyses were conducted using scaled scores. The unit of analysis was the individual students. The survey identified characteristics of each category of teaching style. In this design, the researcher tried to find whether a relationship existed between a particular teaching style and the level of male academic achievement and

whether or not that relationship was statistically significant. The teaching styles for this study were Expert, Formal Authority, Personal Model, Delegator, and Facilitator. These styles were considered to be the most common styles exhibited by teachers across the country (Grasha, 2002). Expert teaching challenged students to increase their knowledge; Formal Authority emphasized class rules and expectations whether positive or negative; Personal Model teachers displayed personal examples by guiding and modeling for students; the delegator was only interested in enabling students to work autonomously and become independent learners, and the Facilitator focused on teacher-student relationships by displaying flexibility and understanding needs. Grasha (2002) found that teaching styles impacted the learning environment emotionally. Like leaders in business and industry, teachers are managers of their environment and how teachers build relationships directly relates to their dominant teaching style. Grasha continued to report that teacher presence and encounters were critical when examining teacher-student relationships.

The Grasha Teaching Styles Inventory survey results can be viewed after entering the information on the web page <http://www.longleaf.net/teachingstyle.html>. Of the 16 surveys, 14 were completed manually and electronically by the teachers. The researcher re-entered the 14 surveys electronically and compared the results to ensure accuracy. The researcher recorded the 2 remaining surveys electronically and rechecked the data to ensure accuracy. The website calculated the results automatically. This website automatically scored the surveys and interpreted the classification of the teachers' teaching styles based upon Grasha's scale. This website generated scores and categorized teachers' answers according to the inventory used by Grasha. The survey clustered the

teaching styles into five categories and identified characteristics that exhibited specific instructional practices. The researcher gained permission to use the survey and website for the purpose of this study.

Summary

This chapter presented the research design, population and sample, data collection procedures, and the data analysis methods used to guide this study. Chapter four presents the results of the analysis of data collected from the descriptive statistical analysis. The results contributed to the factors that affect male achievement in single-sex and co-educational schools. The researcher measured the dependent variables, males' achievement scores, to the independent variable, teaching styles, in single-sex and co-educational classrooms.

CHAPTER 4

RESULTS

The purpose of this study was to examine the effects of teaching styles on male achievement in single-sex and co-educational classrooms in selected middle schools in Georgia. The researcher used the Grasha Teaching Styles Inventory to measure the teaching styles of teachers in single-sex and co-educational classrooms. Student achievement data consisted of standardized tests scores in the area of Reading. This chapter presents the data analysis and results. This study was designed to answer the following questions:

1. Do male students in co-educational and single-sex classrooms differ in their reading achievement as measured by CRCT scores?
2. Do teachers in co-educational and single-sex classrooms differ in their teaching styles toward males?
3. Is there a relationship between teachers' teaching styles and male students' reading achievement in different classroom settings (single-sex versus co-educational)?

From October 2008 through January of 2009, teachers at selected schools who taught single-sex and co-education classes were administered the Grasha Teaching Styles Inventory. Sixteen teachers were contacted to respond to the survey and all of them provided completed surveys. Therefore, the rate of return was 100 percent.

One hundred sixty nine middle school students from three different schools provided two years of reading achievement data as measured by the CRCT. Sixth grade CRCT scores were used as baseline data to assess equivalency between single-sex and

co-educational students. In 6th grade, all sampled students were in co-educational classrooms. In 7th grade, students were in single-sex and co-educational classrooms. The 7th grade data were used to analyze the difference in reading achievement between male students who were in single-sex and co-educational classrooms. The data were entered and analyzed using SPSS 16.0 statistical software.

Demographic Descriptions of Respondents

The data for analysis of teachers' demographic information were divided into two categories: teaching style and classroom type. Respondents' classroom type was classified as either single-sex or co-educational. For this research the teachers who taught single-sex classes and co-educational classes were included in this report. As shown in Table 5, the teaching styles distribution of the respondents were Expert (13.6%), Personal Model (7.1%), Facilitator (55.6%), and Formal Authority (23.7%). Table 5 also shows that, for teachers, the Expert style of teaching was the least preferred method of teaching students. Today's classrooms focus on creating a student-centered environment and Expert teaching focused on traditional teacher-centered practices. None of the teachers selected Delegator as their teaching style. Thus, only four of the five teaching styles identified by Grasha Teaching Styles Inventory appeared in the data.

Table 5

Distribution of Respondents' Teaching Styles According to Class Type

Teaching Style	SS-Class	CE-Class
Expert	2	1
Facilitator	1	4
Formal Authority	0	4
Personal Model	0	4
Delegator	0	0
Total:	3	13

Student Achievement

Student CRCT scores were retrieved for the 2006 and 2007 school year and were identified by their assignment to single-sex classrooms and co-educational classrooms. Counselors or Instructional Coaches provided the information from student CRCT reading score sheets. Scores for students in the first year were analyzed using an independent samples t-test to see if students' CRCT reading scores were significantly different. This analysis was also conducted to assess equivalency between the two groups. As Table 6 indicates, there was a significant difference in CRCT scores for the first year when students were all in co-educational classrooms in the 6th grade.

Table 6

Independent Samples T-Tests Results for 6th Grade Reading CRCT Scores

Group	N	Mean	SD	df	t	95% Mean Lower Limit	CI for Diff. Upper Limit
Single-sex	84	816.75	24.14				
				167	-4.04*	-23.72,	-8.16
Co-educational	85	832.69	26.98				

*p < 0.05

This analysis was conducted on the baseline data, 6th grade CRCT reading scores, to establish the equivalency between single-sex and co-education students. In 6th grade all the students included in the sample were in co-educational classrooms. The analysis of 6th grade CRCT scores indicated that students who went to co-educational classes in 7th grade scored significantly higher than those who went to single-sex classrooms in 7th grade on the CRCT at the end of their 6th grade year. Male students who stayed in co-educational classrooms in 7th grade scored about 16 points higher than those who moved to single-sex classrooms. In order to account for this significant difference between the two groups, their 7th grade CRCT scores were analyzed using an ANCOVA procedure in which 6th grade CRCT scores were the covariates. Table 7 presents the ANCOVA findings. ANCOVA indicated students in single-sex and co-education classrooms did not differ significantly in their Reading achievement after scores had been adjusted.

Table 7

ANCOVA Results for 7th Grade Reading CRCT Scores

Groups	Post test scores			
	Observed Mean	Adjusted Mean	SD	N
Single-sex	810.45	815.33	21.60	84
Co-education	823.23	818.40	20.09	85
Source	SS	Df	MS	F
CRCT 6 th grade	40689.95	1	40689.95	211.36
Classroom type	361.94	1	361.94	1.88
Error	31956.14	166	192.50	

Note. $R^2 = .598$ (Adj. $R^2 = .593$) $p = .172$

A Chi Square test of independence was conducted to assess whether classroom type and teaching styles were related. The data presented in the following table, Table 8, show that, at the $p < .05$ level of significance, that there is a significant relationship ($p = .000$) between teaching styles in the single-sex and co-educational classrooms. Result of the Chi Square showed that there was a relationship between teachers' teaching styles and the type of classroom in which they taught. The preferred style of teaching was Facilitator in single-sex classes; whereas the preferred teaching style in co-educational classrooms was Formal Authority.

Table 8

Chi-Square Test of Difference of Teaching Styles

	Chi-Square	df	Sig. (2-tailed)
Classroom Type	74.195	1	.000
Classroom Teaching Style	49.341	3	.000

* $p < .05$

The interaction among student achievement, classroom type, and teaching styles was analyzed using a two-way ANOVA. The two-way ANOVA did not yield a significant interaction effect; however, it yielded a primary effect for teaching styles. In other words, student achievement did not vary according to the classroom type; however, it varied according to the teaching style the teachers' used. Because of the significant main effect for teaching styles, a Tukey test was conducted as a post hoc comparison test and the Tukey test indicated that students in classrooms where the teacher had a Formal Authority teaching style scored significantly higher than students in classrooms where teachers had a Facilitator teaching style. The data in Table 9 present the results of the two-way ANOVA.

Table 9

Two-Way ANOVA on Teaching Styles and Class Type

Groups		Post test scores		
		Observed Mean	SD	N
single-sex	Expert	820.7391	22.55945	23
	Facilitator	806.5738	20.07441	61
Coed	Expert	822.7778	28.14151	9
	Personal Model	816.8333	19.80741	12
	Facilitator	820.0303	18.14608	33
	Formal Authority	829.2581	18.95076	31
Source	SS	Df	MS	F
Classroom Type	1192.834	1	1192.834	2.887
Teaching Style	3955.684	3	1318.561	3.192*
Class type*teaching style	647.676	1	647.676	1.568
Error	67337.480	163	413.13	

* P < 0.05

The matrix below in Table 10 shows the relationships between teaching styles, classroom types, and 7th grade CRCT scores. The information in Table 9 shows that those instructors whose teaching style is Formal Authority have the highest level of male achievement on the CRCT in both the co-educational and single-sex classrooms. Those in single-sex classrooms scored nine to ten points lower than those in the co-educational classrooms. Those instructors whose preferred teaching style was Facilitator had the lowest student achievement in both single-sex and co-educational classrooms. Consequently, the Facilitator style was most prevalent in single-sex classes.

Table 10

Reading Achievement Scores in Relation to Classroom Type and Teaching Style

Teaching Style	Classroom Type	Mean	Std. Deviation
Expert	Single Sex	820.739	22.559
	Co-Educational	822.778	28.142
Personal Model	Single Sex	000.000	00.000
	Co-Educational	816.833	19.807
Facilitator	Single-Sex	806.574	20.074
	Co-Educational	820.030	18.146
Formal Authority	Single-Sex	000.000	00.000
	Co-Educational	829.258	18.951

As the table indicates, Formal Authority and Personal Model teaching styles did not appear in single-sex classroom teachers' teaching styles; thus, these teaching styles in single-sex classrooms were not included in the Tukey test. A different analysis might have produced different results. For example, the Facilitator teaching style seems to produce better results in co-education classrooms as the mean difference between the single-sex and co-education students' CRCT scores was 14 points. However, this is not the case in the Expert teaching style.

Summary of Results

Question 1. Do male students in co-educational and single-sex classrooms differ in their reading achievement as measured by CRCT scores?

ANCOVA indicated that there was no significant difference between single-sex and co-educational students' reading CRCT scores.

Question 2. Do teachers in co-educational and single-sex classrooms differ in their teaching styles towards males?

Classroom type and teaching styles were significantly related as Chi Square indicated.

Questions 3. Is there a relationship between teachers' teaching styles and male students' reading achievement in different classroom settings (single-sex versus co-educational)?

Classroom type, teaching style, and student achievement did not yield a significant interaction effect according to two-way ANOVA. There was a significant main effect for teaching styles. Tukey test indicated that students in Formal Authority classrooms had significantly higher CRCT reading scores than students in Facilitator classrooms.

CHAPTER 5

CONCLUSIONS

Supporters of single-sex education are reviving the idea of separate learning environments for males and females. Thomas and Ungerleider (2004) reported that single-sex education was considered an alternative to co-education in an effort to narrow the achievement gap between males and females. This final chapter presents a summary and conclusion with implications for further research.

Summary

The results of this study revealed that there were no significant differences in CRCT reading scores of male students in single-sex and co-educational classrooms when scores were adjusted according to previous year's performance. Classroom type was not a contributing factor when examining male students' reading achievement.

Previous research on this issue showed that males scored an estimated 10 points lower on reading achievement tests than females (Tyre, 2006). Sanders (2002) supported this argument by noting that male reading levels were lower than females across all grade levels. However, according to the AAUW (1998), the success of single-sex classrooms depend on how reformers measure the impact of academic achievement. Principal Benjamin Wright (2000) reported that reading scores increased from 20% to 66% at Thurgood Marshall Elementary School after transitioning to single-sex classrooms. Defty (2004) stated that underachieving males accomplished more in single-sex classrooms.

Further results of this study indicated that there was a relationship between teaching styles and the class type. Grasha (2002) found that teachers and students' interactions influence each other in the classroom. Mead (2006) noted that several factors

affect male achievement, ranging from instructional practices to classroom settings. On the other hand, Dee (2006b) indicated that interactions with different genders communicate biased expectations that result in disproportionate ideas about how teaching style affect the classroom environment. Salomone (2003) also stated that there was a long running conflict on gender equality, especially in single-sex schools.

In this study, Formal Authority was associated with higher CRCT scores and was the preferred teaching style in co-education classrooms. According to Grasha (2002), Formal Authority teaching styles contributed to students giving teachers status based upon their role as a teacher. Formal Authority teaching styles provided students with feedback on learning and emphasized a precise way for managing students academically and behaviorally. Grasha also noted that exceptional characteristics and teacher roles were categorized with Formal Authority teaching. In this study teachers who exhibited the Formal Authority teaching styles had higher scores as opposed to teachers who exhibited the Facilitator teaching style.

Facilitator was the preferred style of teaching in single-sex classrooms. The Facilitator teaching style may not have been effective in single-sex classrooms with male students because the strategy focuses on the personal disposition of teacher-student relationships (Grasha, 2002). Howard, et. al. (2003) reported that in classrooms where the Facilitator teaching style was implemented, males had the opportunity to participate in open discussions and benefit from leniency on discipline for aggressive gestures resulting from eagerness to contribute to the lesson. According to Parker and Rennie (2002), single-sex classrooms allowed teachers to provide non-academic interactions between males in single-sex classrooms that allowed for increased teacher-student

relationships, which aligned with Facilitator teaching styles. Tucker et al. (2005) claimed that a teachers' style should set standards to meet the expectations of the teaching elements to ensure students meet outcomes for increased academic achievement which was not found in Facilitator teaching styles. Bennett (1976) found that male students who had low achievement scores typically had teachers who exhibited a Facilitator type approach to teaching.

Finally, this study showed that there was no relationship among teaching styles, male achievement as measured by CRCT scores, and the education settings. The AAUW (1998) reported that although student achievement can be gained in a single-sex environment, teaching styles were the primary factor in the education reform. Morin (2003) reported that 48% of teachers believed males learn better in co-education classes. Campbell and Wahl (1998) suggested teaching styles were an important factor when evaluating classroom success. However, Parker and Rennie (2003) found that males need co-education classes to help manage their desire to socialize and take an interest in learning. Sax (2005) stated that males must be able to live productively in co-educational environments. Poling (1996) also found that the same strategies implemented in single-sex classrooms could be implemented in co-educational classrooms. Flannery supported this viewpoint by indicating that single-sex classes may promote stereotypes such as males having behavior issues, being overly active, and disinterested in school (2006). In this study males who were taught by teachers implementing Facilitator teaching styles scored lower on the CRCT.

In this study, the Delegator teaching style was not selected. Delegator teaching styles focuses on student autonomy (Grasha, 2002). The Delegator teaching style

required students to work independently on projects rather than collaborating and working in teams, which reflect current teaching expectations. Expert teaching styles was not the preferred teaching style in either classroom type. Expert teaching styles required the teacher to have the knowledge while maintaining status as an expert among students. This type of style is opposite of the student-centered classrooms which allows for teachers to share their knowledge with a diplomatic approach.

Although the analysis indicated that there was no difference in single-sex and co-education classrooms with regards to CRCT scores, the researcher believes that approach should still be considered as an alternative. Single-sex education may be an intervention to retention, discipline, labeling, and disruptive behavior among males. Dee (2006) reported more males are labeled learning, emotional, and behavior disabled. Males also have higher suspension and retention rates resulting in greater chances of dropping out of school. The researcher stated that single-sex education should also be considered as an option for students who are at-risk for failing. Friend (2006) reported that the National Association of State Boards of Education (NASBE) viewed single-sex education as an intervention to address drop-out rates, increase grades, test scores and decrease stereotypes. The researcher believes that external factors such as parental involvement and support to increase male participation in extra-curricular activities other than athletics may decrease the chances of failing in school and getting into trouble. Perie et. al. (2005) found that only 19% of males were involved in non-sport extra-curricular activities after school. It is also the belief of the researcher that teacher training and support should also be considered as a requirement when implementing single-sex classrooms. Dee found that interactions between teachers and students affect educational outcomes. These

interactions also affected to test scores, teacher relationships, and perceptions about male abilities according to Dee. The researcher believes that in order for single-sex classrooms to be successful, teachers must have an interest in teaching specific genders while completing professional development and training on how to teach in gender specific classrooms. Schulte (2004) reported that teachers must develop “cultural competency” by understanding the student, their backgrounds, and how to genuinely care about male achievement. The researcher cautions educators who may implement single-sex classrooms as a temporary solution for increased student outcomes. The alternative approach to co-education classrooms should assist teachers in improving male achievement. Bianchi (2002) indicated that single-sex education should not be used as a quick-fix solution, but rather the driving force to increase male achievement.

Implications

From this study, the following implications have been suggested.

1. Considering the results obtained from two-way ANOVA, providing opportunities for teachers to understand his or her teaching style may be beneficial. Grasha (1996) reported that teaching and learning styles were connected. Grasha grouped teaching styles into clusters with characteristics of learning styles.
2. In addressing male student achievement, teachers’ teaching style should take precedence to type of classroom in which students are taught.

In this study, Formal Authority teaching style produced the highest student outcomes in standardized test scores in Reading. Therefore, it may be

beneficial to train teachers of male students on teaching strategies associated with Formal Authority teaching style.

Recommendations for Future Research

The following recommendations are made based on the results of this study.

1. Longevity should be considered when determining the success of single-sex classrooms. According to Campbell and Wahl (1998) empirical data were needed for a certain length of time to determine if single-sex or co-educational classrooms were the best educational option for males. The researcher examined single-sex education in one school that implemented the approach for only three years, starting out with one grade level.
2. A qualitative study in the classrooms of teachers with different teaching styles to examine their interactions with males should be considered. Examining teacher feelings about student motivation, classroom atmosphere, attendance, discipline referrals, and retention rates are some of the other factors that affect male achievement. The researcher only used standardized test scores as a measurement of achievement, but teacher attitudes about single-sex education and teaching males would add to existing literature.
3. The current study focused on reading standardized test scores. Studying other areas such as math, science, social studies, and writing to collect multiple forms of data will be beneficial. Including standardized test scores, discipline reports, classroom assessments, attendance reports, and

homework completion will provide a vivid description of the differences in male student achievement in single-sex and co-education classrooms.

Delimitations

1. The researcher limited the study to schools that have single-sex classes and co-education classes within the same school.
2. The researcher collected data only from teachers who have been employed at the selected schools.
3. Teaching styles were based upon the highest score received out of five categories ranging from 1.0 to 5.0.

Limitations

1. This study was limited with only surveying three schools.
2. The study was limited with data gathered through the use of a survey and 6th and 7th grade CRCT test scores.
3. The study was linked with schools in the state of Georgia.

This study focused on the educational growth of students and the power teachers have to affect student outcomes. Teachers are the most influential catalyst in the education arena and this study revealed that their teaching styles are important when examining student progress. In the midst of compelling research and experiences, recognizing the impact of teaching styles will require educators to be proactive in recognizing the needs of males.

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APPENDICES

APPENDIX A

Grasha Teaching Style Inventory

The following is a Grasha-Riechmann teaching style survey.
Respond to each of the items below in terms of how you teach.

Try to answer as honestly and as objectively as you can.

Resist the temptation to respond as you believe you should or ought to think or behave, or in terms of what you believe is the expected or proper thing to do.

Respond to questions below by using the following rating scale. Please indicate your response by circling the choice that reflects your ideas concerning YOUR Teaching Style:

SA = STRONGLY AGREE; A = AGREE; U= Undecided; D= DISAGREE; SD = STRONGLY DISAGREE

When teaching my class, I would most be likely to:

- | | | | | | |
|---|----|---|---|---|----|
| 1. Facts, concepts, and principles are the most important things that students should acquire. | SA | A | U | D | SD |
| 2. I set high standards for students in this class. | SA | A | U | D | SD |
| 3. What I say and do models appropriate ways for students to think about issues in the content. | SA | A | U | D | SD |
| 4. My teaching goals and methods address a variety of student learning styles. | SA | A | U | D | SD |
| 5. Students typically work on course projects alone with little supervision from me. | SA | A | U | D | SD |
| 6. Sharing my knowledge and expertise with students is very important to me. | SA | A | U | D | SD |
| 7. I give students negative feedback when their performance is unsatisfactory. | SA | A | U | D | SD |
| 8. Activities in this class encourage students to develop their own ideas about content issues. | SA | A | U | D | SD |

9.	I spend time consulting with students on how to improve their work on individual and/or group projects.	SA	A	U	D	SD
10.	Activities in this class encourage students to develop their own ideas about content issues.	SA	A	U	D	SD
11.	What I have to say about a topic is important for students to acquire a broader perspective on the issues in that area.	SA	A	U	D	SD
12.	Students would describe my standards and expectations as somewhat strict and rigid.	SA	A	U	D	SD
13.	I typically show students how and what to do in order to master course content.	SA	A	U	D	SD
14.	Small group discussions are employed to help students develop their ability to think critically.	SA	A	U	D	SD
15.	Students design one of more self-directed learning experiences.	SA	A	U	D	SD
16.	I want students to leave this course well prepared for further work in this area.	SA	A	U	D	SD
17.	It is my responsibility to define what students must learn and how they should learn it.	SA	A	U	D	SD
18.	Examples from my personal experiences often are used to illustrate points about the material.	SA	A	U	D	SD
19.	I guide students' work on course projects by asking questions, exploring options, and suggesting alternative ways to do things.	SA	A	U	D	SD
20.	Developing the ability of students to think and work independently is an important goal.	SA	A	U	D	SD
21.	Lecturing is a significant part of how I teach each of the class sessions.	SA	A	U	D	SD
22.	I provide very clear guidelines for how I want tasks completed in this course.	SA	A	U	D	SD

23.	I often show students how they can use various principles and concepts.	SA	A	U	D	SD
24.	Course activities encourage students to take initiative and responsibility for their learning.	SA	A	U	D	SD
25.	Students take responsibility for teaching part of the class sessions.	SA	A	U	D	SD
26.	My expertise is typically used to resolve disagreements about content issues.	SA	A	U	D	SD
27.	This course has very specific goals and objectives that I want to accomplish.	SA	A	U	D	SD
28.	Students receive frequent verbal and/or written comments on their performance.	SA	A	U	D	SD
29.	I solicit student advice about how and what to teach in this course.	SA	A	U	D	SD
30.	Students set their own pace for completing independent and/or group projects.	SA	A	U	D	SD
31.	Students might describe me as a "storehouse of knowledge" who dispenses the fact, principles, and concepts they need.	SA	A	U	D	SD
32.	My expectations for what I want students to do in class are clearly defined in the syllabus.	SA	A	U	D	SD
33.	Eventually, many students begin to think like me about course content.	SA	A	U	D	SD
34.	Students can make choices among activities in order to complete course requirements.	SA	A	U	D	SD
35.	My approach to teaching is similar to a manager of a work group who delegates tasks and responsibilities to subordinates.	SA	A	U	D	SD
36.	There is more material in this course than I have time available to cover it.	SA	A	U	D	SD
37.	My standards and expectations help students develop the discipline the need to learn.	SA	A	U	D	SD

38. Students might describe me as a "coach" who works closely with someone to correct problems in how they think and behave. SA A U D SD
39. I give students a lot of personal support and encouragement to do well in this course. SA A U D SD
40. I assume the role of a resource person who is available to students whenever they need help. SA A U D SD

YOUR COMMENTS PLEASE:

APPENDIX B

Soundra Bronson-Pollocks

----- Original message from "Laurie Richlin" <Laurie.Richlin@cgu.edu>: -----

Soundra-

Yes, this email can be approval to use if you receive IRB approval.

Laurie

Laurie Richlin, Ph.D.
 Director
 Preparing Future Faculty & Learning Communities Program
 Claremont Graduate University
 1263 North Dartmouth Avenue
 Claremont, CA 91711
 909.607.8978
 909.621.8270 fax
<http://www.cgu.edu/pff>

Information on new book:

Blueprint for Learning: Constructing Courses to Facilitate, Assess, and Document Learning

Information on Lilly Conferences on College & University Teaching

Is there such a thing as a civil war?

From: soundra@bellsouth.net [<mailto:soundra@bellsouth.net>]
 Sent: Monday, June 16, 2008 3:09 PM
 To: Laurie Richlin
 Subject: Re: Grasha Inventories Approval

Dr. Richlin,

Thank you for assisting me in gaining permission to use the Grasha Teaching Styles Inventory. The Chair of my committee, Dr. Yasar Bodur, has asked me to gain approval before I defend. After I complete my second defense I will be able to apply for IRB approval.

Will you allow me to use this email as confirmation that if I gain IRB approval I will be able to use the inventory in my study?

Soundra Bronson-Pollocks
 Georgia Southern University

APPENDIX C

Georgia Southern University Office of Research Services & Sponsored Programs Institutional Review Board (IRB)		
Phone: 912-478-0843		Veazey Hall 2021
Fax: 912-478-0719	IRB@GeorgiaSouthern.edu	P.O. Box 8005 Statesboro, GA 30460

To: Soundra L. Bronson-Pollocks
5650 Farmin Court
Douglasville, GA 30135

CC: Charles E. Patterson
Associate Vice President for Research

From: Office of Research Services and Sponsored Programs
Administrative Support Office for Research Oversight Committees
(IACUC/IBC/IRB)

Date: October 21, 2008

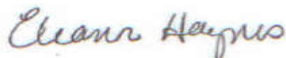
Subject: Status of Application for Approval to Utilize Human Subjects in Research

After a review of your proposed research project numbered: **H09069** and titled **"The Effects of Teaching Styles on Male Achievement in Single-Sex and Co-Educational Classrooms in Selected School Districts in Georgia"**, it appears that (1) the research subjects are at minimal risk, (2) appropriate safeguards are planned, and (3) the research activities involve only procedures which are allowable.

Therefore, as authorized in the Federal Policy for the Protection of Human Subjects, I am pleased to notify you that the Institutional Review Board has approved your proposed research.

This IRB approval is in effect for one year from the date of this letter. If at the end of that time, there have been no changes to the research protocol; you may request an extension of the approval period for an additional year. In the interim, please provide the IRB with any information concerning any significant adverse event, **whether or not it is believed to be related to the study**, within five working days of the event. In addition, if a change or modification of the approved methodology becomes necessary, you must notify the IRB Coordinator **prior** to initiating any such changes or modifications. At that time, an amended application for IRB approval may be submitted. Upon completion of your data collection, you are required to complete a *Research Study Termination* form to notify the IRB Coordinator, so your file may be closed.

Sincerely,



Eleanor Haynes
Compliance Officer

APPENDIX D



Glynn County Schools

Administrative Offices

Michael P. Bull, Ph.D.
Superintendent

September 9, 2008

Yasar Bodur, Ph.D.
Assistant Professor
Department of Teaching and Learning
Georgia Southern University
Statesboro, GA 30460

College of Graduate Studies Office:

As Superintendent of Glynn County Schools, I have given Soundra Bronson-Pollocks permission based on approval from Dr. Randall Harvey, principal of Risley Middle School, to conduct her study in our school system. I have spoken with Ms. Pollocks and understand the scope of her research and how she will collect and present her data. All information to be gathered will be done in a confidential and appropriate manner. I further understand that Ms. Pollocks research on "Teaching styles and the impact it has on male achievement in single-gender classrooms and co-educational classrooms" will begin upon approval from the Georgia Southern Institutional Review Board. At no time will Ms. Pollocks research be used in a way that would have potential risk to the study's participants. Should you have any questions, feel free to contact me at the number below.

Sincerely,

Michael P. Bull

MPB:tmt

APPENDIX E

September 22, 2008

To Whom It Concerns:

Ms. Soundra Pollocks has permission to survey teachers at Walker Middle School in order to complete her Doctoral Dissertation.

Thanks

Robert Waters, Ed.D.
Superintendent
Long County School System
P.O. Box 428
Ludowici, GA 31316
912-545-2367
Fax 912-545-2380
rwaters@long.k12.ga.us

APPENDIX F

DOUGLAS COUNTY SCHOOL SYSTEM

P.O. Box 1077- Douglasville, GA - 30133- 770-651-2000-www.douglas.k12.ga.us
Donald J. Remillard, Superintendent

February 17, 2009

To Whom It May Concern:

The research project requests submitted by Soundra Pollocks has been approved by the Douglas County School System.

Thank you,

Elaine B. Hopkins
Associate Superintendent
For Curriculum and Instruction

APPENDIX G
LETTER OF CONSENT



COLLEGE OF EDUCATION

***DEPARTMENT OF LEADERSHIP, TECHNOLOGY & HUMAN
DEVELOPMENT***

I am Soundra Bronson-Pollocks, a doctoral student at Georgia Southern University. As a part of the dissertation process, I am soliciting your participation in a research project on teaching styles.

The purpose of this research is to determine the effects of teaching styles on male achievement in single-sex and co-educational classrooms in selected schools districts in Georgia. The research will help teachers identify teaching styles that influence male achievement in single-sex and co-educational classrooms. There are no known risks associated with this research.

There are no known benefits to you that would result from your participation in this research. This investigation may help society by providing information that can help educators understand the importance of recognizing dominant teaching styles and the impact it has on male learning styles. The benefits to society also include the possibility of helping policy makers make informed decisions about single-sex and co-educational classrooms.

Your participation will include the completion of a twenty-minute survey. Every effort will be made to protect your privacy. Your name will not be used in any of the research reports. Any information received from the study will be anonymously analyzed for results.

Participants have the right to ask questions and have those questions answered. If you have questions about this study, please contact the researcher named above or the researcher's faculty advisor, whose contact information is located at the end of the informed consent. For questions concerning your rights as a research participant, contact Georgia Southern University Office of Research Services and Sponsored Programs at 912-478-0843.

You will not receive compensation for your participation in the study.

Participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time. You will not be penalized in

any way should you decide not to participate or to withdraw from this study. You must be 18 years of age or older to consent to participate in this research study. If you consent to participate in this research study and to the terms above, please sign your name and indicate the date below. You will be given a copy of this consent form to keep for your records.

Title of Project: THE EFFECTS OF TEACHING STYLES ON MALE ACHIEVEMENT IN SINGLE-SEX AND CO-EDUCATIONAL CLASSROOMS IN SELECTED SCHOOL DISTRICTS IN GEORGIA

Principal Investigator: Soundra Bronson-Pollocks – 5650 Farmin Court, Douglasville, GA 30135

(678) 838-0873 – soundra@bellsouth.net

Faculty Advisor: Dr. Yasar Bodur – PO Box 8131 Statesboro, GA 30460

(912) 478-7285 ybodur@georgiasouthern.edu

Participant Signature

Date

I, the undersigned, verify that the above informed consent procedure has been followed.

Investigator Signature

Date