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School Administrators' and Teachers' Perceptions of Single-Gender Classrooms in Coeducational Public Middle Schools within South Carolina

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School Administrators' and Teachers' Perceptions of Single-Gender Classrooms in
Coeducational Public Middle Schools within South Carolina

By
Shemmicca M. B. Moore

A Dissertation Submitted to the
Gardner-Webb University School of Education
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

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2015

Approval Page

This dissertation was submitted by Shemmicca M. B. Moore under the direction of the persons listed below. It was submitted to the Gardner-Webb University School of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Gardner-Webb University.

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Abstract

School Administrators' and Teachers' Perceptions of Single-Gender Classrooms in Coeducational Public Middle Schools within South Carolina. Moore, Shemmicca M. B. 2015: Dissertation, Gardner-Webb University, Single-gender/Middle Schools/Student Achievement/Student Behavior

The academic achievement gap between male and female students set in motion a flurry of initiatives to help address male underachievement. The amendments made to Title IX allowed single-gender education to become a viable option for addressing those gaps in achievement. After the adjustments made to Title IX, South Carolina led the nation in the implementation of single-gender classrooms. In fact, South Carolina was the only state to have an office dedicated to ensuring the successful implementation of single-gender programs.

This quantitative study examined the perceptions of school administrators and teachers concerning the effectiveness of single-gender education. The study surveyed over 100 administrators and teachers from public middle schools within South Carolina. The study sought to gather perceptual data in the area of academic progress, behavior, and attitudes of students who were assigned to single-gender classes. The amount of professional development provided to the administrators and teachers on single-gender education was also examined.

The data analysis revealed that the administrators and teachers in South Carolina perceived that single-gender education is a successful strategy in closing the achievement gap. The research showed that the administrators and teachers thought that the students perform better academically in single-gender classes, their behavior is improved, they have better attitudes in the classroom, and they are more engaged in the learning process.

This study did not reveal anything in the data that shows a negative effect of single-gender education. It supports the body of research that has shown that single-gender education is an effective strategy for all students.

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Chapter 1: Introduction

Prior to the late 19th century, single-sex education was the fabric of the American educational system (Bracey, 2007). Initially, only male students were permitted to attend school (Bracey, 2007). Male students received what is considered to be a formal education (Bracey, 2007). Their education was tailored to ensure their success in their careers outside of the home, while female students were provided a less formal education that was geared towards preparing them for a domesticated life (Bradley, 2009). Eventually, society changed its expectations for females and more opportunities became available; therefore, a more formalized style of education was offered to all students (Bracey, 2007). As the expectations changed for females, the transition from single-sex to a coeducational style of education became necessary in the early 20th century (Bradley, 2009). The ideas that a female presence would help calm the overactive male students and that financial stability would come from coeducation were key factors that led to educating boys and girls together (Bradley, 2009). It was less expensive to operate a single school than doubling the expense for additional facilities, equipment, and staff (Anafara & Mertens, 2008).

A 2002 reexamination of the Elementary and Secondary Education Act (ESEA), which developed into the No Child Left Behind Act (NCLB) by former President George Bush, led to a change in Title IX (Bradley, 2009). The adjustment to the regulation once again made single-sex education a viable option in America's educational system (Bradley, 2009). An increasing gap in both performance and achievement has school systems taking a second glance at the possibility of single-sex education (Gurian, Stevens, & Daniels, 2009). The idea that boys are academically underachieving is leading school officials to consider the effectiveness of single-sex education (Smyth,

2010).

A variety of school standards of accomplishments over the past 10 years shows a growing margin in achievement between male and female students (Clark, Flower, Walton, & Oakley, 2008). Across America, on benchmark testing, male students in every population are lagging behind their female peers (Tyre, 2006). The lack of academic achievement among males in the United States has become one of the gravest issues facing our society (Delisio, 2009). The standards show that male students are falling behind their female peers in several areas (Clark et al., 2008). National data encompassing standardized test scores, classroom grades, and drop-out indicators are showing that male students are having trouble academically and are achieving at lower levels than girls (United States Department of Education, 2004).

A study conducted at The University of Michigan revealed that the number of male students who did not like school rose 71% between 1980 and 2001 (Tyre, 2006). Eighty percent of all high school dropouts are males, while they only account for 44% of our college population (Gurian, 2005). Approximately 72% of all males students earn a high school diploma; in comparison, around 78% of females are awarded diplomas (Education Week, 2013). This is a gap of about 6.5% between the two genders, and it has remained consistent over the past decade (Education Week, 2013). A 1999 statistic showed that 8.3% of males were retained as compared to 5.2% of females (Mead, 2006). At the elementary level, male students are more likely to be retained than female students (Mead, 2006).

The 1930s marked the onset of the belief that females are better reading students (Holbrook, 1988). A standardized assessment given to fourth graders in 35 countries revealed that female students outperformed male students in literacy in every country

(Zembar & Blume, 2011). In 1996, the United States Department of Education conducted a study that revealed that an eleventh-grade male reading ability was equivalent to that of an eighth-grade female (Sullivan, 2009). According to data from the United States Department of Education, females have outscored males in reading in every area for at least the past 30 years (Sullivan, 2009). It has now become a norm that boys do not engage in the practice of reading as much as girls, and they do not read as well as girls (Sullivan, 2009). Male students account for a majority of the participants in remedial reading programs (National Center for Education Statistics [NCES], 2000). For the past few decades, girls have been maintaining higher scores in literacy; however, other data sources have shown that girls are surpassing boys in other academic subjects as well (Sadowski, 2010).

Male students are not as conscious of how their academic performance in middle and high school affects their success in higher education and on jobs (DiPrete & Buchman, 2013). Part of this mindset could be attributed to an era of time when successful jobs for men were considered to be ones that required physical strength and manual labor as opposed to excellent academic performance (DiPrete & Buchman, 2013). There was a time in history when women trailed men by a great margin in their completion of school (DiPrete & Buchman, 2013). However, today, women have not only matched men in their educational achievements, they have surpassed them by an ever-increasing margin (DiPrete & Buchman, 2013). Data indicate a male disadvantage at the high school and college levels across a variety of curriculum areas; therefore, there is a disservice in their achievement of educational qualifications (Gibb, Fergusson, & Horwood, 2008). Over the last 40 years, men have increased their undergraduate degree completion rate by 7%, a major contrast to the 22% by women (DiPrete & Buchman,

2013). In the past, males accounted for 58% of the college-going culture (Tyre, 2006). Presently, only 44% of undergraduates are males (Tyre, 2006). Women are now awarded 60% of all master's degrees and over half of doctoral and professional degrees (DiPrete & Buchman, 2013).

On an international and national level, male students tend to have more problems with discipline issues and behavioral disorders (Gurian, 2005). Boys contribute to about 80% of the school discipline problems (Gurian, 2005). Eighty to 90% of a school district's discipline referrals are assigned to boys, and medications for behavioral issues are prescribed to two-thirds of the male student population (Gurian, 2006). At the school level, they account for 85% of all discipline referrals (Costello, 2009). Most studies that examine discrepancies among gender in schools have reported that boys are sent to the office and receive greater consequences than girls (Jordan & Anil, 2009). Research shows that boys are suspended or expelled from school at a greater rate than girls (Girls and Boys, 2008). In fact, about 71% of all school suspensions are assigned to boys (Ricks, 2013).

Problem Statement

Starting as far back as 1965 when the government declared war on poverty by passing ESEA, the achievement gap has been a concern (Schugurensky, 2001). One could even argue that the educational gap between White and Black students gained political attention with the passage of ESEA (Braun, Chapman, & Vezzu, 2010). Lyndon B. Johnson signed the bill in an effort to afford all students a fair and equitable education because he believed that all students should be given the opportunity to lead a productive life (Brown-Nagin, 2004). One of the aims of ESEA was to see a decrease in the gap and to address the inequality in our educational system (Brown-Nagin, 2004). At the core of

ESEA is Title I, which provides federal funding for high-poverty districts (National Center on Time & Learning, 2013). Title I provided approximately \$14.5 billion in fiscal year 2011, along with an array of specific educational programs, and it requires standards-based accountability for the education of all children (National Center on Time & Learning, 2013). The Obama administration, as did the George W. Bush administration, has continued to make closing the achievement gap a priority and a focal point of school restructuring through NCLB (Dahlin & Cronin, 2010). NCLB, which was signed into effect in 2002, is a reauthorization of ESEA (Dahlin & Cronin, 2010).

NCLB requires schools to analyze the differences in proficiency rates between multiple socioeconomic subgroups on their state assessments (Barton & Coley, 2010). NCLB is deliberate in its standard to analyze the achievement scores and display the disparities that needed to be addressed (Barton & Coley, 2010). Local Educational Agencies (LEAs) across the country have been under so much pressure due to the guidelines of NCLB to increase their test results that they have allowed assessments to monopolize the curriculum (Kohn, 2001). The conjunction of the need to show growth on assessments and the intense focus on data have caused potentially failing schools to focus more intensely on positive test scores to decide their outcome (Lee, 2006). Those schools have increased the amount of time that they spend preparing for the test, and nontested areas receive a lot less attention (Lee, 2006). School leaders have decreased and in some instances removed permanently major components of the learning environment (Kohn, 2001). Extra courses such as art, music, recess, and high school electives are among some of the areas that have been cut (Kohn, 2001). As we progress further into the 21st century, closing the achievement gap remains at the forefront of the minds of many (Gibb et al., 2008). The need to make gains has forced educational

leaders to research other methods for decreasing the gap (Gibb et al., 2008).

Efforts to improve achievement and reduce the gap prompted many states throughout the last decade of the 20th century to adopt various reforms (Braun et al., 2010). A majority of these reforms were built upon standards-based reform and test accountability (O'Day & Smith, 1993). Most often, these reforms revealed the gap and brought attention to the discrepancy between African-American and Hispanic students and their Caucasian peers and the difference between low-economic students and those whose families are financially stable (Education Week, 2011). However, within the last decade, attention has been focused on gaps in English-language proficiency, learning disabilities, and gender (Education Week, 2011).

Purpose of Study

Educational leaders need evidence of strategies, in the form of high quality, well-conducted research, in order to make decisions with regard to selection and implementation of programs (Bradley, 2009). The purpose of this study was to investigate the perceptions that school administrators and teachers have of single-gender classrooms at the middle school level in coeducational public schools within South Carolina. This was not a study to prove or disprove the impact that single-gender classes have on student achievement or behavior. Instead, this research examined the administrators' and teachers' viewpoints on single-gender classes as an instruction methods. "Teachers are the frontline foot soldiers in any school reform. However, they are frequently draftees who have had no choice in their conscription into the latest effort to improve student achievement by reorganizing school arrangements" (Spielhagen, 2011, p. 2).

Summary

In spite of numerous attempts by public school systems during the latter part of the 20th century to address the achievement gap, we entered into the 21st century with ongoing gaps in achievement (Johnson, 2002). Since NAEP began assessing in the early 1970s, the achievement gap has always remained (Barton & Coley, 2010).

Each year when the National Assessment of Educational Progress (NAEP) releases “the nation’s report card,” the front-page news focuses on whether scores are rising or falling and whether the achievement gap is changing. Speculation is rife as to whether any change is some indication of either the success or failure of the No Child Left Behind (NCLB) Act and other efforts in our local-state-federal education system. (Barton & Coley, 2010, p. 3)

The American public has been behind finding methods to eliminate the achievement gap, and schools have experimented with a variety of things to address the issue (Education Week, 2011). Reducing class sizes, developing smaller schools, focusing on early childhood programs, focusing on teacher quality, raising academic standards, and targeting minority students for high-level courses are all reforms that local school districts have tried (Education Week, 2011). However, the process of reducing the gap has been slow to not at all (Education Week, 2011). The persistency of the gap requires us to examine other methods to ensure that all students, regardless of race or gender, are provided with a leveled playing field. Therefore, it is imperative that new strategies are researched and tried. Single-sex schooling is one of the strategies that has garnered significant attention in recent years (Gibb et al., 2008). The idea of single-sex education is gaining momentum for a variety of reasons (Bracey, 2007).

Definition of Terms

Academic achievement. For the purpose of this study, academic achievement refers to both formal and informal assessments. It includes formative as well as summative data that are taken to determine student understanding of educational content (Fry, 2009; Nattress, 2013).

Achievement gap. For the purpose of this study, achievement gap means a discrepancy in academic achievement between groups of students. Oftentimes, the achievement gap refers to the gap in performance between ethnic groups; however, it does include areas such as gender (Dahlin & Cronin, 2010).

Brain-based research. For the purpose of this study, brain-based research means the study of the human brain to identify differences between the male and female brain. The discussion of brain-based research in this study references the study of the brain to identify learning differences between male and female students (Bonomo, 2010).

Gender. For the purpose of this study, gender means the roles and attributes given to males and females within society (Phillips, 2005).

Heterogeneous education. For the purpose of this study, heterogeneous education means educating male and female students in the same environment at the same time to meet their academic needs (Anfara & Mertens, 2008).

Sex. For the purpose of this study, sex refers to the biology of males and females that cannot be altered (Phillips, 2005).

Single-gender classrooms. For the purpose of this study, single-gender classroom refers to a classroom where all of the students are one gender. Single-gender classrooms are established within a coeducational learning environment (Bracey, 2006).

Single-sex education. For the purpose of this study, single-sex education means

separating male and female students to deliver academic material. Single-sex education includes separating both classes and schools for the sole purpose of separating the genders to meet academic needs (Bracey, 2007).

Single-gender schools. For the purpose of this study single-gender schools refer to schools whose sole purpose is to meet the academic needs of a single gender, either male or female (Bracey, 2006).

Chapter 2: Literature Review

Introduction

Hubbard and Datnow (2005) asked, “Is the separation of students by gender a vehicle for improving the educational experiences of low-income and minority students” (p. 115)? As public educators, driven by the desire of politicians and parents to have more choice in the field of education, the aforementioned question is one of great importance (Hubbard & Datnow, 2005). Educational professionals, researchers, media, politicians, and parents have become increasingly interested in single-sex education for many reasons (Thompson & Ungerleider, 2004). Two of the most noted reasons are single-sex education has been connected to boosting student achievement and enhancing the overall educational experience for both boys and girls (Thompson & Ungerleider, 2004). Although there are continuous debates concerning the effectiveness of single-sex education, there is no longer anything in the constitution that prevents the implementation in public schools (Caplice, 1994).

Background

At one time, single-sex classrooms and schools were made illegal by the enactment of Title IX (Cable & Spradlin, 2008). 34 C.F. R 106-34 stated,

A recipient shall not provide any course, or carry out its programs or activities separately on the basis of sex, or require or refuse participation therein by any students on such a basis, including health, physical education, industrial, business, vocational, technical, home economics, music, and adult education courses.

(Cable & Spradlin, 2008, p. 2)

Single-sex classes within a coeducational setting were considered a concept of the past during the early years of the 21st century (Cable & Spradlin, 2008). Regardless of

documentation of biological differences in learning styles and social and emotional needs, forbiddance by the federal government prevented American public school students from being separated by gender (Cable & Spradlin, 2008). In fact, prior to 2006, single-sex classes were permitted only in physical education and sex education classes, but the gender gap in both performance and achievement caused lawmakers to rethink their position (Gurian et al., 2009).

The renewed interest in single-gender classrooms is a product of the differences in the data that show gaps between male and female learners (Cable & Spradlin, 2008). Poor and minority males account for a large percentage of America's gender gap (Whitmire & Bailey, 2010). Melissa Roderick, a Chicago researcher, has entitled this gap "genderization of race" (Whitmire & Bailey, 2010, p. 56). Basically, Roderick is saying that in order to effectively tackle the learning gaps, we must address the gender gaps (Whitmire, & Bailey, 2010). Those in support of single-sex school have declared that the current structure of school serves as a disadvantage to boys (Gibb et al., 2008). Advocates believe that separating boys and girls in the academic setting will help to increase the boys' achievements and reduce the gap between the genders (Gibb et al., 2008). The documentation of successful single-sex schools, the achievement gap between boys and girls, and legalities has sparked an interest and reestablished conversations concerning the single-sex learning environment (Cable & Spradlin, 2008).

Single-sex schools and classrooms are being established at an increasing rate due to changes in laws and the combination of cultural and technological entities (Weil, 2008). These changes extend from an ever-increasing achievement discrepancy between poor and rich students and Caucasian and minority students and the continuous push on kindergarten readiness and achievement (Weil, 2008).

History of Single-Gender Education

In analyzing single-sex education, it is important to understand the history behind Title IX. Title IX, a law that was established in 1972 stated, “No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving federal financial assistance” (Title IX, 2012, p. 3). The Civil Rights Act of 1964 ensured that minorities are treated fairly, and it is the foundation upon which Title IX was developed (Cable & Spradlin 2008). Title IX eliminated single-sex schools within public education (Bracey, 2007).

During the latter part of the 20th century, many debates were had over the constitutionality of single-sex classes and schools (Salomone, 2003). The process of adequately transforming public schools into single-sex learning communities did not come with any guidance (Hughes, 2006-2007). Due to the lack of direction, NCLB has adopted a provision under the leadership of Senators Kay Bailey Hutchison (R-TX) and Hillary Rodham-Clinton (D-NY) to provide direction to LEAs who desire to implement single-sex classes or schools (Hughes, 2006- 2007). Former President George W. Bush signed NCLB into effect in 2002 (Vanze, 2010). This law placed a higher level of accountability on schools to achieve academic proficiency for all students (Vanze, 2010). NCLB also allows for schools to have a greater level of freedom to experiment with a variety of styles of school, including single-sex classes and schools (Vanze, 2010). Senators Hillary Clinton and Kay Bailey Hutchinson stood in support of single-sex schools; therefore, in November 2006, the Department of Education provided new regulations for implementing Title IX of the Education Amendments of 1972 (Vanze, 2010). With the change in Title IX, legalities are no longer factors that prevent public

schools from establishing single-sex programs (Hughes, 2006-2007).

The gender discrepancy in performance and academic achievement has prompted public schools to take a closer look at single-sex education, a concept that was restricted to physical education and sex education classes before 2006 (Gurian et al., 2009). Parents who are dissatisfied with their children's current educational structure are given a greater variety of choice which includes single-sex schools, due to federal law changes that are connected to NCLB (Cable & Spradlin, 2008). In the press release that discussed these amended regulations, the then U.S. Secretary of Education Margaret Spellings summarized that single-gender classes can be created as long as they are closely correlated to achieving learning objectives such as increasing academic achievement for all students, providing a variety of educational opportunities for diverse groups of learners, and meeting the needs of all students (United States Department of Education, 2006).

Over the past few years, single-sex education has grown in popularity at the middle school level (Spielhagen, 2011). With the increase in popularity, individuals such as educators, legislatures, and advocates continue to research evidence that supports that it improves student outcomes such as behavior, social relations, academic performance, and emotional stability (Anfara & Mertens, 2008). In growing numbers, both private and public schools are researching the possibility of single-sex classes as an additional method to increase achievement in both male and female students (Gurian et al., 2009). This option is proving to be a method that has many excited about the possibility of creating learning environments that are advantageous to male and female learners (Gurian et al., 2009).

Case Law

Vorchheimer v. School District of Philadelphia was the first case to be brought before the courts concerning single-sex education in public school (Burgin, 2007). The case was tried before the courts because of a teenage girl's desire to attend an all-male high-performing school as opposed to the equally-as-high performing all girls' school (Imber & Geel, 2004). The court had to determine the equity in a Philadelphia school district's practice of continuing to support academies that are segregated by gender (Burgin, 2007). The Third Circuit provided approval for the academies because they were established with the understanding that they are voluntary and every student is not required to attend (Burgin, 2007). The Third Circuit Court of Appeals ruled in favor of the district and found that both schools were equal academically and functionally and the Equal Protection Clause of the fourteenth amendment was not violated by the gender stipulations (Ahranjani, 2001). Since there are essential differences between the genders, unlike race, the court ruled that the case could not be tried as race under the Equal Protection Clause (Ahranjani, 2001). Vorchheimer was unable to prove that there was gender discrimination on the part of the school district (Imber & Geel, 2004).

In May 2008, the American Civil Liberties Union (ACLU) of Kentucky filed charges in federal court, alleging that Breckinridge County Middle School's single-sex program was illegal and discriminatory (Kasic, 2008). Although it was acknowledged that no child was required to attend single-sex classes, the plaintiffs still believed that the school violated many state and federal laws, including Title IX and the Equal Educational Opportunities Act (Kasic, 2008). The federal court ruled against the ACLU (Sax, 2012). In the ruling, Judge Simpson stated, according to Webster's Third New International Dictionary, historically to segregate meant to demand a separation of race from the rest of

humanity or from a massive body of people (A.N.A, by and through her parent and next friend, S.F.A., et al. vs. Breckinridge County Board of Education, 2011). Single-sex or coeducational classes were not mandatory for the students at BCMS (A.N.A, by and through her parent and next friend, S.F.A., et al. vs. Breckinridge County Board of Education, 2011). The parents were given the opportunity to accept or decline participation in the single-sex program (A.N.A, by and through her parent and next friend, S.F.A., et al. vs. Breckinridge County Board of Education, 2011).

Superintendent Kirk Edison from Adrian, Missouri reported that the single-sex classrooms within his district have helped to decrease disruptive behavior and the students are performing better (Sax, 2012). However, despite the district's reports of success, the ACLU contacted them and informed them that if they failed to eliminate single-sex classes, legal action would be taken against them (Sax, 2012). Steven Book, an attorney representing the district, declared that although the district did not agree with ACLU's stance on the issue, they felt that it was best to dismantle the program (Sax, 2012). The letter from ACLU's attorney was the only thing needed to persuade the district to eliminate single-sex schools (Sax, 2012).

In *Williams v. McNair* in 1970, a South Carolina federal court upheld the women-only admissions policy of Winthrop College, a public liberal arts college in Rock Hill, South Carolina (Caplice, 1994). In doing so, it stressed diversity of the state's educational system as a justification for the legitimate discriminatory treatment (Caplice, 1994); that is, the provision of a single-sex academic environment in a sea of mixed-sex settings served to enhance the diversity of options for all students (Caplice, 1994).

Brain-Based Research

Research shows that the best way for students to learn is influenced by their

gender (Bonomo, 2010). The research is not a definite answer that girls learn one way and boys another (Bonomo, 2010). According to the research done on brain-based learning, all students are capable of containing and processing information; however, every student has his/her own learning modality (Armstrong, 2009). As we begin to get a better grasp on the operation of the brain, the way we used to teach is declining at an accelerated rate (Jensen, 2008). As it pertains to gender and how the brain functions, there are great differences (Bonomo, 2010).

An alternate way to view the learning process is through brain-based learning (Jensen, 2008). It does not solve all of our problems, neither is it a cure (Jensen, 2008). It is, however, a way to help us make informative decisions about teaching and learning by following a set of principles and a base of knowledge and skills upon which we can make better decisions about the learning process (Jensen, 2008). Brain-based learning should be considered to be an approach that is established from brain-based research and cognitive exploration that is used to increase classroom instruction (Connell, 2009). Engagement, strategies, and principles are three words that best describe brain-based learning (Jensen, 2008). Employing educational strategies that are developed from brain study is brain-based education (Jensen, 2008). Neurologically speaking, these approaches can help to magnify the students' abilities to obtain knowledge, using methods that are comfortable to them (Connell, 2009). Girls and boys do not have differences in what they can learn (Sax, 2005). However, the differences lie in the best way to educate them (Sax, 2005).

On average, the male brain measures at least 10 to 15% larger and heavier than that of females (Bonomo, 2010). Differences in the make-up as well as the size of the brain are different between the genders (Bonomo 2010). Research has shown through

brain mapping that the male gender has an average of six times more gray matter associated with general intelligence than women, and women have 10 times more white matter related to intelligence than men (Bonomo 2010).

In the temporal lobe, girls have stronger neural connectors than boys (Gurian & Stevens, 2004). Sharper listening skills, greater detailed memory, and a better detector of different voice sounds are directly correlated to these connectors (Gurian & Stevens, 2004). Since there are more cortical areas devoted to verbal functioning in the female brain, sensual memory, less movement, listening, tonality, mental processing, complexity in reading, and writing come easier (Gurian & Stevens, 2004). The female brain does not use as many cortical areas as males for abstract and physical-spatial functions, such as examining and manipulating objects that are mobile and understanding mechanical-related ideas due to the amount of cortical areas that are used for verbal and emotive functioning (Rich, 2000).

Males desire to move objects from one point to the next like balls, model airplanes, or bodily limbs because of their superior cortical movement in the direction of spatial-mechanical functioning (Blum, 1997). The brain activity of boys is lateral (Gurian & Stevens, 2004). There is less blood flow in the brain of males than females, but boys group segments of learning (Gurian & Stevens, 2004). Boys are more likely to fidget in class to remain awake, tap pencils on the desk, fail to take notes during class lectures, and fall asleep without completing assignments (Gurian & Stevens, 2004). Boys begin to daydream or remove themselves mentally from the room if a teacher spends a bulk of the class lecturing (Gurian & Stevens, 2004). As an oppose to a great deal of words, the male brain is better at processing symbols, abstractions, diagrams, pictures, and moving objects (Gurian, Henley, & Truman, 2001).

Brain-Based Research Implications for Teaching

On occasion, brain-based learning distinctions between males and females help to drive the creation of single-gender classrooms (Sax, 2005). The differences in cognitive, social, and emotional development; the distinction in learning styles; and academic needs assist in supporting the theory that there are biological differences between male and female learners (Cable & Spradlin, 2008). In order to benefit from all school has to offer, those who support single-sex schools believe that males and females learn differently and, therefore, should be taught in separate learning environments (Thompson & Ungerleider, 2004).

With the increase in educators who are now recognizing brain-based learning, many schools are offering single-gender classrooms as an educational option (Piechura-Couture, Heins, & Tichenor, 2011). The possibility that the study of the functioning of the brain can assist in improving teaching is just starting and the promises are limitless (Hofkins, 2008). This study can help to guide us toward practices that are brain friendly and away from those that do not address the manner in which the brain processes information (Hofkins, 2008). Grasping the complexity and possibilities of the brain function is one of the most challenging tasks for educators seeking to understand the brain function (Caine & Caine, 1990). Conventional styles of education are being challenged because of discoveries about the memory system, emotions, stress, and threat in learning (Caine & Caine, 1990). Once an individual gains complete understanding of the brain function, grading practices, testing, and organizational structures within classrooms and schools must be redefined (Caine & Caine, 1990). Students spend a great deal of time in the classroom setting at important stages of their development; therefore, when examining how the human brain processes information, it should be done in the

learning environment (Larkin & Rushton, 2001). When creating and introducing a course of study, brain-based research encourages considering the learner's developmental age (Larkin & Rushton, 2001). Brain research shows that there can be great maturation differences between any two average students (Caine & Caine, 1990); therefore, to base achievement on age is inappropriate (Caine & Caine, 1990).

While brain research does not function alone to introduce new teaching strategies, it provides specific and important reasons why concrete methods of teaching and certain classroom methods are more effective than others (Larkin & Rushton, 2001). Brain research is confirming what educators have thought for years: Children obtain more information when the subject matter is integrated with music and drama, life experiences, and emotion and real-world situations (Covino, 2002). We recall more information when our emotions and a majority of the regions of our brain are involved (Covino, 2002). Thinking that male and female students obtain knowledge differently does not justify separating students according to gender (Chadwell, 2008a). Instead, examining gender differences lends for greater reasons to utilize differentiated instruction within coed and single-gender classrooms (Chadwell, 2008a). Most researchers agree that self control is developed later in males, but they have a higher level of physical activity (Chadwell, 2008a). Females have greater verbal skills and are more empathetic than boys (Chadwell, 2008a).

Single-Gender Education and Special Education

During the early 1990s, there were many studies presented that asserted that there is an exuberant number of males and minorities assigned to special education (Piechura-Couture et al., 2011). Males are most likely to be identified as having a learning disability, and they account for the largest population in special education classes

(Galley, 2002). In fact, males have been identified as two-thirds the population of the students in the United States who receive special education services (Galley, 2002). Boys are more likely to be labeled as having Attention Deficit Disorder (ADD) than girls; and of the 1 million children who have been diagnosed with the disorder, three-fourths are males (Pollack, 1998). Gaining knowledge about the over or underrepresentation of male and female students does not have a great positive impact on the likelihood of student success or failure in school (Piechura-Couture et al., 2011). However, questioning the possibility of implementing a different format for educating students to curve male behavior and reduce the rate of special education referral is important (Piechura-Couture et al., 2011). The biological differences between males and females and the possibility of these differences manifesting themselves within the learning environment and affecting teaching practices are solid reasons for implementing single-gender education (Piechura-Couture et al., 2011).

Single-Gender Classrooms Research

The effectiveness of single-sex education has always been influenced by academic performance, either through the measurement of overall achievement or examining academic progress in a specific subject area (Smyth, 2010). Research outcomes tend to differ throughout and within various countries depending on how the data are being analyzed and the outcome purpose (Smyth, 2010). A focus on female students prompted the United States Department of Education to begin one of the first studies of single-sex education (Protheroe, 2009). In order to address the learning styles of all students and to ensure that all students achieve academically, educators and policymakers must create strategies to meet the needs of all learning styles for all students (The American Association of University Women Educational Foundation

[AAUW], 1998). We must give all public school students, both girls and boys, the chance to learn, excel, and achieve educationally (AAUW, 1998). Evidence that suggests single-sex education is superior or inferior to coeducation is nonexistent (AAUW, 1998). In some environments and with some students, single-sex classes have shown positive results (AAUW, 1998). However, it still remains to be seen by evaluators if the results that are shown in those environments can be duplicated in a coeducational environment if the same strategies are utilized in both settings (AAUW, 1998).

After reviewing studies to determine the effectiveness or ineffectiveness of single-sex education, researchers Smithers and Robinson (2006) concluded that there were no consistent findings that single-sex education is either advantageous or disadvantageous. Thus far, the research has shown small effects for single-sex classrooms or coeducational learning environments and there are limits to what research can and cannot accomplish, therefore, it seems unlikely that there will ever be enough evidence that will cause proponents or opponents to change their positions (Smithers & Robinson, 2006). The influences of gender are far outweighed by ability, social background, and race (Smithers & Robinson, 2006). Smithers and Robinson concluded that there are both excellent coeducational and single-sex schools, and they are excellent for reasons other than they are separate or coeducational learning.

According to a 3-year study entitled “Is single gender schooling viable in the public sector? Lessons from California’s pilot program,” there were a number of problems that made the single-sex schools for girls and boys ineffective (Datnow, Hubbard, & Woody, 2001). The lack of equality in the gender-oriented agenda and the focus on at-risk, low-performing students as opposed to focusing on gender inequalities and providing all students with confidence were two of the major problems (Datnow et

al., 2001). The use of coeducational space, lack of qualified educators, little planning and resources, poor recruitment in various communities, and short time lines to accomplish tasks are some of the other problems that were documented (Datnow et al., 2001). The academic successes that were notated were attributed to small classes, dedicated teachers, a strong curriculum, and equal teacher practices as opposed to the single-sex school environment (Datnow et al., 2001). The study went on to report positive findings in the single-sex study.

The researchers reported that the single-sex setting helped to delete some of the social distractions and allowed the students to concentrate more on academics, and it also opened communication about social issues such as teen pregnancy and dating (Datnow et al., 2001).

Weiss (2007) examined a literature review that was conducted on single-sex schools by the Department of Education. Weiss reported,

The American Institutes for Research (AIR) team reviewed both quantitative and qualitative literature on same-sex and coed instruction and divided the best studies into 32 separate assessment areas, ranging from achievement test scores to self-concept to long term indicators of success in college and the workplace. In 22 of the areas, same-sex schools outperformed coeducational ones. For example, most of the studies examining the academic performance of students in both types of schools show that single-sex education had positive effects on current and long-term achievement. And in studies examining the softer side of student performance, same-sex education seemed to help foster higher educational and career aspirations, particularly for girls. (p. 2)

Smithers and Robinson (2006) conducted a review on research on single-gender

schools for a Headmasters' and Headmistresses' conference. Their review encompassed results from several different countries. Australia, USA, Canada, New Zealand, Ireland, and the UK have not found significant evidence that supports the advantages of single-sex or coeducational learning environments (Smithers & Robinson, 2006). However, in America, which is dominated by coeducation classes, single-sex schools have been proven to be beneficial to disadvantaged students (Smithers & Robinson, 2006). The argument is that the success of the program in America is correlated to the parents' stance on receiving a sound education and not on a gender mix (Smithers & Robinson, 2006).

The report asserted that one of the major positive attributes of coeducational classes is that they provide a realistic environment that is open to ensuring social justices (Smithers & Robinson, 2006). Some studies show that as it pertains to academic achievement, the results are contradictory (Smithers & Robinson, 2006). There are studies that reveal coeducation is advantageous as it pertains to social development, and others found that girls enjoyed being in an integrated learning environment (Smithers & Robinson, 2006). The report was concluded with the lack of evidence proving that single-sex classrooms are or are not effective and the minimum effects of allowing the sexes to be taught together, it does not appear that proponents or opponents of separating the sexes will change their minds (Smithers & Robinson, 2006). There are representations of excellent single-sex schools as well as coeducational schools (Smithers & Robinson, 2006). It is concluded that their excellency is not embedded into them bringing the sexes together or separating them (Smithers & Robinson, 2006). Current research on single-sex education aims to reveal successes or failures in the programs based on assessments and other educational related data (Spielhagen, 2011). Usually when single-gender programs are instituted, there are other changes made such as the

school environment and curriculum (Spielhagen, 2011). Therefore, the additional changes along with implementing a new program make it difficult to determine the effectiveness of single-sex education (Spielhagen, 2011).

Fry (2009) conducted research in which he examined the feelings, attitudes, and views of educators who were involved in a single-gender learning environment in four public schools in Minnesota. Fry's study examined the perspective of regular and special education teachers as well as administrators and paraprofessionals who were assigned to either public or private school. Fry had his participants complete a 31-question survey to ascertain their perspectives on single-gender education. He found that there were benefits to students' behaviors and academic achievements when assigned to single-gender classrooms (Fry, 2009).

Nattress (2013) conducted a quantitative study similar to that of Fry's (2009). In her study, Nattress compared her results to those of Fry in an effort to affirm or dispute his findings. Nattress used a 32-question survey to obtain data from 159 middle school teachers, Grades 5 to 9, who taught in public, private, or charter schools and were assigned to single-gender classes. Nattress found in her study that her results were similar to those reported by Fry. She reported that teachers had a positive outlook towards single-gender education, especially as it pertains to student behavior and academic achievement (Nattress, 2013).

California and Single-Gender Classrooms

Before the federal government changed legislation for single-gender classrooms, Governor Pete Wilson changed legislation in 1997 and opened 12 single-gender academies in California (six for girls and six for boys) (Hubbard & Datnow, 2005). Initially, Wilson intended to open the academies for low-income minority males and a

focus on math and science for females (Hubbard & Datnow, 2005). Hubbard and Datnow (2005) conducted an ethnographic study to research the backgrounds of the students assigned to the single-sex academies to determine the effectiveness of the programs. In their research, they reported, after extensive interviews students, teachers, and district office personnel it was found that due to the social support that was provided, serious needs were able to be addressed in a single-sex school (Hubbard & Datnow, 2005). California's single-sex academies' successes were not limited to the fact that the students were separated by gender (Hubbard & Datnow, 2005). The generous donations that they received from state funding, coupled with the bonds that developed between the staff and the students through their everyday interactions, played a major role in their success (Hubbard & Datnow, 2005).

A study was conducted on a single-gender program based at a California middle school that focused on low-income students. To the delight of many community members, Single Sex Academy (SSA) was established in 1999 (Herr & Arms, 2004). The school went on to be the site of the largest single-sex program within a public school in the country (Herr & Arms, 2004). Herr and Arms (2004) sought to examine the school's reform efforts into a single-sex learning environment; however, once the study began, it was notated that many changes were occurring simultaneously. The administrators were making adjustments to testing, the curriculum, and test preparation while implementing their single-sex program. Herr and Arms remained interested in their original research question; however, they opened the study to include the effects of multiple changes on a single-sex experiment. In a summary on the study, it was found that teachers' beliefs about gender, race, and social class were displayed in their classrooms, but there was nothing in the structure of the program to prompt the teachers

to consider how their beliefs influenced their teaching (Herr & Arms, 2004).

South Carolina and Single-Gender Classrooms

In the fall of 2008, it was documented by David Chadwell (2008b), the former coordinator of single-gender programs in South Carolina, that their state was leading the nation in the implementation of single-gender classrooms. In October 2008, South Carolina had single-sex classes in 78 elementary schools, 100 middle schools, and 20 high schools (Chadwell, 2008b). Teachers, students, and parents revealed that they were pleased about single-gender education in South Carolina according to a survey that was administered in the spring of 2008 (Chadwell, 2008b). Survey results showed that there was improvement in self-confidence, independence, participation, as well as drive in more than 66% of the students who were surveyed (Chadwell, 2008b). The parents of 65% of the girls thought that the program was beneficial in comparison to 70% of the parents of the male students (Chadwell, 2008b). According to the survey data, the teachers were the most positive of the three groups. Their approval rating was 80% (Chadwell, 2008b).

Coordinators of single-sex programs in South Carolina report that the program has been beneficial for everyone (Rex & Chadwell, 2009). It has renewed educators and kept students interested in learning, and parents have become more involved in the schools (Rex & Chadwell, 2009). The fact that single-sex programs can be implemented quickly, they do not have to look identical in every school, and they are financially feasible helps to make it stand out from other educational changes (Rex & Chadwell, 2009). However, the growth and sustainability of the program have not withstood the impact of the financial crisis within the State of South Carolina (Rex & Chadwell, 2009).

Although South Carolina continuously promotes single-gender education as a

viable option for families, many areas around the state and nation are facing economic challenges that have impacted implementation (Meder, 2012). In the Pee Dee area of South Carolina, which is the area surrounding Columbia, the state capital, and statewide, the number of single-sex programs has dropped by 50% within the last 5 years (Meder, 2012). This drop is contributed to factors such as financial hardships and a lack of administrative support (Meder, 2012). The concern over the legality of separating students by gender, pending court cases in other states, and the financial strain have left many educators cautious (Meder, 2012).

There were more than 200 South Carolina schools with some sort of single-gender make-up whole school or certain grade levels separating the sexes, during the 2008-2009 school term (Meder, 2012). South Carolina reached its peak with single-sex classes in 2010, when there were 123 schools that separated students on the basis of sex to teach subjects such as math, reading, and social studies (Howard, 2012). Since that time, the number has steadily declined (Meder, 2012). A spokesman by the name of Jay W. Ragley reported that in 2012, the number of schools in South Carolina with a single-sex program was down to 69 (Howard, 2012). That number is down from 107 in the 2011-2012 school year (Howard 2012). As of 2012, there are 68 schools with some form of a single-gender structure (Meder, 2012).

The current state coordinator of single-gender education, Katie Golfus, reported that the drop is disappointing (Meder, 2012). When Golfus spoke to representatives from the schools, they said that they were disappointed to see the program leave; however, with cuts in in the budget and in staffing, there was little that they could do (Meder, 2012). Many of the rural schools did not have enough teachers to form a class for girls and another one for boys (Meder, 2012). To date, there is no conclusive evidence that the

students who are assigned to single-gender classes in South Carolina outperform their peers who are in traditional rooms (Meder, 2012).

Middle School and Single-Gender Classrooms

One of the main areas in which single-gender classrooms have gained high interest is in the middle schools. As middle school students begin to change physically and emotionally, their academics are very important (Ferrara, 2005). It is during this period in young people's lives when they experience the most change. During this time, students change physically, emotionally, and intellectually faster than they do at any other point in their lives (Ferrara, 2005). As the middle-level learners progress through these changes, their gender differences become more noticeable (Bonomo, 2010).

Researchers believe that these gender differences influence the way that students learn and attribute to the discrepancies in achievement among male and female students (Bonomo, 2010). The research results do not mean that girls and boys learn differently (Bonomo, 2010). However, there are noticeable differences between the genders and how the brain develops (Bonomo, 2010). Scholars have found that the brain, physical development, and sensory motors are not influenced by a single developmental area but by multiple differences in development (Bonomo, 2010).

The less than adequate achievement at the middle school level causes many administrators and policymakers to view the single-sex model as a way to meet the learning needs of their students (Spielhagen, 2011). Differentiation in the classroom and within staff development has become vital; however, when we consider gender differences, it helps to guide our teaching and it becomes an extension of differentiation; therefore, single-sex classes are beneficial to the middle-level learners (Chadwell, 2007). During the 3 years of middle school, students experience great changes that teachers in a

single-sex environment can help to manage and cultivate (Chadwell, 2007). They can assist the students through their changes while ensuring that the desire to learn stays in tack and academic achievement is priority (Chadwell, 2007). Teachers in a single-gender environment can help students manage that transition, keep the desire to learn alive, and support academic achievement by not only separating the genders but by tailoring their instructional style to meet the needs of their learners (Chadwell, 2007). The failure to separate students by gender without including instructional strategies that address gender differences is the greatest mistake within single-gender classrooms (Chadwell, 2007). Dividing students according to their gender without implementing instructional changes is defined as a structural change (Chadwell, 2007). At the onset of committing to teaching in a single-gender classroom, it becomes the instructor's job to employ strategies that are specific to the gender of their students (Chadwell, 2007).

The sole objective for single-sex classes is not to eliminate flirting and remove all distractions (Meder, 2012). The single-gender concept was birthed out of the ideology that the sexes process information differently and at different rates; therefore, they learn differently (Meder, 2012). Gaps in performance are most notable in middle school, and during this time students can really benefit from single gender (Meder 2012). Gender roles are explored during the adolescent years (Kommer, 2006). "Finding their way through this potential minefield is complicated and challenging for middle school students" (Kommer, 2006, p. 247).

Student Discipline

While the achievement gap has certainly played an important role in igniting the renewed interest in single-gender classrooms, student discipline has done its part in keeping the flames blazing. There were more violent incidents in middle schools during

the 2009- 2010 school term than there were in high school or elementary school (Neiman & Hill, 2011). For every 1,000 students, there were 40 incidents at the middle school level as opposed to 21 each at the high school and elementary levels (Neiman & Hill, 2011). At the middle school level, it was reported that bullying occurred once a week or daily which equates to about 39% (Neiman & Hill, 2011). At the high school and elementary levels, bullying occurred 20% of the time each (Neiman & Hill, 2011).

There is an increase of violence related to dating, sexual crimes, and bullying in our schools, and discussing educational equity will not prevent these behaviors (Bonomo, 2010). Due to the increased violence that is plaguing our schools, particularly at the middle school level, districts are researching strategies to address both discipline and academic concerns (Gurian et al., 2009). Prior to the spike in violent behaviors, teaching and learning in our schools were the focus of closing the achievement gap (Poter, 2013). If there are going to be gains made in our assessment of who is going to be successful as it relates to academic achievement, it has become a priority to examine other parts of our educational system that aid in the lack of achievement among certain populations of our students (Poter, 2013).

Gender Equality

One of the greatest discoveries in education within the past decade has been the renewed focus of single-sex education (Gurian et al., 2009). Proponents of single-sex learning environments do not typically declare it to be the only effective method in educating students; they are adamant in their desire for gender equality (Gurian et al., 2009). At the onset of the establishment of Title IX in 1972, discrimination against female students was very prevalent at all levels (United States Department of Education, 2004). Currently young women have greater access to educational opportunities that

were once withheld from them (United States Department of Education, 2004).

The concept of women and education has changed dramatically over the past 30 years (United States Department of Education, 2004). The changed mindset of many in regards to females and education sparked discussion that led to the change of Title IX. There are still some milestones that we as a country must meet in the area of education, but we have made great strides, and schools are more equitable now than they have ever been (United States Department of Education, 2004).

In March 2004, the United States Department of Education published draft regulations governing the operation of single-sex classes. These regulations held that: 1. Coeducational schools operating single-sex classes must provide a rationale for the classes, such as a historic failure of girls to enroll in certain classes offered for both sexes (for example, physics or computer science). 2. They must provide either a single-sex class for the other gender or a coeducational class in the same subject at the same schools. 3. They must conduct periodic reviews to determine if conditions still render the single-sex class necessary. (Bracey, 2006, p. 2)

Presently, schools are thought to be more equitable towards female students than they have been in decades past; however, that shift has caused a spike in the concern over the academic achievement of male students (Bracey, 2006).

Males and Single-Gender Classrooms

Students must be assigned to learning environments that meet their individual academic needs, especially if male and female students learn differently (Spielhagen, 2011). According to Irwin (2009),

the success of boys only classes depends on a number of factors: the ability of the

class, the teaching style being adopted, the commitment of the teacher, the flexibility within the timetable, the resources available, and the support of staff, school management and parents. (p. 135)

Hughes (2006-2007) pointed out that when boys are young, they utilize a lot of space. When male and female students are working together at a table, boys have a tendency to spread their belongings across the table, leaving very little room for girls (Hughes, 2006-2007). Movement is an excellent instructional strategy for both male and female students; however, boys benefit from more movement (Hughes, 2006-2007). Boys naturally move more often than girls, and it can be seen as a distraction to teachers and female students (Hughes, 2006-2007). Male students as a whole are more likely to be graphic thinkers, kinesthetic learners who are highly competitive (King, Gurian, & Stevens, 2010).

To determine the effectiveness of single-gender education in South Carolina, the State Department of Education sent out a survey to the parents, teachers, and students who were participating in the program. The data were disaggregated and later presented to the public. According to 56% of the parents who had sons participating in a single-sex program, their male child had improved behavior (Piechura-Couture et al., 2011). Thirty-three percent of the parents noted that there were no notable differences (Piechura-Couture et al., 2011). A majority of the teachers noted that the male students' behaviors improved, their willingness to participate in class improved, and their attitudes toward school improved while participating in the single-gender classroom (Piechura-Couture et al., 2011).

The reports that are being presented to the public that our boys are in a dire academic state have parents concerned about their male children (Mead, 2006). A major

driving force behind their fears is the concern that boys are trailing far behind girls in the area of academic achievement (Mead, 2006). Reports made by the media on the achievement gap, past successful experiments, and the achievement gap between the genders have renewed the interest in single-sex education (Cable & Spradlin, 2008). For these reasons, single-sex education is a favorable option for students and is a choice for a growing number of LEAs (Cable & Spradlin, 2008).

Females and Single-Gender Classrooms

When school administrators begin to examine data such as assessments, classroom grades, discipline history, and student desires, they come to realize that gender gaps play a major role in targets for school improvement plans (Gurian & Stevens, 2004). Within the data, it is usually found that girls have lower achievement in science and technology and they usually have relational issues and problems with self-esteem during adolescence (King et al., 2010). Single-sex schools were explored by educational leaders to eliminate factors that contributed to barriers in girls' academic successes and the effects of being educated in a masculine learning environment (Thompson & Ungerleider, 2004).

Educators must capitalize on female students' desires to please their teachers by using those desires to help them achieve academically in the classroom (Chadwell, 2007). Some strategies that have proven effective for working with girls are (1) take time to explain the instructions and answer their questions, (2) use project-based learning and consider their suggestions, (3) connect the lessons to real life-experiences and show the relationship between the content and real-life people, (4) support them as they work, and (5) encourage them as they hesitate (Chadwell, 2007). Middle school educators must be diligent in addressing the lack of confidence that females experience during adolescence

(Kommer, 2006). According to one study, 60% of preadolescent females had a positive self-image, while only 29% of high school girls had that same confidence (Kommer, 2006).

The Achievement Gap

The idea of separate but equal in education became an idea of the past when in 1954 the Supreme Court gave its ruling in *Brown vs. the Board of Education* (Madyun, 2011). Educators experienced many unforeseen problems when the law demanded that schools become desegregated (Madyun, 2011). After the demise of Separate but Equal, dissimilarities in culture and developmental concerns of students from varying backgrounds had to be addressed by teachers and administrators (Madyun, 2011). There were notable gaps in the academic performance between the Black and White students. These gaps were later coined the achievement gap. The achievement gap is defined as the continuous discrepancy between minority and disadvantaged students and their Caucasian peers (Poter, 2013). “Achievement gaps occur when one group of students outperforms another group and the difference in average scores for the two groups is statistically significant (that is, larger than the margin of error)” (NCES, 2011d, p. iii).

The United States’ efforts to address these concerns, which contributed to the achievement gap, can be dated back many years (Barton & Coley, 2010). The disparity in academic achievement between economically disadvantaged and African-American students from students who are from privileged backgrounds has dominated discussions and research in the area of education for approximately 40 years (Education Commission of the States [ECS], 2013). The 1980s reported great strides in closing the achievement gap, especially between African Americans and Whites (ECS, 2013). Since that time, low academic achievement among minority students continues to be an ongoing problem

within the field of education (ECS, 2013).

Following the 1954 Brown ruling, hope for the advancement of America's educational system, and in society in general, was not established until The Civil Rights Act of 1964 (Barton & Coley, 2010). When The Civil Rights Act of 1964 was passed, it increased hope for equality in education and society as a whole (Barton & Coley, 2010).

In present-day America, comprehensive schooling is offered for all students without regard to socioeconomic class, race, or ethnicity (Collopy, Bowman, & Taylor, 2012). Despite the fact that universal schooling has been offered for decades, gaps in educational achievement continue to exist between socioeconomic class and race (Collopy et al., 2012). The gap in educational achievement consistently exists between African-American and Hispanic students and their White peers as well as economically advantaged and disadvantaged students (Reardon, Greenberg, Kalogrides, Shores, & Valentino, 2012). One of the contributors to these disparities is poverty. The Census Bureau published data in 2009 that reported that 1.5 million youth younger than 18 who are living within a family unit of at least four members are living in poverty, which equates to a household with a total income of less than \$21,947 per year (Education Week, 2011). This figure encompasses at least 10% of White children and one of three African-American and Hispanic children (Education Week, 2011). A portion of American citizens are limited in their ability to engage in society and find employment, and therefore have their needs met and function at their maximum abilities because of these persistent gaps (Collopy et al., 2012).

The ongoing presence of the gap in achievement between Black and White elementary and secondary age students has in the past and continues to garner the nation's attention (Barton & Coley, 2010). Every level of education continuously

documents a gap between White and Black students (Simms, 2012). *The Black-White Achievement Gap Revisited* says, “Concerns regarding the magnitude and persistence of the achievement gap have economic, moral and political dimensions” (Braun et al., 2010, p. 5). In the executive report completed by the NAEP, it was reported that on the 2011 NAEP testing, Caucasian students had higher results in every area when compared to their African-American peers (NCES, 2011c). They scored at least 26 points greater than African-American students across the board (NCES, 2011c). On the 2011 NAEP test, more than 70% White fourth and eighth graders scored in the 75th percentile, while fewer than 8% of Black students reached that benchmark (NCES, 2011a; 2011b). On College Readiness Tests, White graduates were 77% ready in English, twice as many as their African-American peers, where only 35% of the graduating population was college ready (ACT Research and Policy, 2012). Unfortunately, this type of data is ongoing and usual when comparing the two groups (ACT Research and Policy, 2012). Data between 1970 and 1980, when national subgroup testing data became available, documented some decrease in the gap (Barton & Coley, 2010); however, since that time there have been small changes in decreasing the divide (Barton & Coley, 2010).

Closing the gap between Hispanic and White students has also been an ongoing problem (NCES, 2011d). In recent years, the number of Hispanic students in public K-12 schools has nearly doubled, while the population of White students has decreased to just over half of the students currently enrolled (Nguyen, Bibo, & Engle, 2012). Twenty-three percent of school age students are Hispanic (NCES, 2012); however, they are the most disadvantaged ethnic group (Schneider, Martinez, & Owens, 2006). There are fewer Hispanic students enrolled in advanced math courses than White students, and in advanced science courses there are fewer Hispanic students than both Black or White

students (Schneider et al., 2006). The Hispanic population has become the largest ethnic minority group in the United States (Humes, Jones, & Ramirez, 2011), yet there continues to be a significant gap in academic performance between White and Hispanic students. On the 2009 NAEP in mathematics, White students scored an average of 26 points better than Hispanic students and 24 points better in reading (Koebler, 2011). “Asian and White students start with the highest scores and grow at the fastest pace; African American and Hispanic students start with the lowest scores and grow at the slowest pace” (ACT Research and Policy, 2012, p. 2).

As the discussion continues concerning the gap between minorities and Whites, there has been a gap that has continuously grown and gone unaddressed: the gap between Caucasian and Asian students (Sieff, 2011). “Nationwide, the percentage of Asian American students scoring in the upper echelons on math exams was 17 points higher than the percentage of white students” (Sieff, 2011, para. 4). The gap in achievement between Asian-American students and Caucasian students has widened over time (Hennessey, 2013). Asian-American students continue to excel past other student subgroups, and they continue to improve (Hennessey, 2013). Over the span of the past few decades, the achievement gap that has plagued the races and has been the subject of many educational reforms has now infiltrated into the area of gender equality.

Research Questions

The overarching question addressed in this study is, “What are school administrators’ and teachers’ perceptions of single-gender Classrooms at the Middle School Level in Coeducational Public Schools within South Carolina?” My subsidiary questions are as follows:

1. What are school administrators’ and teachers’ perceptions of academic

progress in single-gender classes?

2. What are the teachers' and administrators' perceptions of the professional development that was provided before and during the implementation of the single-sex classes?
4. What are the administrators' and teachers' perceptions on classroom and school behavior among students assigned to single-sex classes?
5. What are the administrators' and teachers' attitudes toward heterogeneous learning environments and their perceptions of their students' attitudes toward single-sex classes?

Summary

Single-sex education has become one of the most popular experiments in nontraditional public school (Vanze, 2010). Individual classes, after-school programs, core programs, optional programs, and programs that are designed to fix gender inequalities and promote cultural and racial pride are all examples of attributes that are attributed to single-sex education (Cable & Spradlin, 2008). By March 2008, the United States documented at least 49 single-sex schools, a jump from the two that were documented a little over a decade earlier (Vanze, 2010). As of February 2010, there are at least 540 documented public schools that have become a completely single-sex environment or have classes that are divided by sex for instructional purposes, a drastic increase from the estimated dozen situations of single-sex instruction that were offered in 2002 (Vanze, 2010). Some believe that public school districts should take advantage of the opportunity to provide choice of single-sex classrooms or single-sex schools because it is beneficial to learners, particularly minorities and those in poverty, in that their learning-styles are more easily matched to their behaviors and ultimately their academic

performance improves (Hughes, 2006-2007).

Advocates and critics of single-sex classrooms have ongoing heated discussions concerning the legal and ethical ramifications of such an educational practice (Cable & Spradlin, 2008). The comparison of single-sex education to separating different races of people attributes to the abundance of criticism that the concept receives and it leads people to want to see greater results than those that would be required from other educational initiatives (Salomone, 2003). Proponents of this reform maintain that no inequality exists by separating the students, because they both benefit from being treated fairly, there is an increase in their academic achievement, they are freed from social distractions and the competitive nature that comes from being in a learning environment with the opposite sex (Spielhagen, 2011). However, opponents of this style maintain that while the intentions are good, they are not based on experiential data but on anecdotal reasoning (Spielhagen, 2011).

There are individuals who hold fast to the belief that looking at assessment data to determine the effectiveness of single-sex schools can be misleading, because oftentimes they are comparing private and public education (Thompson & Ungerleider, 2004). It is a heavily debated theory that achievement levels are raised by single-sex education in some instances; but when differentiation is effectively applied, examined, and assessed in the classroom, the results may be equally as pleasing (Shah & Conchar, 2009); however, it is necessary to evaluate other areas of our educational system that contribute to the lagging academic progress if we are going to make gains in our efforts to decrease the predictions of who will be successful and who will fail as it pertains to education (Poter, 2013). The reports should not focus on boys falling further behind, it should be reported that girls are improving (Mead, 2006). Data show that American male students are

producing higher scores and obtaining more academically than they ever have (Mead, 2006). However, our female students are improving their performance at a faster rate than our male students (Mead, 2006). Therefore, boys are said to be lagging behind, although they are showing academic improvement (Mead, 2006).

Efforts should be made to improve education for all children by providing students with a variety of educational options (Laster, 2004). Single-sex schools need to have evaluations to determine their effectiveness on the educational achievement of boys and girls (Laster, 2004). While coeducation may meet the needs of some learners, single-sex education may be what is needed to address the needs of other learners (Protheroe, 2009). Supporters of single-sex education provide a number of reasons that separating students by sex is more beneficial than coeducation (Anfara & Mertens, 2008). The lack of academic achievement in the middle grades is one of the major reasons that administrators and policymakers prefer the single-sex model (Anfara & Mertens, 2008). Data, observational knowledge, and beliefs that are rooted in the idea that our boys are in crisis, biological differences between the genders, the achievement gap, and environmental distractions drive proponents' thoughts about single-sex education (Anfara & Mertens, 2008).

Chapter 3: Methodology

Introduction

The purpose of this study was to investigate the perceptions school administrators and teachers have on single-gender classrooms at the middle school level in coeducational public schools within South Carolina. The researcher examined variables that address professional development, students' behaviors and attitudes, students' academic achievements, and school goals in order to gain data on the perceptions of teachers and school-level administrators towards single-gender classrooms within South Carolina. Today, in increasing numbers, public and independent schools are investigating the option of single-sex instruction to further support and improve the educational growth of boys and girls (King et al., 2010). According to Irwin (2009),

the success of boys only classes depends on a number of factors: the ability of the class, the teaching style being adopted, the commitment of the teacher, the flexibility within the timetable, the resources available, and the support of staff, school management and parents. (p. 135)

This option is proving to be an exciting alternative for improving academic performance and for creating classrooms that are more boy- and girl-friendly (King et al., 2010).

Single-sex education is not a fix for all of our nation's educational problems (Chavous, 2013); however, it has proven to be successful in some instances and should be thought of by educational leaders as a creative way to deliver quality instruction to all students (Chavous, 2013).

Participants

The researcher petitioned public school administrators and teachers who were assigned to middle schools within South Carolina and were currently involved in teaching

or implementing a single-sex learning environment to participate in the study. For the purpose of this study, the administrators and teachers were assigned to a fully gender-segregated school within South Carolina or had classes within their school that were single-sex. The State of South Carolina has a documented 1,230 K-12 schools within its 85 school districts (Meador, 2014). As of fall 2009, there were 723,143 pupils enrolled in the South Carolina public school system (Meador, 2014).

Recent data show that over 70 schools within the state are offering some form of a single-gender program (South Carolina State Department of Education, 2013). The programs exist at all three levels: elementary, middle, and high (South Carolina State Department of Education, 2013). During the 2012-2013 school term, 29, or 12%, of all middle schools within the State of South Carolina documented some type of single-sex class (South Carolina State Department of Education, 2013). All of the middle schools that have documented at least one single-sex class within their building were solicited to participate in the study. Those who expressed a willingness to participate ultimately became participants in the study. The goal of the research was to obtain an 80% response rate from those individuals agreeing to participate in the study and an 80% response rate from the qualified middle schools. If the researcher had not achieved the desired response rate, the study would have been expanded to include elementary and high schools.

Procedure

Prior to contacting teachers and administrators from schools that have a single-gender program, the researcher contacted all districts that have a single-sex program to inquire about the process for gaining permission to conduct research. Following the guidelines that have been set by each district, the researcher provided the required

documentation to conduct research. Upon receiving clearance, the researcher sent a group e-mail (Appendix A) to middle school administrators who have been identified as having a single-gender program within their building. The e-mail served three purposes: (1) to introduce the study, (2) to request permission to conduct the study in their building by obtaining teacher input, and (3) to request their participation in the study by having them complete a survey. Once agreement to participate was received, the researcher sent surveys to all administrators as well as teachers who were assigned to teach in a single-gender class within their building. The researcher allowed 7 days for completed surveys to be returned. After that time, the researcher sent reminder e-mails to all participants.

The researcher used a modified version of an instrument created by Dr. John Fry (Appendix B). In 2009, Dr. Fry conducted a solely quantitative study entitled *Single-Gender Education: Teacher's Perspective*. He surveyed both private and public school teachers in Minnesota who were assigned to K-12 single-sex classrooms. His study reported that single-sex classrooms had a positive effect on student behavior and academic achievement. His study resembles that of the researcher's in that it sought to obtain the teachers' perspectives on single-gender education at the middle school level. The differences in the two studies are the researcher's goals of gathering the perspectives of school administrators as well as teachers. Also, Fry's (2009) study included data from personnel assigned to K-12 education in both the private and public sector. The researcher limited her study to obtain data from educators assigned solely to public middle schools.

This study was conducted using a pure quantitative methodology. "Pure quantitative research relies on the collection of quantitative data (i.e., numerical data)" (Johnson & Christensen, 2008, p. 33). Objectivity is key in quantitative research

(Johnson & Christensen, 2008). It is an approach that requires the researcher to examine theories objectively by concentrating on the relationship between variables (Johnson & Christensen, 2008). The variables can be examined with tools that allow the numerical values to be analyzed using statistical methods (Johnson & Christensen, 2008).

Researchers who utilize the quantitative method attempt to remain as neutral as possible, and they strive to eliminate all biases from the study (Johnson & Christensen, 2008).

Research Questions

The overarching question addressed in this study was, “What are school administrators’ and teachers’ perceptions of single-gender classrooms at the middle school level in coeducational public schools within South Carolina?” The researcher’s subsidiary questions were as follows:

1. What are school administrators’ and teachers’ perceptions of academic progress in single-gender classes?

Rationale for Research Question 1: (1) There is some support for the premise that single-sex schooling can be helpful, especially for certain outcomes related to academic achievement and more positive academic aspirations (United States Department of Education, 2005); and (2) In general, more studies reporting the positive effects of single-sex schools on all-subject achievement test scores were found than studies reporting the positive effects of coed schools on the same outcomes (United States Department of Education, 2005).

2. What are the teachers’ and administrators’ perceptions of the professional development that was provided before and during the implementation of the single-gender classes?

Rationale for Research Question 2: (1) Implementing instructional strategies

that fail to address gender learning differences has been a major mistake in the implementation of single-gender classrooms. Separating the boys from the girls is not a change in teaching; it is a change in the makeup of the room. When a school agrees to establish a single-gender learning environment, it becomes the teachers' responsibility to educate according to gender differences (Chadwell, 2007); and (2) Teachers who participate in single-gender learning programs have stressed the need for ongoing professional development throughout the course of the school year. Teachers who received training at the beginning of the school year and intermittently throughout, still desired additional training (Caskey, 2011).

3. What are the administrators' and teachers' perceptions on classroom and school behavior among students assigned to single-gender classes?

Rationale for Research Question 3: (1) Many in the field of education typically view boys' misbehaviors as discipline problems without examining to discover their emotional needs. As opposed to sitting, male students prefer to be engaged in active learning by engaging in hands-on activities. In an instructional environment that operates opposite of their learning style, boys may disengage and participate in negative attention-seeking behaviors (Pollack, 1998); and (2) There has been ongoing concern that boys misbehave and become disruptive because they want to display their masculinity and obtain what they consider respect from their peers (Kleinfeld, 2005).

4. What are the administrators' and teachers' attitudes toward heterogeneous learning environments and their perceptions of their students' attitudes toward single-gender classes?

Rationale for Research Question 4: (1) The AAUW educational foundation reported that the attitudes of girls in single-sex classrooms have been consistently

showing that they grow greater confidence in their academic abilities (AAUW, 1998); and (2) In a single-sex learning environment, both male and female students are able to relax and show genuine interest in learning without restraint (Protheroe, 2009).

Design

The design of this study is descriptive quantitative. When conducting a descriptive study, things are measured in their original state; there is not an attempt to implement change (Hopkins, 2000). Descriptive quantitative research has had a vital function in educational research (Association for Educational Communications and Technology [AECT], 2001). It has helped to provide additional information about what occurs in schools (AECT, 2001). Descriptive research provides intelligence about conditions, situations, and events that occur in the present (Ross, 2005). The researcher chose to use a quantitative methodology because it allowed her to effectively and efficiently survey school administrators and teachers who are assigned to single-gender classrooms without the likelihood of expectation bias. “Expectation bias occurs in the absence of masking or blinding, when observers may err in measuring data towards the expected outcome” (Krishna, Maithreyi, & Surapaneni, 2010, p. 2320).

The purpose of some descriptive quantitative research is to develop statistics that are based upon various aspects of education that are of interest to policymakers and educators (AECT, 2001). The primary focus of quantitative research is to collect numerical data in an effort to explain phenomena (Creswell, 1994). In addition, a major component of the process is to eliminate elements that disrupt the purpose of the study (Creswell, 1994).

This study sought to examine administrators’ and teachers’ perceptions on academic achievement in single-gender classes, their perceptions of the level of

professional development that was provided to individuals involved in the implementation of single-gender classrooms, their perceptions of students' behaviors who were assigned to single-gender classrooms, and their perceptions of the students' attitudes in single-gender classes. The researcher used a survey to collect data on the four research questions. The researcher opted to use a survey because it afforded the opportunity to conduct research that involved a great number of people who are scattered across the state.

A survey is any activity that collects information in an organized and methodical manner about characteristics of interest from some or all units of a population using well-defined concepts, methods and procedures, and compiles such information into a useful summary form. (Fellegi, 2010, p. 1)

Integration of schools, student achievement, teaching and learning strategies, and school leadership styles are areas of education that researchers have used surveys to study (Check & Schutt, 2012). Many educational issues can be better understood through the information collected from a well-developed survey (Check & Schutt, 2012).

Instrumentation

This study is a quantitative study that used survey data to collect information on the perceptions of school administrators and teachers on single-sex classrooms. The researcher anticipated that administrators' and teachers' perceptions of single-sex classes focused on the variables of academic achievement, student behavior, professional development, and school goals would be valuable to the ongoing research of single-sex classes.

To date, there is limited research on single-sex classes within the United States.

A majority of the research done on the subject has been conducted outside of the

U.S. Most research in the U.S. has involved private girls' schools or Catholic schools. There has been less experimentation with same-sex education since the 1970s, when same-sex public schooling became prohibited for most situations by federal law. (Cable & Spradlin, 2008, p. 1)

The researcher contacted Dr. John Fry via e-mail and requested permission to utilize his survey instrument with some modifications (Appendix C). Permission was granted to the researcher with authorization to make modifications to meet the needs of the study (Appendix D). The researcher expanded the study to include responses from school administrators as well as included survey questions which addressed administrators' and teachers' perceptions of the staff development that was provided before and during the implementation of single-gender classrooms.

Dr. Fry's survey was created and tested in 2009 when he conducted research as a part of his doctoral work at Capella University. The survey is divided into five sections with a total of 32 questions. The questions were formatted to assist Dr. Fry in obtaining information in demographics, class setting, academic achievement, and student behavior. Section one of the survey was used to collect demographic information about the teachers. Both sections two and three were used to collect information about perceived benefits to single-gender education as opposed to coed classes. Sections four and five requested information to obtain the perceived academic and behavioral benefits. Sections one, two, and three of the survey used a five-point Likert scale, and sections four and five were based upon three points. Dr. Fry's goal was to create a condensed survey that could be completed in a minimum amount of time (Nattress, 2013).

Validity

One of the most important tasks a researcher has is eliminating all elements that may compromise the validity of the research (Henrichsen, Smith, & Baker (1997). The validity of a measurement method cannot be determined if the measuring instrument has never been used and the results have not been examined (Oswald & Price, 2008).

Validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are. In other words, does the research instrument allow you to hit “the bull’s eye” of your research object? Researchers generally determine validity by asking a series of questions, and will often look for the answers in the research of others. (Joppe, 2000, p. 1)

To ensure validity of his instrument, Dr. Fry obtained guidance from his mentor at Capella University (Nattress, 2013). In addition, he examined several surveys to help guide the construction of the survey used in his study (Nattress, 2013). Within his dissertation, Dr. Fry made reference to convergent evidence (Nattress, 2013). Fry (2009) said this of his study, “This study uses the convergent evidence gathered from the survey of educators regarding the positive impacts of single-gender education and observable changes in academic achievement and behavior” (p. 52).

Reliability

The quality of a measurement is directly related to its reliability (Trochim, 2006). Reliability is defined as having consistency and being repetitious as it pertains to the results (Trochim, 2006). If the same results are achieved repeatedly, an instrument is deemed reliable (Trochim, 2006). To ensure the reliability of his study, Fry utilized a Likert scale with greater than 10 survey items to allow for various types of questions (Nattress 2013). “In an effort to gauge ‘internal consistency,’ he computed Cronbach’s

alpha for Sections 2-5” (Nattress, 2013, p. 100). Internal consistency is conveyed as a numerical value between 0 and 1 (Tavakol & Dennick, 2011). It is described as the extent to which items in a test evaluate identical concepts and constructs (Tavakol & Dennick, 2011). Prior to a test being rolled out for research or examination, internal consistency should be decided (Tavakol & Dennick, 2011).

Data Collection

Prior to collecting research data, the researcher applied for research approval from the Institutional Review Board (IRB). Once permission to research was granted, the researcher contacted the South Carolina State Department of Education to obtain a list of all middle schools that were offering single-gender classes. Once the list was received, the researcher contacted the school districts that had schools that were offering single-gender classes and completed the necessary steps to be given permission to research within the district. Upon receiving district permission, the researcher contacted the school administrators to request permission for them as well as their teachers to complete a short 10-15 minute electronic survey pertaining to their perception of single-gender education.

When permission was granted, the researcher emailed the survey, which was created using a web-based survey solution, SurveyMonkey. Along with the survey, all participants received detailed instructions for completion. The participants were reassured that the information collected from the survey would be kept strictly confidential and no individual names, schools, or districts would be identified. The survey did not include a section that required the participants to reveal their name or their school’s name. The researcher waited 1 week after initially sending the survey to send a follow-up e-mail. The follow-up e-mail was sent to all individuals who had not

responded to the first request, and it contained an additional link to the survey. One week following the second attempt, a third and final e-mail was sent to all individuals who had not responded to the previous two requests. After the data were collected, the responses were prepared for statistical analysis.

Data Analysis

Once all surveys had been collected, the surveys were examined to ensure that all values added were within the given parameters. Any survey that contained errors was discarded to ensure the validity of the study. The data were then imported into IBM SPSS, statistical data analysis software. The data were managed and calculated using statistical methods employed by IBM SPSS.

The data calculated in this study were analyzed for frequencies and differences and relationships between variables. The first section of the survey was constructed to collect demographic information such as educational level, years of experience, and gender. For this section of the survey, frequency distributions were used to display the number of responses for each variable.

Questions 31 through 36 of the survey were used to answer Research Question 1: “What are school administrators’ and teachers’ perceptions of academic progress in single-gender classes?” A three-point Likert scale was used to answer the six questions in this section of the survey. For each of the five items, a frequency distribution was constructed to display the data. For each response, chi square was tabulated and analyzed. “Chi square was the appropriate statistical statistic used to determine goodness-of-fit because the data was divided into distinct categories, the data was nominal, and frequency tables were used” (Nattrass, 2013, p. 108).

Questions 21 through 24 of the survey were used to address Research Question 2:

“What are the teachers’ and administrators’ perception of the professional development that was provided before and during the implementation of single-gender classes?” The data from the second question were displayed and analyzed similarly to question four. The responses were displayed using descriptive statistics. The responses were displayed in a table that summarizes the total number of participants and the percentage of participants who chose each of the five choices (strongly disagree, disagree, no opinion, agree, and strongly agree). The means and standard deviations were computed and displayed in an additional table to allow the levels of agreement and disagreement to be revealed.

Questions 25 through 26 and 37 through 41 of the survey were used to answer Research Question 3: “What are administrators’ and teachers’ perceptions on classroom and school behavior among students assigned to single-gender classes?” Research Question 3 was addressed in an identical manner as Research Question 1. Frequency distributions and chi square were calculated.

Questions 11 through 20 and 27 through 30 of the survey were used to answer Research Question 4: “What are administrators’ and teachers’ attitudes toward heterogeneous learning environments and their perception of their students’ attitudes toward single-gender classes?” The 14 questions in these sections used a five-point Likert scale. The responses were displayed using descriptive statistics. The responses were displayed in a table that summarized the total number of participants and the percentage of participants who chose each of the five choices (strongly disagree, disagree, no opinion, agree, and strongly agree). The means and standard deviations were computed and displayed in an additional table to allow the levels of agreement and disagreement to be revealed.

Summary

This study was designed to identify the perceptions of school administrators and teachers in coeducational public schools about single-gender classrooms. The procedures that are outlined in Chapter 3 were constructed to gather data about their thoughts and attitudes towards single-gender education. The study gathered information on their thoughts and feelings concerning professional development, academic progress, student behavior, and students' attitudes towards single-sex classrooms. The data collection and analysis section outlined how the data were collected and analyzed. Chapter 4 of this study outlines the research findings.

Chapter 4: Data Collection and Analysis

Introduction

The purpose of this study was to investigate the perceptions that school administrators and teachers have on single-gender classrooms at the middle school level in coeducational public schools within South Carolina. This chapter presents data analysis to address the following research questions:

1. What are school administrators' and teachers' perceptions of academic progress in single-gender classes?
2. What are the teachers' and administrators' perceptions of the professional development that was provided before and during the implementation of the single-gender classes?
3. What are the administrators' and teachers' perceptions on classroom and school behavior among students assigned to single-gender classes?
4. What are the administrators' and teachers' attitudes toward heterogeneous learning environments and their perceptions of their students' attitudes toward single-gender classes?

The goal of this study was to gain insight into the perceptions of teachers and school administrators who are actively engaging in single-gender education. This chapter is broken down into three parts, encompassing (1) an analysis of the research demographics, (2) the results for each research question, and (3) a summary of the research data analysis.

Descriptive Data

Section one of the survey was designed to gather background information on the research participants. This section required the participants to identify their (a) current

role, (b) years as a teacher or administrator, (c) years as a teacher or administrator in a single-gender setting, (d) level of education, and (e) gender.

Table 1 describes the participants' roles at the time of the survey. Eighty-five teachers participated in the survey, which equated to 74.56% of all participants. The second highest group of survey participants was assistant principals; they made up 13.16% of all participants. The study's smallest participant group was the principals, with a participation rate 14, or 12.28%.

Table 1

Participants' Roles

Category	Frequency	Percent	Cumulative Percent
Principal	14	12.28	12.28
Assistant Principal	15	13.16	25.43
Teacher	85	74.56	100.00

Table 2 describes the school administrators' years of experience. The data in Table 1 reveal that only one of the 28 administrators has 30+ years of experience in education. The majority of the administrators fell into the categories of 1-5 years or 6-12 years of experience. Administrators with 13-20 years of experience formed the second highest group.

Table 2

Years of Administration Experience

Category	Frequency	Percent	Cumulative Percent
1-5 years	8	28.57	28.57
16-12 years	8	28.57	57.14
13-20 years	7	25.00	82.14
20-30 years	4	14.29	96.43
30+ years	1	3.57	100.00

The data in Table 3 reveal that five of the 85 teachers has 30+ years of teaching experience. The majority of the teachers have 6-12 years of teaching experience. There were 24 teachers with 1-5 years of experience, which made up the second highest category.

Table 3

Years of Teaching Experience

Category	Frequency	Percent	Cumulative Percent
1-5 years	24	28.2	28.2
6-12 years	28	32.9	61.8
13-20 years	19	22.4	84.2
20-30 years	9	10.6	94.8
30+ years	5	5.9	100.00

Table 4 describes the teachers' experiences teaching in a single-gender setting. The majority of the teachers who participated in the survey had 1-5 years of teaching experience. That group of teachers made up 64.29% of all teachers who participated in the survey. The second highest group was composed of teachers who had 6-12 years of teaching experience. This group made up 34.53% of the survey participants. The least number of participants had 13-20 years of experience and made up 1.19% of participants. None of the teachers fell into the last two categories, 20-30 years and 30+ years of experience teaching in a single-gender learning environment.

Table 4

Years of Teaching Experience in a Single-Gender Setting

Category	Frequency	Percent	Cumulative Percent
1-5 years	54	64.29	64.29
6-12 years	29	34.52	98.81
13-20 years	1	1.19	100.00
20-30 years	0	0	0
30+ years	0	0	0

Table 5 describes the number of years the teachers taught in heterogeneous learning environments. Forty-two, or 51.22%, of the teachers taught between 1-5 years at the time of the survey. Twenty-five point sixty-one percent of the survey participants had 6-12 years of heterogeneous teaching experience. Fourteen point sixty-three percent of the teachers had 13-20 years of teaching experience, followed by 6.10% of the teachers with 20-30 years of teaching experience. Only 2.44% of the teachers had 30+ years of

teaching experience.

Table 5

Years of Teaching Experience in a Heterogeneous Environment

Category	Frequency	Percent	Cumulative Percent
1-5 years	42	51.22	51.22
6-12 years	21	25.61	76.83
13-20 years	12	14.63	91.46
20-30 years	5	6.10	97.56
30+ years	2	2.44	100.00

Table 6 describes the highest level of education among the school administrators. Fifty percent of the school administrators obtained master's degrees. Thirty-seven point five percent obtained school administration certification, while 12.5% received their pinnacle degrees.

Table 6

School Administrators' Highest Degree

Category	Frequency	Percent	Cumulative Percent
Master's	12	50.0	50.0
Admin Certification	9	37.5	87.5
Ph.D./Ed.D.	13	12.5	100.00

Table 7 describes the highest degree earned by teachers who participated in the study. The majority of the teachers, or 64.29% earned at least a master's degree. Twenty-six point nineteen percent earned a bachelor's degree, and 4.76% of the teachers obtained teaching licenses attached to their bachelor's degrees. Three point fifty-seven percent of the participants earned other unspecified degrees, while pinnacle-level degrees were obtained by the least number of participants at 1.19%.

Table 7

Teachers' Highest Degree

Category	Frequency	Percent	Cumulative Percent
Bachelor's	22	26.19	26.19
Teaching License	4	4.76	30.95
Master's	54	64.29	95.24
Ph.D./Ed.D.	1	1.19	96.43
Other	3	3.57	100.00

Tables 8 and 9 display the rate of participation among the genders. Among the administrators, 45.8% of the participants were males and 54.2% were females; 22.6% of the teachers were males and 77.4% were females. While the gap between the genders at the administration level was marginal, there was a significant gap between the teachers.

Table 8

School Administrators' Gender

Category	Frequency	Percent	Cumulative Percent
Male	11	45.8	45.8
Female	13	54.2	100.00

Table 9

Teachers' Gender

Category	Frequency	Percent	Cumulative Percent
Male	19	22.6	22.6
Female	65	77.4	100.00

The above data indicate that the participants in this study were diverse in terms of educational attainment, gender, and experience in the field of education. While a majority of the administrators and teachers had 1-5 years or 6-12 years of experience in the field of education, there was representation in each category at both the administration and teacher level. Likewise, Fry (2009) documented that a majority of the teachers who participated in his study also fell into the 1-5 years or 6-12 years category. Nattress (2013) documented similar results with the majority of her participants having 1-5 years of experience.

Data Analysis

The following data were collected using SurveyMonkey and then imported into SPSS. The five-point Likert scale responses were given numerical codes starting with one and ending with five. Strongly disagree was coded as one, disagree was coded as two, no opinion was coded as three, agree was coded as four, and strongly agree was coded as five. Similarly, the three-point Likert scale responses were coded using numerical values. Heterogeneous classroom was coded as one, single-gender classroom was coded as two, and no difference was coded as three.

The first research question, “what are school administrators’ and teachers’ perceptions of academic progress in single-gender classes,” was presented using a frequency distribution table. The responses were displayed outlining the frequency for each category and the percent of participants who chose each option. In addition, a table depicting the mean and standard deviation was displayed. Chi square was used to determine if there was a significant difference in the expected and actual frequencies of responses by the participants (Fry, 2009).

The second research question, “what are the teachers’ and administrators’ perceptions of the professional development that was provided before and during the implementation of the single-gender classes,” was presented using descriptive statistics. The means and standard deviation were displayed in tabular form. Each response was displayed using a frequency distribution table to outline the levels of agreement between the responses.

The third research question, “what are the administrators’ and teachers’ perceptions on classroom and school behavior among students assigned to single-gender classes,” was displayed using a frequency distribution table. Identical to the previous two

research questions, a table depicting the mean and standard deviation was displayed to outline the levels of agreement.

The final research question, “what are the administrators’ and teachers’ attitudes toward heterogeneous learning environments and their perception of their students’ attitude toward single-gender classes,” was displayed as the previous three research questions were presented. A frequency distribution table was displayed to show the frequency of responses and a table outlining the mean and standard deviation was presented.

Results

The first research question examined school administrators’ and teachers’ perceptions of students’ academic achievements in single-gender classes. The data listed below are displayed in frequency tables, followed by the descriptive data which are also listed in tabular form. The categories in the frequency table are as follows: the heterogeneous column displays the responses for those who perceive the heterogeneous setting to be most effective, the single-gender column shows the number of participants who perceives single-gender to be most effective, and the no difference column for those who do not believe there is a substantial difference between heterogeneous and single-gender.

Table 10 displays administrators’ and teachers’ perceptions of students’ time on task.

Table 10

Administrators' and Teachers' Perceptions of Students' Time on Task

	Heterogeneous	Single-Gender	No Difference
Administrators	0 (0%)	9 (40.91%)	13 (59.09%)
Teachers	8 (9.9%)	59 (72.8%)	14 (17.3%)

The researcher solicited 29 administrator responses to this question. There were 22 respondents from the administrators which equated to a 76% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 81 responses which calculated to a 95% response rate from the teachers.

The administrators reported at 40.91% and the teachers at 72.8% that the students spend more time on task in single-gender classes. None of the administrators thought the students were on task more in heterogeneous classes; however, 59.09% reported that they had no opinion. The teachers thought that the students spent more time on task in heterogeneous classes, and 17.3 documented no reported differences.

Table 11 outlines administrators' and teachers' perceptions of students' assignment completion.

Table 11

Administrators' and Teachers' Perceptions of Students' Assignment Completion

	Heterogeneous	Single-Gender	No Difference
Administrators	0 (0%)	9 (40.91%)	13 (59.09%)
Teachers	8 (9.9%)	43 (53.1%)	30 (37%)

The researcher solicited 29 administrator responses to this question. There were 22 respondents from the administrators which equated to a 76% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 81 responses which calculated to a 95% response rate from the teachers.

The administrators (40.91%) and 53.1% of the teachers believed that the students complete assignments at a higher rate in single-gender classes. None of the administrators and only 9.9% of the teachers believed that the students completed assignments at a higher rate in heterogeneous classes. Fifty nine point zero nine percent of the administrators and 37% of the teachers reported that they did not see a difference.

Table 12 outlines administrators' and teachers' perceptions of the setting in which the students have the highest grade point average.

Table 12

Administrators' and Teachers' Perceptions of the Setting in which the Students Obtained the Highest GPA

	Heterogeneous	Single-gender	No Difference
Administrators	0 (0%)	9 (40.91%)	13 (59.09%)
Teachers	4 (4.9%)	56 (69.1%)	12 (25.9%)

The researcher solicited 29 responses to this question. There were 22 respondents from the administrators which equated to a 76% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 72 responses which calculated to an 85% response rate from the teachers.

According to the responses, 40.91% of the administrators and 69.1% of the teachers reported that the students obtained higher GPAs in single-gender classes. A small percentage, 4.9%, of the teachers perceived that higher GPAs were earned in heterogeneous classes; 59.09% of the administrators and 25.9% of the teachers indicated that they did not notice a difference.

Table 13 outlines administrators' and teachers' perceptions of the setting in which the students obtained the highest test scores.

Table 13

Administrators' and Teachers' Perceptions of the Setting in which the Students Obtained the Highest Test Scores

	Heterogeneous	Single-Gender	No Difference
Administrators	0 (0%)	9 (40.91%)	13 (59.09%)
Teachers	5 (6.2%)	55 (67.9%)	21 (25.9%)

The researcher solicited 29 administrator responses to this question. There were 22 respondents from the administrators which equated to a 76% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 81 responses which calculated to a 95% response rate from the teachers.

The data revealed that 40.91% of the administrators and 67.9% of the teachers perceived that the students earned higher grades in single-gender classes. None of the administrators and 6.2% of the teachers thought that the students earned higher grades in the heterogeneous class setting. The administrators, 59%, and 25.9% of the teachers reported that there was no noticeable difference between the two settings.

Table 14 outlines administrators' and teachers' perceptions of the setting in which female students participated the most.

Table 14

Administrators' and Teachers' Perceptions of the Setting in which the Females Participated the Most

	Heterogeneous	Single-Gender	No Difference
Administrators	1 (4.55%)	13 (59.09%)	8 (36.36%)
Teachers	5 (6.2%)	67 (82.7)	9 (11.1%)

The researcher solicited 29 administrator responses to this question. There were 22 respondents from the administrators which equated to a 76% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 81 responses which calculated to a 95% response rate from the teachers.

The administrators responded at 59.9% and 82.7% of the teachers perceived that the female students participated more in single-gender classrooms. Four point fifty-five percent of the administrators and 6.2% of the teachers indicated that the female students participated more in heterogeneous classrooms. Thirty-six point thirty-six percent of the administrators and 6.2% of the teachers indicated that there were no noticeable differences in the female students' levels of participation.

Table 15 outlines administrators' and teachers' perceptions of the setting in which the male students participate the most.

Table 15

Administrators' and Teachers' Perceptions of the Setting in which the Males Participated the Most

	Heterogeneous	Single-gender	No Difference
Administrators	0 (0%)	15 (68.18%)	7 (31.82%)
Teachers	9 (11.1%)	56 (69.1%)	16 (19.8%)

The researcher solicited 29 administrator responses to this question. There were 22 respondents from the administrators which equated to a 76% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 81 responses which calculated to a 95% response rate from the teachers.

Sixty-eight point eighteen percent of the administrators and 69.1% of the teachers perceived that male students participate more in single-gender classes. No administrators and 11.1% of the teachers believed that males participate more in heterogeneous classes. Thirty-one point eighty-two percent of the administrators and 19.8% of the teachers reported that there were no noticeable differences.

Table 16 provides descriptors of the administrators' and teachers' perceptions concerning students' academic achievements. The categories are labeled N which outlines the number of participants who answered a specific question, mean is the average response for each item, standard deviation describes how spread out the data are as they relate to the mean, the minimum is the lowest value that the participants can select, and the maximum is the highest value. Item 31 represents the setting in which there is an increase in the students' time on task, item 32 represents the setting in which

there is an increase in assignment completion, item 33 represents the setting in which there is an increase in the students' GPAs, item 34 represents the setting in which there is an increase in the students' test scores, item 35 represents the setting in which there is more female participation, and item 36 represents the setting in which there is more participation by males.

Table 16

Descriptive Data of Administrators' and Teachers' Perceptions

	N	Mean	Std. Deviation	Minimum	Maximum
Item 31	103	2.18	.556	1	3
Item 32	103	2.34	.619	1	3
Item 33	103	2.29	.536	1	3
Item 34	103	2.28	.550	1	3
Item 35	103	2.11	.463	1	3
Item 36	103	2.14	.543	1	3

Item 32, “in which setting have you noticed an increase in assignment completion,” showed the highest mean score of 2.29, which correlates to the single-gender setting. “In which setting have you noticed an increase in students' test scores” followed closely with a mean score of 2.28. The score of 2.28 also correlates to single-gender. “In which setting have you noticed more participation by females,” item 35, showed the lowest mean score of 2.11. As did the others, this mean score related to single-gender as well.

Tables 17, 18, and 19 display data for chi square, the differences between the

expected and actual values. The expected value is defined as the percentage of participants the researcher hypothesized would select a specific category. Fry (2009) and Nattress (2013) calculated chi square to determine the goodness of fit, the determination of how well their data compare to how they hypothesized their participants would respond.

Table 17

Chi Square Data with an Expected Value of 34, 34, and 34

	Time on Task	Assignment Completion	Increase GPA	Increase Test Scores	Increase Female Participation	Increase Male Participation
Chi-Square	54.777 ^a	31.476 ^a	54.194 ^a	50.699 ^a	92.874 ^a	61.592 ^a
Df	2	2	2	2	2	2
Asymp. Sig	.000	.000	.000	.000	.000	.000

Table 18

Chi Square Data with an Expected Value of 25, 50, and 25

	Time on Task	Assignment Completion	Increase GPA	Increase Test Scores	Increase Female Participation	Increase Male Participation
Chi-Square	17.583 ^a	23.796 ^a	24.553 ^a	22.398 ^a	33.893 ^a	18.573 ^a
Df	2	2	2	2	2	2
Asymp. Sig	.000	.000	.000	.000	.000	.000

Table 19

Chi Square Data with an Expected Value of 30, 60, and 10

	Time on Task	Assignment Completion	Increase GPA	Increase Test Scores	Increase Female Participation	Increase Male Participation
Chi-Square	44.670 ^a	122.340 ^a	78.117 ^a	76.320 ^a	29.783 ^a	32.550 ^a
Df	2	2	2	2	2	2
Asymp. Sig	.000	.000	.000	.000	.000	.000

Table 17 had an expected value of 34, 34, and 34 for items 31-36. The outcome showed that none of the categories, heterogeneous, single-gender, or no difference, fit the expected value. Table 18 had an expected value of 25, 50, and 25. As with the previous question, the outcome showed that none of the categories, heterogeneous, single-gender, or no difference, had a goodness of fit based on the expected value. Table 19 had an expected value of 30, 60, and 10. This was the closest, although this still did not fit the goodness of fit and there were significant differences.

The second research question centered on the teachers' and administrators' perceptions of the professional development that was provided for single-gender instruction. The data listed below are displayed in frequency tables, followed by the descriptive data which are also listed in tabular form. Descriptive data are usually organized in the form of tables to display the information in a manner that is manageable to describe (Trochim, 2006). It allows for comparisons to be made between the research's subjects or other units which will assist in formulating exceptional summaries (Trochim, 2006). Fry (2009) and Nattress (2013) used an identical method to display data in their studies on single-gender education.

Table 20 outlines the administrators' and teachers' perceptions of the level of training that they received to provide instructional support and teach in a single-gender learning environment.

Table 20

Administrators' and Teachers' Perceptions of Their Training to Provide Instructional Support and Teachers' Perceptions of Their Training to Teach in Single-Gender Classrooms

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
Administrators	0 (0%)	1 (4.76%)	2 (9.52%)	9 (42.86%)	9 (42.86%)
Teachers	1 (1.3%)	5 (6.3%)	3 (3.8%)	41 (51.3%)	30 (37.5%)

The researcher solicited 29 administrator responses to this question. There were 21 respondents from the administrators which equated to a 72% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 80 responses which calculated to a 94% response rate from the teachers.

A high percentage (85.72%) of the administrators agreed or strongly agreed that they received adequate training to provide instructional support to teachers assigned to single-gender classrooms. Only 7.6% of the administrators did not feel they received adequate training to provide instructional leadership in single-gender classrooms. The teachers, at a high percentage, 88.8 %, indicated that they received the training they needed to successfully teach in single-gender classrooms. Only 7.6% of the teachers felt that they did not have adequate training to teach in single-gender classrooms.

Table 21 outlines the administrators' and teachers' comfort levels in conducting

classroom observations and teachers' comfort levels in teaching in single-gender classrooms.

Table 21

Administrators' and Teachers' Perceptions of their Comfort Levels in Conducting Classroom Observations and Teaching in Single-Gender Classes

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
Administrators	0 (0%)	0 (0%)	2 (9.52%)	8 (38.10%)	11 (52.38%)
Teachers	0 (0%)	4 (5.0%)	1 (1.3%)	28 (35.0%)	47 (58.8%)

The researcher solicited 29 administrator responses to this question. There were 21 respondents from the administrators which equated to a 72% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 80 responses which calculated to a 94% response rate from the teachers.

The administrators reported at 90.48% that they were comfortable observing instruction in single-gender classrooms. Zero percent of the administrators felt that they were not comfortable conducting observations in single-gender classrooms. Similarly, 93.8% of the teachers felt comfortable teaching in single-gender classrooms. Only 5% of the teachers did not feel comfortable teaching in single-gender classrooms.

Table 22 displays descriptive data of the professional development provided. Item 21 represents the adequacy in the training provided to successfully teach in single-gender classes, item 22 represents the instructional support provided to teachers in single-gender classes, item 23 represents the comfort level in teaching in single-gender classes,

and item 24 represents the administrators' comfort levels in conducting teacher observations in single-gender classrooms.

Table 22

Descriptive Data of Professional Development Provided

	N	Mean	Std. Deviation	Minimum	Maximum
Item 21	80	4.17	.889	1	5
Item 22	21	4.18	.853	2	5
Item 23	80	4.49	.752	2	5
Item 24	21	4.45	.671	3	5

The mean score for administrators' perceptions that they have received adequate training to provide instructional support to teachers in single-gender classrooms is 4.18 with a standard deviation of .853. The mean score for teachers' perceptions on the training they received to adequately teach in a single-gender class is 4.17 and a standard deviation of .889.

The third research question was designed to gain insight into the administrators' and teachers' perceptions on classroom behavior in single-gender classrooms. The data are displayed in a frequency table followed by a table that displays the descriptive statistics.

Table 23 describes administrators' and teachers' perceptions of students' enjoyment in participating in single-gender classes.

Table 23

Administrators' and Teachers' Perceptions of Student Enjoyment in Single-Gender Classes

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
Administrators	0 (0%)	0 (0%)	3 (12.00%)	12 (48.00%)	10 (40.00%)
Teachers	0 (0%)	1 (1.23%)	5 (6.17%)	33 (40.74%)	42 (51.85%)

The researcher solicited 29 administrator responses to this question. There were 21 respondents from the administrators which equated to a 72% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 81 responses which calculated to a 95% response rate from the teachers.

There were no administrators and only 1.23% of teachers who reported that the students did not enjoy participating in single-gender classes. A small percentage (12%) of administrators and 6.17% of teachers had no opinion. A greater margin of administrators (88%) and teachers (92.5%) agreed or strongly agreed that students enjoyed participating in single-gender classes.

Table 24 describes teachers' and administrators' perceptions of student engagement in single-gender classes.

Table 24

Administrators' and Teachers' Perceptions of Student as Active Learners in Single-Gender Classes

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
Administrators	0 (0%)	1 (4%)	3 (12.00%)	13 (52.00%)	8 (32.00%)
Teachers	0 (0%)	3 (3.70%)	2 (2.47%)	37 (45.68%)	39 (48.15%)

The researcher solicited 29 administrator responses to this question. There were 21 respondents from the administrators which equated to a 72% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 81 responses which calculated to a 95% response rate from the teachers.

Eighty-four percent of all administrators surveyed believed that the students are actively engaged in learning in single-gender classrooms. A higher percentage (93.83%) of the teachers believed that the students are engaged. Only 4% of administrators and 3.7% of teachers believed that the students are not actively engaged in learning in the single-gender setting.

Table 25 outlines administrators' and teachers' perceptions of the setting in which the students had the highest self-esteem.

Table 25

Administrators' and Teachers' Perceptions of the Setting in which Students' Self-Esteem Increased

	Heterogeneous	Single-Gender	No Difference
Administrators	0 (0%)	13 (59.09%)	9 (40.91%)
Teachers	4 (5.0%)	64 (80.0)	12 (15.0%)

The researcher solicited 29 administrator responses to this question. There were 22 respondents from the administrators which equated to a 76% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 80 responses which calculated to a 94% response rate from the teachers.

The administrators at 59% and 80% of the teachers felt as if the students had a higher level of self-esteem in single-gender classes. None of the administrators and 5% of the teachers thought that the students had higher self-esteem in heterogeneous classes. The administrators reported at 40.91% that there were noticeable differences. A much smaller percentage of teachers (15%) responded that there were no noticeable differences.

Table 26 outlines administrators' and teachers' perceptions of the setting in which there were the least amount of distractions.

Table 26

Administrators' and Teachers' Perceptions of the Setting in which There Were the Least Amount of Distractions

	Heterogeneous	Single-Gender	No Difference
Administrators	0 (0%)	13 (59.09%)	9 (40.91%)
Teachers	11 (13.8%)	57 (71.3%)	12 (15.0%)

The researcher solicited 29 administrator responses to this question. There were 22 respondents from the administrators which equated to a 76% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 80 responses which calculated to a 94% response rate from the teachers.

A little more than half (59.09%) of the administrators and 71.3% of the teachers perceived that there are fewer distractions in single-gender classes. None of the administrators and 13.8% of the teachers thought there were fewer distractions in heterogeneous classes. Forty point ninety-one percent of the administrators and 15% of the teachers indicated there were no noticeable differences.

Table 27 outlines administrators' and teachers' perceptions of the setting in which there is the least amount of gender stereotyping.

Table 27

Administrators' and Teachers' Perceptions of the Setting with the Least Amount of Gender Stereotyping

	Heterogeneous	Single-Gender	No Difference
Administrators	1 (4.55%)	10 (45.45%)	11 (50.00%)
Teachers	7(8.8%)	55 (68.8%)	15 (22.5%)

The researcher solicited 29 administrator responses to this question. There were 22 respondents from the administrators which equated to a 76% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 77 responses which calculated to a 90% response rate from the teachers.

The administrators reported at 45.45% and the teachers at 68.8% that they believed there were fewer incidences of gender stereotyping in single-gender classrooms. A small margin (4.55%) of the administrators and 8.8% of the teachers indicated there were fewer situations of gender stereotyping in heterogeneous classes. Exactly half (50.0%) of the administrators and 22.5% of the teachers indicated they saw no difference.

Table 28 outlines administrators' and teachers' perceptions of the setting in which there are the least amount of discipline referrals.

Table 28

Administrators' and Teachers' Perceptions of the Setting with the Least Amount of Discipline Referrals

	Heterogeneous	Single-Gender	No Difference
Administrators	0 (0%)	12 (54.55%)	10 (45.45%)
Teachers	9(11.3%)	46 (57.5%)	25 (31.3%)

The researcher solicited 29 administrator responses to this question. There were 22 respondents from the administrators which equated to a 76% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 80 responses which calculated to a 94% response rate from the teachers.

A little more than half (54.55%) of the administrators and 57.5% of the teachers perceived that there are fewer discipline problems in single-gender classes. None of the administrators and 11.3% of the teachers thought there were fewer discipline issues in heterogeneous classes. The administrators (45%) and 31.3% of the teachers indicated there were no noticeable differences.

Table 29 provides descriptive data on administrators' and teachers' perspectives on students' classroom behavior. Items 25(T) through 26(A) outlined the administrators' and teachers' perspectives on students being active learners in single-gender classrooms. Item 25(A) represents the way administrators perceive how the students enjoy participating in single-gender classrooms, and item 25(T) represents how teachers perceive students enjoy participating in single-gender classrooms. Item 26(A) represents administrators' perceptions of students as active learners in single-gender classrooms and

26(T) represents teachers' perceptions of students as active learners in single-gender classrooms. The mean for teachers is 4.39 and the mean for administrators is 4.17. Their perceptions on the environment in which the students have the least amount of discipline referrals reveal a mean of 2.25.

Table 29

Descriptive Data on Administrators' and Teachers' Perspectives on Students' Classroom Behavior

	N	Mean	Std. Deviation	Minimum	Maximum
Item 25(T)	81	4.40	.680	2	5
Item 25(A)	25	4.39	.656	3	5
Item 26(T)	81	4.36	.725	2	5
Item 26(A)	25	4.17	.778	2	5

The mean scores for administrators and teachers were almost identical as they relate to their perspective on students' enjoyment in single-gender classrooms. Their scores were respectively 4.40 and 4.39. Their mean scores were slightly different as they relate to their perspective on students being active learners in the single-gender classroom. The teachers had a mean score of 4.36 while the administrators had 4.17.

Table 30 provides additional descriptive data on administrators' and teachers' perspectives on students' classroom behavior. Item 37 represents the setting in which there was a noticeable increase in student self-esteem, item 38 represents the setting in which there was a decrease in student distractions, item 39 represents the setting in which there was a decrease in gender stereotyping, item 40 represents the setting in which there

was a decrease in discipline referrals, and item 41 represents the setting in which there were improvements in students' attitudes.

Table 30

Descriptive Data on Administrators' and Teachers' Perspectives on Students' Classroom Behavior

	N	Mean	Std. Deviation	Minimum	Maximum
Item 37	102	2.14	.543	1	3
Item 38	102	2.10	.554	1	3
Item 39	99	2.21	.569	1	3
Item 40	102	2.25	.608	1	3
Item 41	102	2.39	.600	1	3

The mean scores for items 39, the setting in which there was a decrease in gender stereotyping, and 40, the setting in which there was a decrease in student discipline referrals, were similar, 2.21 and 2.25, respectively. Item 41, the setting in which the students' attitudes improved had the largest mean score, 2.39. Item 38, the setting in which there is a decrease in student distractions had the smallest mean score, 2.10.

The fourth research question, "what are administrators' and teachers' attitudes toward heterogeneous learning environments and their perceptions of their students' attitudes toward single-sex classes," is displayed in the table listed below. The data are displayed in a frequency table followed by a table that displays the descriptive statistics.

Table 31 displays the administrators' and teachers' perceptions of their abilities to fulfill their duties as instructional leaders and teachers in heterogeneous learning

environments.

Table 31

Administrators' and Teachers' Perceptions of Their Preparedness as Heterogeneous Instructional Leaders and Teachers

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
Administrators	1 (4.17%)	1 (4.17%)	3 (12.50%)	6 (25.00%)	13 (54.16%)
Teachers	0 (0%)	0 (0%)	4 (4.8%)	43 (51.2%)	37 (44.00%)

The researcher solicited 29 administrator responses to this question. There were 24 respondents from the administrators which equated to an 83% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 84 responses which calculated to a 99% response rate from the teachers.

A small margin (8.34%) of the administrators disagreed or strongly disagreed that they were prepared to fulfill their role as an instructional leader in a heterogeneous learning environment. An almost equally as small margin (12.50%) indicated that they did not have an opinion. The largest group of administrators or 79.16% agreed or strongly agreed that they were prepared to carry out their duties as an instructional leader in a heterogeneous learning environment. None of the teachers strongly disagreed or disagreed that they were prepared to teach in a heterogeneous learning environment. Of the responses from the teachers, 4.8% had no opinion at all. A large percentage of teachers (95.2%) agreed or strongly agreed that they were prepared to teach heterogeneous classes. The above data indicate that teachers, as well as administrators,

believed that they were prepared to fulfill their duties in a heterogeneous learning environment.

Table 32 displays the administrators' and teachers' perceptions of the students' motivations to learn in single-gender classes.

Table 32

Administrators' and Teachers' Perceptions of Students' Motivations to Learn in Single-Gender Classes

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
Administrators	0 (0%)	1 (4.00%)	3 (12.00%)	10 (40.00%)	11 (44.00%)
Teachers	0 (0%)	5 (6.17%)	0 (0%)	34 (41.98%)	42 (51.85%)

The researcher solicited 29 administrator responses to this question. There were 25 respondents from the administrators which equated to an 86% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 81 responses which calculated to a 95% response rate from the teachers.

A high percentage of administrators (84%) and 93.83% of the teachers reported that students were highly motivated to learn in single-gender learning environments. In contrast, 4% of administrators and 6.17% of teachers perceived that the students were not highly motivated when separated by gender.

Table 33 outlines the administrators' and teachers' perceptions of students who are assigned to single-gender classrooms attitudes towards school.

Table 33

Administrators' and Teachers' Perceptions of Students' Positive Attitudes towards School in Single-Gender Classes

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
Administrators	0 (0%)	1 (4.00%)	4 (16.00%)	9 (36.00%)	11 (44.00%)
Teachers	0 (0%)	7 (8.75%)	1 (1.25%)	32 (40.00%)	40 (50.00%)

The researcher solicited 29 administrator responses to this question. There were 25 responses from the administrators which equated to an 86% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 80 responses which calculated to a 94% response rate from the teachers.

A high percentage (80%) of school administrators and 90% of teachers perceived that students assigned to single-gender classes have a positive attitude towards school. A low percentage (16%) of the administrators and 1.25% of the teachers did not have an opinion. Only 4% of the administrators and 8.75% of the teachers disagreed that the students who are assigned to single-gender classes have positive attitudes toward school.

Table 34 displays the descriptive data of the administrators' and teachers' perceptions of the students' motivation and attitudes towards single-gender classes. Items 27(T) and (A) represent the likelihood that single-gender classrooms can motivate students to learn, items 28(T) and (A) represent the likelihood that single-gender classrooms help to create a positive attitude about school, item 97(T) represents the teachers' perspectives on the support of administrators in relation to single-gender

classes, and item 30(A) represents the administrators' perspectives of the teachers' support of single-gender classes.

Table 34

Descriptive Data of Administrators' and Teachers' Perceptions of Students' Motivation and Attitudes in Single-Gender Classes

	N	Mean	Std. Deviation	Minimum	Maximum
Item 27(T)	81	4.36	.805	2	5
Item 27(A)	25	4.35	.775	2	5
Item 28(T)	80	4.28	.888	2	5
Item 28(A)	25	4.32	.839	2	5
Item 29(T)	80	4.28	.888	2	5
Item 30(A)	21	4.32	.839	2	5

The mean response of teachers concerning the students' motivation to learn was 4.36 and the administrators' mean score was 4.35. The teachers' mean score as it relates to single-gender classes helping to create a positive attitude towards school was 4.28 and the administrators' was 4.32. Both groups, the teachers and administrators, had similar mean scores as they relate to their support of single-gender classes.

Table 35 displays administrators' and teachers' perceptions of students' motivation in heterogeneous classrooms.

Table 35

Administrators' and Teachers' Perceptions of Students' Motivation in Heterogeneous Classes

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
Administrators	0 (0%)	1 (3.85%)	0 (0%)	14 (53.58%)	11 (42.31%)
Teachers	0 (0%)	4 (4.9%)	13 (16.0%)	56 (69.1%)	8 (9.9%)

The researcher solicited 29 administrator responses to this question. There were 26 respondents from the administrators which equated to a 90% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 81 responses which calculated to a 95% response rate from the teachers.

A majority of the administrators (96.16%) and 79% of the teachers reported that students are motivated in heterogeneous classes. A small percentage of the teachers (16%) had no opinion while 3.85% of the administrators and 4.9% of the teachers disagreed that the students are motivated in heterogeneous classes.

Table 36 outlines administrators' and teachers' perceptions of students' attitudes in heterogeneous classes.

Table 36

Administrators' and Teachers' Perceptions of Students' Positive Attitudes in Heterogeneous Classes

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
Administrators	0 (0%)	1 (4.76%)	2 (9.52%)	10 (47.62%)	8 (38.10%)
Teachers	0 (0%)	12 (14.8%)	19 (23.5%)	44 (54.3%)	6 (7.4%)

The researcher solicited 29 administrator responses to this question. There were 21 respondents from the administrators which equated to a 72% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 81 responses which calculated to a 95% response rate from the teachers.

The administrators reported at 85.72% and 61.70% of the teachers perceived that the students have positive attitudes in heterogeneous classes. A small percentage of administrators (9.52%) and 23.5% of the teachers had no opinion. Only 4.76% of the administrators and 14.8% of the teachers disagreed that the students have positive attitudes in heterogeneous classes.

Table 37 shows the perceptions of support that administrators and teachers display toward heterogeneous classrooms.

Table 37

Administrators' and Teachers' Support of Heterogeneous Glasses

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
Administrators	0 (0%)	1 (4.76%)	5 (23.81%)	6 (28.57%)	9 (42.86%)
Teachers	1 (1.3%)	9 (11.3%)	27 (33.8%)	34 (42.5%)	9 (11.3%)

The researcher solicited 29 administrator responses to this question. There were 21 respondents from the administrators which equated to a 72% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 80 responses which calculated to a 94% response rate from the teachers.

A majority of the administrators (71.42%) reported that they thought teachers are supportive of heterogeneous classes. Slightly more than half (53.8%) of the teachers surveyed thought administrators were supportive of heterogeneous classes. Twenty-three point eighty-one percent and 33.8% of the teachers had no opinion. Four point seventy-six percent of the administrators did not believe the teachers supported heterogeneous classrooms, and 12.6% of the teachers did not believe administrators supported heterogeneous classes.

Table 38 outlines administrators' and teachers' perceptions of the setting in which the students had the highest attendance rate.

Table 38

Administrators' and Teachers' Perceptions of the Setting in which the Students had the Highest Student Attendance Rate

	Heterogeneous	Single-Gender	No Difference
Administrators	0 (0%)	7 (31.28%)	15 (68.18%)
Teachers	6 (7.5%)	43 (53.8%)	31 (38.8%)

The researcher solicited 29 administrator responses to this question. There were 22 responses from the administrators which equated to a 76% response rate. Eighty-five teachers were asked to respond to the question. The researcher obtained 80 responses which calculated to a 94% response rate from the teachers. Thirty-one point twenty-eight percent of the administrators and 53.8% of the teachers thought student attendance rate is greater in single-gender classes. None of the administrators and 7.5% of the teachers thought the student attendance rate is better in heterogeneous classes. Sixty-eight point eighteen percent of the administrators and 38.8% of the teachers documented there were no noticeable differences.

Summary

Chapter 4 included descriptive statistics for the purpose of organizing and presenting the data collected for this study. The data are organized sequentially to align with each of the research questions. Chapter 5 includes a summary of the findings and their relationship to the literature review, implications of findings, limitations of the study, and recommendations for future research.

Chapter 5: Results and Recommendations

Introduction

The purpose of this study was to determine middle school-level administrators' and teachers' perspectives concerning single-gender classrooms at the middle school level within South Carolina. This chapter analyzes and reports the data collected from a 41-question survey that was used to determine their thoughts concerning single-gender classes. Answers to the research questions, implications of findings, recommendations for future research, and limitations are also discussed.

Implications of Research

There were similarities and differences found between the research that was conducted by the researcher and that found in the literature review section of this paper. This section analyzes the differences and similarities between this study and other sources of research on single-gender classrooms. The researcher outlines the similarities and differences by aligning them to the research questions that guided this study.

What are school administrators' and teachers' perceptions of academic progress in single-gender classes? Within the research, Chadwell (2007) spoke to gender differences helping to guide teaching and it becoming an extension of differentiation; therefore, single-gender classes are beneficial to middle-level learners. Gaps in performance are most notable in middle school; and during this time, students can really benefit from single-gender (Meder, 2012). According to the perceptual data collected during this study, the above research has some merit.

The researcher conducted a quantitative analysis of the six survey questions that were used to answer the first research question. The data suggest that the administrators who completed the survey thought that both genders, males and females, were more apt

to be on task and focused in single-gender classrooms, but there was no real impact to their overall grade point averages or test scores. However, not only did the teachers believe the students were on task and focused in single-gender classrooms, they also reported that the students' overall test scores and grade point averages were higher than in heterogeneous classes.

When comparing the responses between the teachers and the administrators, there was a 10.01% difference in their perceptions of in which setting the students maintained the highest grade point average. There was an 8.81% difference in their perceptions of in which setting did the students obtained the highest test scores. The teachers from this study had similar perceptions as Chadwell (2007) and Meder (2012). The teachers indicated that the students obtained higher grade point averages and test scores in single-gender classrooms; however, the administrators differed in that they recorded they saw no differences in the grade point averages and test scores between single-gender and heterogeneous classes.

In examination of the mean average for all of the survey questions that were used to answer Research Question 1, the data suggest that administrators and teachers tended to think that the students had higher academic success in the single-gender setting. Therefore, although the administrators responded that they saw no difference in classroom assessments and grade point averages, their overall perceptions were that students assigned to single-gender classes displayed a higher level of academic achievement. Identical to the administrators, the teachers perceived that students showed higher levels of academic achievement in the single-gender setting. Therefore, it can be concluded that the administrators and teachers perceived that the single-gender setting contributes to high academic achievement among students.

What are the teachers' and administrators' perceptions of the professional development that was provided before and during the implementation of the single-gender classes? In order to address the learning styles of all students and to ensure that all students achieve academically, educators and policymakers must create strategies to meet the needs of all learning styles for all students (AAUW, 1998). The information collected from analyzing the two survey questions used to answer Research Question 2 points to the recognition of the need to have strategies to meet the needs of all learners. The data were analyzed quantitatively via two survey questions. According to the data, an overwhelming majority of the administrators thought they were provided adequate training to provide instructional support in single-gender classrooms. In addition, they reported at an even higher percentage that they were comfortable in their abilities to conduct observations in single-gender classrooms. The teachers were even more confident, as evidenced by the collected data, in the level of training they received to perform their duties as single-gender educators. They also indicated by a great margin that they were comfortable teaching in single-gender classrooms. Based on the data collected, both groups, teachers and administrators, believed they received adequate professional development before and during the implementation of single-gender classrooms.

Researchers believe at the middle school level, gender differences influence the way students learn and attribute to the achievement gap between the genders (Bonomo, 2010). The perceptual data collected from the teachers and administrators in South Carolina revealed that they believe they were provided the training to educate middle school students despite the gender differences. There was a slight difference (3.08%) in the administrators' and teachers' perceptions of their abilities to perform their duties in

the single-gender environment; however, both groups believed by a great margin that they were provided the professional development and they have the skills to educate students who are grouped according to gender. It can be concluded that the administrators and teachers assigned to single-gender learning environments in middle schools within South Carolina perceive that they have been provided the skills necessary to meet the needs of students assigned to their programs.

What are the administrators' and teachers' perceptions on classroom and school behavior among students assigned to single-gender classes? Due to the increase in violence that is plaguing schools, particularly at the middle school level, districts are researching strategies to address both discipline and academic concerns (Gurian et al., 2009). The data collected from Research Question 3 lend support to single-gender education being a strategy to decrease violence in schools. On the survey, the administrators indicated that they believed the students had better behavior in single-gender classes. Although the administrators noted that they saw no difference in the area of gender stereotyping, slightly over half of them perceived that there were fewer discipline referrals in single-gender classrooms. The teachers shared similar beliefs. In every area, the teachers indicated that the students displayed better behavior in the single-gender environment.

Prior to the spike in violent behaviors, teaching and learning in schools were the focus of closing the achievement gap (Poter, 2013). The data suggest that the more engaged the students are in their learning, the less time they have to engage in disruptive violent behavior. By a substantial margin, the teachers believed the students enjoyed and were more engaged in their learning in the single-gender learning environment. A majority of the principals (59.09%) believed there were fewer distractions in single-

gender classes compared to 12.21% more of the teachers (71.3%). The responses from the administrators and teachers reveal that both groups perceived students assigned to single-gender classrooms are well-behaved, active learners. In addition, a majority of the principals (54.55%) and teachers (57.5%) perceived that the students received fewer discipline referrals in single-gender classes. Therefore, it can be concluded that students assigned to single-gender classes are less likely to engage in behavior that warrants receiving a discipline referral to the principal's office.

In a previous survey sent out to South Carolina parents, students, and teachers who participated in single-gender education, it was found that a majority of the teachers noted that male student behavior improved, their willingness to participate in class improved, and their attitudes toward school improved (Piechura-Couture et al., 2011). In addition, 56% of the parents reported that their sons had improved behavior (Piechura-Couture et al., 2011). The data collected in this survey support those findings. Administrators and teachers who are assigned to single-gender learning environments in middle schools within South Carolina believe that student behavior is more desirable in the single-gender setting.

What are the administrators' and teachers' attitudes toward heterogeneous learning environments and their perceptions of their students' attitudes toward single-gender classes? According to a spring 2008 survey, teachers, students, and parents revealed that they were pleased about single-gender education in South Carolina (Chadwell, 2008a). The data collected from the researcher's survey yielded similar results. Seventy-nine percent of the administrators and 90% of the teachers perceived that students assigned to single-gender classes had positive attitudes toward school. It has renewed educators and kept students interested in learning, and parents have become

more involved in school (Rex & Chadwell, 2009). The aforementioned statement correlates to the survey question in which information was gathered concerning student motivation in single-gender classrooms. Both administrators and teachers perceived that students are motivated in single-gender classrooms. This lends support to Rex and Chadwell's (2009) claim that students are interested in learning and have positive attitudes in single-gender classes.

While coeducation may meet the needs of some learners, single-gender may be what is needed to address the needs of others (Protheroe, 2009). The administrators and teachers indicated that they felt prepared to lead and teach in a heterogeneous learning environment. Seventy-nine percent of the administrators and 91% of the teachers confirmed that they were prepared to perform their duties in a heterogeneous learning environment. In comparison, 90.48% of the administrators and 93.8% of the teachers were comfortable carrying out their duties in a single-gender classroom. These data support the thought that coeducation may be useful for some learners; however, single-gender may be what others need.

Implications of Findings

The research questions from this study were answered using a survey that was completed by administrators and teachers who were actively engaged in the implementation single-gender classes within the middle school setting. The results from the survey were collected using SurveyMonkey and analyzed with IBM SPSS. The data obtained were similar to research found in previous articles that outlined research conducted on single-gender education. The research from those articles is discussed throughout this section.

The first research question, "What are administrators' and teachers' perceptions

of academic progress in single-gender classes,” was designed to ascertain what the administrators and teachers perceived to be the academic advantage or disadvantage to single-gender education. Based on an analysis of the results, it appears that the administrators thought that although the students were more focused, they did not see an impact on their academic achievement which is somewhat of a contradiction of what the teachers reported. Teachers found that single-gender education had a positive impact on the students’ academic achievements. The researcher would recommend to middle schools to consider single-gender education as a viable option for improving student academic achievement and focus. This recommendation is based on the administrators’ and teachers’ perceptions that the students are more focused and the teachers’ perceptions that they show greater academic gains in the areas of their test scores and grade point averages. Several researchers had similar recommendations based on their research on single-gender classes.

Woodward Elementary in Deland, Florida, boasted of similar findings in 2003 when they implemented a voluntary single-gender program. The program was implemented by the then school principal Jo Anne Rodkey because the male students displayed staggering deficits in the area of reading (Gurian et al., 2009). The program proved to be successful as evidenced by the students who were assigned to single-gender classes displaying academic performance that was as well as or better than students assigned to coed classes (Gurian et al., 2009). In 1997, several California school districts experimented with single-gender instruction. California opened optional new single-gender academies to address the academic underachievement by its minority students (Hubbard & Datnow, 2005). The academies did not exist long (Hubbard & Datnow, 2005). The districts reported that the single-gender environment eliminated distractions,

and the students were able to focus better on their academics (Hubbard & Datnow, 2005).

The second research question, “what are the teachers’ and administrators’ perceptions of the professional development that was provided before and during the implementation of the single-gender classes,” was constructed to determine if the administrators and teachers were well enough versed in single-gender education to implement the program. The researcher found that the administrators and teachers who participated in single-gender education perceived that they had received adequate professional development to fulfill their duties in the single-gender environment. The researcher would recommend that before any learning community implements a single-gender learning environment, they provide ongoing professional development that enables their administrators and teachers to deal with the specific social, academic, and emotional needs of each gender. There have been studies conducted which support the researcher’s recommendation.

Salomone (2003) made a similar recommendation while discussing a single-gender program. She noted that while academically the students improved, their needs were not fully met due to a lack of professional development (Salomone, 2003). The lack of professional development prevented the school from dealing with the specific needs of boys and girls (Salomone, 2003). Nattress (2013) said extensive study on the subject matter needs to be done by all individuals who are contemplating implementing single-gender education in their school. Their study should include attending single-gender conferences and going on site visits where contacts can be made for ongoing assistance (Nattress, 2013). Instruction on gender differences and addressing the strengths of each gender should be a part of the professional development that is offered when single-gender is implemented (Fry, 2009).

The third research question, “what are the administrators’ and teachers’ perceptions on classroom and school behavior among students assigned to single-gender classes,” was composed to assist in figuring out if student behavior improved in the single-gender learning environment. The researcher discovered that students were more actively engaged in their academic studies and less engaged in disruptive classroom and school behaviors in single-gender classes. Therefore, the researcher recommends that single-gender classes be considered as a viable option when educators are researching methods to curtail students’ disruptive behaviors in the learning environment. Support for the researcher’s recommendation has been documented in other research findings.

Some researchers have cited improved student behavior as one of the key benefits to implementing single-gender classes. Hughes (2006-2007) asserted districts should consider single-gender education because it benefits learners, especially minorities and poverty-stricken students, in improving their behavior. Students show academic gains; they are less distractible in class; and their attendance improves when single-gender classes or schools are a viable option for them (Hughes, 2006-2007). The rise in academic achievement and the decrease in discipline referrals have been attributed to single-gender education in many schools (Cable & Spradlin, 2008).

The fourth research question, “what are the administrators’ and teachers’ attitudes toward heterogeneous learning environments and their perceptions of their students’ attitudes toward single-gender classes,” was asked to determine if there was a difference in the educators’ views of heterogeneous and coeducation classes as well as to gauge the students’ like or dislike for the single-gender setting. The researcher found that the teachers and administrators had positive attitudes toward heterogeneous groupings, and students were positive in their attitudes toward single-gender classes. Based on the data,

the researcher recommends that schools that are researching methods to address student apathy consider single-gender education as a solution. There have been additional studies that support the researcher's findings.

There are educators who have an adequate comfort level in heterogeneous as well as single-gender classrooms; but according to this study, they favor the single-gender environment (Fry, 2009). Chadwell (2008b) conducted a survey and reported that 66% of the students reported that their self-esteem and their desire to succeed academically improved in single-gender classes.

Limitations

This study presented some limitations that prevented the researcher from concluding that it could be used across all academic settings. The first limitation was the lack of consistency in the structure of the single-gender setting. Some of the respondents replied based on their experiences with limited access to the single-gender environment, and others responded based on their experiences in a whole-school implementation model. This limited the researcher in ascertaining what lenses the surveys reflected.

Another limitation was access to the participants. The researcher was a North Carolina resident when the surveys were distributed to the administrators and teachers in South Carolina. This prevented the researcher from having read access to the database which listed the middle schools that were participating in some version of single-gender education. It is logical to presuppose that the researcher could have had a greater level of participation had she been in South Carolina with access to the database that listed the participants.

A final limitation was the lack of updated information the South Carolina State Department of Education was able to provide. In past years, South Carolina was noted as

the only state that had a separate department for single-gender education; however, recently, South Carolina's State Department of Education restructured and eliminated that department. Therefore, the information that the agency was able to provide was dated and limited. With current and up-to-date information, the researcher could have solicited more participants and had a greater display of teachers' and administrators' perceptions concerning single-gender education.

Recommendations

There were several areas the researcher noted could be addressed in further research on single-gender education. One area is the difference in effectiveness of whole-school implementation of single-gender education and selected areas such as math or reading. Research could be done to explore if there is greater academic progress made by students if they are enrolled in a fully single-gender program versus partial. Furthermore, the research could examine the impact that full versus partial implementation has on student self-esteem.

Another recommendation would be to do a mixed-method analysis of the parents' and students' views of single-gender education. The parents and students could be interviewed and surveyed to get their perspective on single-gender education. Within the research, there could be a study of the common themes among the parents and students as it relates to single-gender education.

Finally, the researcher recommends doing a study that builds upon this research. The researcher recommends analyzing South Carolina PASS data, the standardized assessment used by the state to measure student growth, to determine if there is a substantial difference in academic performance between middle school students who are assigned to single-gender classrooms and those who are not.

Conclusion

Pinpointing strategies to meet the academic, social, and emotional needs of all learners is the essence of what educators have been charged to do. The data found in this research supports the thought that single-gender education is an effective strategy for meeting the needs of both male and female learners. Therefore, educational practitioners should consider single-gender classrooms as a means to closing the achievement gap between the genders. This research supports findings that show an improvement in student engagement, academic performance, and behavior when grouped according to gender.

None of the data found in this research displays a negative effect on students when they are placed in single-gender classrooms. In fact, it lends support to the data that have grown over the past several years that show single-gender placement is a strategy worthy of consideration. The research presented in this study can be used when pondering the academic and behavioral benefits of single-gender education. Finally, it can be used by administrators and teachers when making decisions about student placement that will yield improvements for both male and female students.

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Appendix A

Letter of Invitation to Participate in the Study

March 10, 2014

Dear School administrator:

My name is Shemmicca Moore and I am a doctoral candidate at Gardner-Webb University. I am currently conducting a study for my dissertation that aims to gather data on school administrators' and teachers' perception of single-gender classrooms in co-educational middle schools. Some of the purposes of this quantitative study are to examine how school administrators and teachers view the academic achievement and behavior of students assigned to single-gender classrooms.

I am requesting that you and members of your staff who are assigned to teach in single-gender classes participate in my study. If you agree, during the second week of May 2014, you, all other administrators assigned to your school, and the teachers will receive an e-mail containing a link to the survey. You will be requested to complete the on-line survey, which is hosted by SurveyMonkey.com. It is divided into 5 sections and should take approximately 20 minutes of your time to complete. Your responses will be completely anonymous, and no individual names or institutions will be recorded during the course of this survey. The data will be stored electronically in a secure place.

The Gardner-Webb University Institutional Review Board has approved this study. Your agreement to participate in the study is strictly voluntary. Your willingness to participate will be greatly appreciated. For additional information, you may e-mail me at shemmiccamoore1@gmail.com.

Sincerely,

Shemmicca M. B. Moore

Appendix B

Dr. Fry's (2009) Instrument

Teachers' view of Single-Gender and Heterogeneous Education

Section 1. Demographics. Please place an X in the box that most closely reflects you.

1. How many years have you taught?	1-5	6-12	13-20	20-30	30+
2. How many years have you taught single-gender classes?	1-5	6-12	13-20	20-30	30+
3. How many years have you taught heterogeneous classes?	0-5	6-12	13-20	20-30	30+
4. What level do you teach?	Pre-K	Elementary	Middle/Junior High School	High School	College
5. What is your level of education?	B.A.	Teaching License	M.A.	PhD/Ed.D	Other
6. Gender	Male	Female			

Section 2. Heterogeneous class setting. Please provide your opinion about each of the following statements. Put an X in one box on each line that represents to what extent you agree or disagree with each statement.

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
7. I feel have received adequate training to successfully teach in a heterogeneous classroom.					
8. I am comfortable teaching in a heterogeneous classroom.					
9. I feel students enjoy participating in a heterogeneous classroom.					
10. Students are active learners in a heterogeneous classroom.					

11. Heterogeneous classrooms can motivate students to learn.					
12. Heterogeneous classrooms help create a positive attitude about school for my students.					
13. My administration supports heterogeneous classrooms.					

Section 3. Single-Gender Class Setting. Please provide your opinion about each of the following statements. Put an X in one box on each line that represents to what extent you agree or disagree with each statement.

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
14. I feel I have received adequate training to successfully teach in a single-gender classroom.					
15. I am comfortable teaching in a single-gender classroom.					
16. I feel students enjoy participating in a single-gender classroom.					
17. Students are active learners in a single-gender classroom.					
18. Single-gender classrooms can motivate students to learn.					
19. Single-gender classrooms help create a positive attitude about school for my					

students.					
20. My administration supports single-gender classroom.					

Section 4. Academic Achievement. Put an X in the box that best gives your answer.

	Heterogeneous Classroom	Single-gender Classroom	No difference observed
21. In which setting have you noticed an increase in students' time on- task?			
22. In which setting have noticed an increase in assignment completion?			
23. In which setting have you noticed students' GPA's/ grades increase?			
24. In which setting have you noticed students test scores increase?			
25. In which setting have you noticed more participation by females?			
26. In which setting have you noticed more participation by males?			

Section 5. Behavioral Changes. Put an X in the box that gives your answer.

	Heterogeneous Classroom	Single-gender Classroom	No difference observed
27. In which setting have you noticed students' self-esteem increase?			
28. In which setting have			

you noticed student distractions decrease?			
29. In which setting have you noticed a decrease in gender stereotypes?			
30. What setting have you noticed a decrease in discipline referrals?			
31. In which setting have you noticed an improvement in students' attitude toward school?			

Appendix C

Permission Granted to Use Dr. Fry's Instrument

-----Original Message-----

From: John Fry [<mailto:fryj@stillwater.k12.mn.us>]

Sent: Friday, December 20, 2013 11:15 AM

Subject: Re: dissertation instrument

Ms. Moore,

Yes you can use my instrument and modify it to meet your needs. Good luck and have fun.

Dr. John P. Fry

Elementary & Early Childhood Program Administrator, Student Support Services

Stillwater Area Public Schools

1875 South Greeley Street South

Stillwater, MN 55082

(651) 351-8390

>>> Shemmicca Moore 12/20/13 8:28 AM >>>

December 20, 2013

Dr. Fry,

Good morning. My name is Shemmicca Moore and I am a doctoral student at Gardner-Webb University. I am in the process on of writing my dissertation and my topic is School Administrators' and Teachers' Perception of Single-gender Classrooms in Coeducational Public Middle Schools Within South Carolina. While researching, I came across the instrument that you used for your research. I am requesting permission from you to use your instrument to conduct my research. I will make some modifications to suit the needs of my study. I thank you for your time and consideration.

Sincerely,

Shemmicca Moore

Assistant Principal

WR Odell Elementary

Appendix D

Moore's (2014) Instrument

Section 1. Demographics. Please circle the one that most closely reflects you.

1. What is your role at your current school?
Principal Assistant Principal Teacher
2. How many years have you taught?
1-5 6-12 13-20 20-30 30+
3. How many years have you been a school administrator?
1-5 6-12 13-20 20-30 30+
4. How many years have you taught single-gender classes?
1-5 6-12 13-20 20-30 30+
5. How many years have you been a school administrator at a school that offered single-gender classes?
1-5 6-12 13-20 20-30 30+
6. How many years have you taught heterogeneous classes?
1-5 6-12 13-20 20-30 30+
7. What is your level of education?
B.A. Teaching License M.A. PhD/Ed.D Other
8. What is your gender?
Male Female
9. What is your level of education?
Masters Administration Certification PhD/ Ed.D
10. What is your gender?
Male Female

Section 2. Heterogeneous class setting. Please provide your opinion about each of the following statements. Circle the one that most closely reflects you.

11. I feel that I have received adequate training to successfully teach in a heterogeneous classroom.
Strongly Disagree Disagree No Opinion Agree Strongly Agree

12. I feel I have received adequate training to fulfill my duties as an instructional leader for teachers assigned to heterogeneous classes.

Strongly Disagree Disagree No Opinion Agree Strongly Agree

13. I am comfortable teaching in a heterogeneous classroom.

Strongly Disagree Disagree No Opinion Agree Strongly Agree

14. I am comfortable observing instruction in heterogeneous classroom.

Strongly Disagree Disagree No Opinion Agree Strongly Agree

15. I feel students enjoy participating in a heterogeneous classroom.

Strongly Disagree Disagree No Opinion Agree Strongly Agree

16. Students are active learners in a heterogeneous classroom.

Strongly Disagree Disagree No Opinion Agree Strongly Agree

17. Heterogeneous classes can motivate students to learn.

Strongly Disagree Disagree No Opinion Agree Strongly Agree

18. Heterogeneous classrooms help create a positive attitude about school for my students.

Strongly Disagree Disagree No Opinion Agree Strongly Agree

19. My administration supports heterogeneous classrooms.

Strongly Disagree Disagree No Opinion Agree Strongly Agree

20. My teachers support heterogeneous classrooms.

Strongly Disagree Disagree No Opinion Agree Strongly Agree

Section 3. Single-gender class setting. Please provide your opinion about each of the following statements. Circle the one that most closely reflects you.

21. I feel that I received adequate training to successfully teach in a single-gender classroom.

Strongly Disagree Disagree No Opinion Agree Strongly Agree

22. I feel that I have received adequate training to provide instructional support to teachers in single-gender classrooms.

Strongly Disagree Disagree No Opinion Agree Strongly Agree

23. I am comfortable teaching in a single-gender classroom.
Strongly Disagree Disagree No Opinion Agree Strongly Agree
24. I am comfortable conducting a teacher observation in a single-gender classroom.
Strongly Disagree Disagree No Opinion Agree Strongly Agree
25. I feel students enjoy participating in a single-gender classroom.
Strongly Disagree Disagree No Opinion Agree Strongly Agree
26. Students are active learners in a single-gender classroom.
Strongly Disagree Disagree No Opinion Agree Strongly Agree
27. Single-gender classrooms can motivate students to learn.
Strongly Disagree Disagree No Opinion Agree Strongly Agree
28. Single-gender classrooms help to create a positive attitude about school for my students.
Strongly Disagree Disagree No Opinion Agree Strongly Agree
29. My administration supports single-gender classrooms.
Strongly Disagree Disagree No Opinion Agree Strongly Agree
30. My teachers support single-gender classrooms.
Strongly Disagree Disagree No Opinion Agree Strongly Agree

Section 4. Academic Achievement. Please provide your opinion about each of the following statements. Circle the one that most closely reflects you.

31. In which setting have you noticed an increase in students' time on task?
Heterogeneous Classroom Single-gender Classroom No difference
32. In which setting have you noticed an increase in assignment completion?
Heterogeneous Classroom Single-gender Classroom No difference
33. In which setting have you noticed students' GPAs increase?
Heterogeneous Classroom Single-gender Classroom No difference
34. In which setting have you noticed students test scores increase?
Heterogeneous Classroom Single-gender Classroom No difference

35. In which setting have you noticed more participation by females?
Heterogeneous Classroom Single-gender Classroom No difference

36. In which setting have you noticed more participation by males?
Heterogeneous Classroom Single-gender Classroom No difference

Section 5. Behavioral Changes. Please provide your opinion about each of the following statements. Circle the one that most closely reflects you.

37. In which setting have you noticed students' self-esteem increase?
Heterogeneous Classroom Single-gender Classroom No difference

38. In which setting have you noticed student distractions decrease?
Heterogeneous Classroom Single-gender Classroom No difference

39. In which setting have you noticed a decrease in gender stereotypes?
Heterogeneous Classroom Single-gender Classroom No difference

40. What setting have you noticed a decrease in discipline referrals?
Heterogeneous Classroom Single-gender Classroom No difference

41. In which setting have you noticed an improvement in students' attitude toward school?
Heterogeneous Classroom Single-gender Classroom No difference