Teacher Preparedness For And Implementation Of Single-Gender Instructional Strategies And Culturally Relevant Pedagogy With African-American Girls In Single-Gender Classrooms

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ABSTRACT

EDUCATIONAL LEADERSHIP

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TEACHER PREPAREDNESS FOR AND IMPLEMENTATION OF SINGLE-GENDER INSTRUCTIONAL STRATEGIES AND CULTURALLY RELEVANT PEDAGOGY WITH AFRICAN-AMERICAN GIRLS IN SINGLE-GENDER CLASSROOMS

Committee Chair: Dr. Barbara Hill

Dissertation Dated May 2014

The purpose of this study was to investigate the factors that impact teachers’ preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms. Three Single-Gender Academies were included in the study. Twenty participants responded to a teacher survey, nine teachers and two administrators were interviewed, and lesson plans from six of the teachers interviewed were also collected. Descriptive statistics, regression tests and Pearson’s Correlations were used to analyze quantitative data and displayed a significant relationship between professional development and teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy. A significant relationship also existed between teacher preparation program and teacher preparedness for implementing single-gender
instructional strategies. No significant relationship was found between teacher
demographics and teacher preparedness for and implementation of single-gender
instructional strategies and culturally relevant pedagogy. Analysis of qualitative data
revealed that certain teacher demographics did impact teacher preparedness for and
implementation of single-gender instructional strategies and culturally relevant pedagogy
for the teachers in this research investigation. Qualitative analysis of data provided
evidence to support the quantitative findings about professional development and single-
gender instructional strategies and culturally relevant pedagogy with African-American
girls in single-gender classrooms. Moreover, analysis of qualitative data revealed that
specific behaviors of administrators influenced teacher preparedness for and
implementation of single-gender instructional strategies and culturally relevant pedagogy.

Results of this research investigation provide implications and recommendations for
school districts that incorporate single-gender classroom environments, faculty at
Educational Departments at local universities and alternative teacher preparation
programs and administrators that lead these schools.
TEACHER PREPAREDNESS FOR AND IMPLEMENTATION OF SINGLE-GENDER INSTRUCTIONAL STRATEGIES AND CULTURALLY RELEVANT PEDAGOGY WITH AFRICAN-AMERICAN GIRLS IN SINGLE-GENDER CLASSROOMS

A DISSERTATION
SUBMITTED TO THE FACULTY OF CLARK ATLANTA UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF EDUCATION

BY

BRANDI E. JOHNSON

DEPARTMENT OF EDUCATIONAL LEADERSHIP

ATLANTA, GEORGIA

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CHAPTER I

INTRODUCTION

The dropout epidemic in the United States disproportionately affects low-income, minority, urban, single-parent youth attending large, public high schools in the inner city. Across the country, 68% to 80% of students graduate from high school, but only 50% of minority students graduate from high school. There are nearly 2,000 high schools in the country with low graduation rates, and 15 of the schools are located in the southern states. Some experts predict that the dropout problem will increase substantially through 2020 unless significant improvements are made (Bridgeland, Dijulio, & Morrison, 2006).

The decision to drop out often reflects students’ unique life circumstances, and speaks to a slow process of disengagement from school (Bridgeland, Dijulio, & Morrison, 2006). Research suggests that high school dropouts have a higher likelihood of future unemployment, impoverished living, dependence on public assistance, prison time and death row, poor health, divorce, and single parenthood having children who will also drop out (Bridgeland, Dijulio, & Morrison, 2006).

Educators attempt to address the dropout epidemic through reform models. One reform model authorized by Title V of the Elementary and Secondary Schools Act of 1965 and amended by the No Child Left behind Act of 2001, smaller learning communities (SLCs), provides grants to local school boards for large public high schools with over 1000 students. SLCs allow small groups of students in large schools to remain
together throughout high school in a theme, academy, and/or career concept school environment in an effort to decrease the likelihood that they will drop out (Smaller Learning Communities Program, 2013). Several large urban school districts have introduced the SLC concept because evidence suggests that smaller size seems to improve the performance of schools serving impoverished communities (Howley, Strange, & Bickel, 2000). Small schools and small learning communities, a reform model that includes one-on-one instruction that engages students in their studies, provides real world connections, and allows interdisciplinary teaming of teachers and students, show promise in some urban school districts across the nation. Chicago, Phoenix, Jacksonville, Houston, San Francisco, Kansas City, and Los Angeles are examples of cities that have implemented the SLC concept. The Matthew Project found that in the states of Montana, Georgia, Ohio, and Texas, smaller schools cut the variance in achievement associated with socioeconomic status (SES) by between 20% and 70% and usually between 30% to 50% depending on grade level (Howley, Strange, & Bickel, 2000). According to the Atlanta Public Schools [APS] (2008-2009) library of themes for small learning communities and small schools, process themes, concept themes, and academic/career-based themes are types of themes that small schools or smaller learning communities may establish to help elicit student interest. Process themes help a school focus on the type of learning that will be most common in the school. For instance, project-based learning encompasses a process theme. Concept themes provide the school with a focus on a broad topic of interests such as the environment, social justice or global health. A school with a career focus helps students think about a range of careers in a
broad area of work like health science and research or government. Yet, other districts incorporate single-gender schools with SLCs or single-gender academies within SLCs as an additional option for students to encourage them to graduate from high school.

According to Hubbard and Datnow (2005), the Bush administration lessened Title IX restrictions on single-sex schools to address the needs of students who have not historically been successful in traditional coeducational schools, specifically low income and minority students. The administration passed the No Child Left behind Act of 2001 that offered a provision of grant funding to encourage more focused research on single-gender programs in public schools (Friend, 2007). *No Child Left Behind* cited single-gender classes as an “innovative” tool to boost achievement (Rycik, 2008). In 2006, change in federal regulations gave schools more flexibility in separating male and female students if classes are voluntary and the students can still choose equal coeducational classes (Rycik, 2008). This led to the establishment of single-sex schools within the public school system.

Past research about educating students in single-gender classroom environments suggests that a multitude of areas should be explored to improve this type of school reform. For example, according to Spielhagen (2011), past research on single-gender education such as: High School and Beyond and National Longitudinal Study of High School and Beyond of High School Class of 1972, proved limited because it failed to address preparation of teachers in single-sex classroom environments before they entered them. Moreover, recent research from Herr and Arms (2004) suggested that teachers in single-sex classroom environments needed ongoing professional development in gender
equity. Ferrara (2005) found that in order to successfully implement single-sex classroom environments, teachers needed to be aware of differences in learning preferences between male and female students.

This research investigation addresses two specific areas that need inspection regarding single-gender education: (a) teacher preparedness for and implementation of strategies best suited for educating African-American girls in single-gender classrooms and (b) administrative behaviors that prepare teachers and support them in implementing strategies to best educate African-American girls in single-gender classrooms. This study will add to previous research by Spielhagen (2011), Herr and Arms (2004), and Ferrara (2005) on knowledge and implementation of pedagogy best-suited for students in single-gender classrooms. Also, it will provide an in-depth examination of teachers’ knowledge and implementation of strategies for minority students, specifically African-American girls in single-gender classrooms.

**Statement of the Problem**

Research reveals academic and social advantages of single-gender classrooms specifically for girls. A two-way analysis of variance showed that fifth-grade girls in a single-gender public, elementary school, tested higher on the math Measure of Academic Progress (MAP) than females in co-educational classes, as well as, males in co-educational and single-sex classrooms (McFarland, Benson, & McFarland, 2011). Another quantitative study demonstrated that girls in single-sex classrooms expressed a higher self-concept than girls in co-educational settings (Egbochuku & Aihie, 2009).
Hubbard and Datnow (2005) added that single-gender classroom environments also reverse the gender stratification norm for low-income minority students.

While the prior research of McFarland et al. (2011), Egbochuku and Aihie (2009), and Hubbard and Datnow (2005) provides information about both advantages and disadvantages of single-gender classrooms for girls, as compared to co-educational classrooms, more information about teacher preparation for working with African-American girls in single-gender classes is needed. Specifically, this research investigation sought to inform school districts that integrate single-gender classroom environments about factors that impact the level of knowledge that teachers possess about single-gender instructional strategies and culturally relevant pedagogy, as well as, the degree to which these strategies are utilized to enhance the educational experiences of African-American girls in single-gender classrooms.

**Purpose of the Study**

The purpose of this mixed methodological study was to examine factors that impact teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American females in single-gender classrooms. The study sought to determine whether teacher demographics, teacher preparation programs, and professional development for teachers play a significant role. The behaviors of administrators who lead teachers in these environments were also explored to enlighten school leaders about the importance of not only the classroom interaction of teachers with the students, but also the factors outside of the classroom that may affect achievement of these students. Institutions that offer teacher
preparation programs can benefit because they can use findings from the study to make adjustments and improvements to their programs. This would better prepare pre-service teachers for working with diverse student populations and implementing gender-inclusive instructional strategies. Finally, results of this study can help parents of African American girls in single-gender classrooms advocate at the school and district level for their children’s teachers, so their students can receive the best education possible.

**Research Questions**

Research questions one and two both entailed qualitative and quantitative research questions:

RQ1: What factors impact teacher preparedness for and implementation of single-gender instructional strategies with African-American girls in single-gender classrooms (teacher demographics, teacher preparation program, administrator behavior, other)?

RQ2: What factors impact teacher preparedness for and implementation of culturally relevant pedagogy with African-American girls in single-gender classrooms (teacher demographics, teacher preparation program, administrator behavior, other)?

Research questions three and four were qualitative research questions only.

RQ3: What administrative behaviors influence teacher preparedness for and implementation of single-gender instructional strategies?

RQ4: What administrative behaviors influence teacher preparedness for and implementation of culturally relevant pedagogy?
The quantitative research questions included in this study were:

RQ5: Is there a significant relationship between teacher demographics and teacher preparedness for implementing single-gender instructional strategies?

RQ6: Is there a significant relationship between teacher demographics and teacher implementation of single-gender instructional strategies?

RQ7: Is there a significant relationship between teacher preparation program and teacher preparedness for implementing single-gender instructional strategies?

RQ8: Is there a significant relationship between teacher preparation program and teacher implementation of single-gender instructional strategies?

RQ9: Is there a significant relationship between professional development for teachers and teacher preparedness for implementing single-gender instructional strategies?

RQ10: Is there a significant relationship between professional development for teachers and teacher implementation of single-gender instructional strategies?

RQ11: Is there a significant relationship between teacher demographics and teacher preparedness for implementing culturally relevant pedagogy?

RQ12: Is there a significant relationship between teacher demographics and teacher implementation of culturally relevant pedagogy?
RQ13: Is there a significant relationship between teacher preparation program and teacher preparedness for implementing culturally relevant pedagogy?

RQ14: Is there a significant relationship between teacher preparation program and teacher implementation of culturally relevant pedagogy?

RQ15: Is there a significant relationship between professional development for teachers and teacher preparedness for implementing culturally relevant pedagogy?

RQ16: Is there a significant relationship between professional development for teachers and teacher implementation of culturally relevant pedagogy?

**Significance of the Study**

Findings from this research added to previous research regarding single-gender education, culturally relevant pedagogy and teacher preparation. The findings revealed factors that affect teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy. Educational leaders in school districts that integrate single-gender classrooms with minority students, specifically African-American females, can use the results of this study to select the best-suited individuals to teach in these environments, provide teachers with the most effective and efficient professional development to meet the needs of these students and advise school administrators about ways to support teachers in these environments to promote a positive learning environment for students. Findings from this study also validate the importance of school leaders taking appropriate measures to ensure the effectiveness of
single-gender school reform. Simply placing girls in a classroom together does not guarantee desired academic and social results without careful consideration and incorporation of necessary strategies.

**Summary**

According to Bridgeland, Dijulio, and Morrison (2006), a disproportionate number of minority and low income students drop out of high school across the United States for various reasons. As a result of dropping out, these students often face dire societal consequences in the future. Federal initiatives such as *No Child Left Behind* have attempted to address the achievement gap between minority and low-income students and students of higher socioeconomic status who are Caucasian. Small schools and schools that implement smaller learning communities (SLCs) receive federal funds to improve educational achievement outcomes for underserved student populations. Some small schools consist of only students of one particular gender and some SLCs integrate single-gender classes. While prior research suggests that single-gender classrooms help increase achievement of girls on standardized exams and improve their self-concept, it also points out that teachers within these environments fail to receive appropriate training to optimize their effectiveness in single-gender environments (Hubbard & Datnow, 2005; Friend, 2007; Rycik, 2008). Therefore, more research in the area of teacher preparedness for single-gender classrooms needs to occur.

The purpose of this research investigation is to determine what factors significantly influence teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy in single-gender classrooms with
African-American girls. The results of this research investigation sought to inform school leaders in schools with single-gender classrooms for girls how to better prepare teachers to work in this specific type of school environment with this particular student demographic. It also sought to provide school leaders with general profiles of types of individuals best-suited to work in these environments as well. This research investigation added to previous research related to single-gender education, culturally relevant pedagogy, teacher preparation programs, and professional development for teachers.
CHAPTER II

REVIEW OF THE LITERATURE

Organization of the Review

The review of literature found in this section examined research on the educational achievement of African-American girls and the advantages of single-gender environments for girls, with a focus on the benefits for African-American girls. The roles of teacher preparation programs at colleges and universities in preparing pre-service teachers for educating diverse student populations and strategies utilized to support these individuals once they become teachers of diverse student populations was also explored. Lastly, the literature review provided an examination of administrators’ behaviors in high performing schools and the influence that evaluation instruments have on these behaviors.

Literature Review

African-American Girls and School

According to Tsui (2007), across the United States, as indicated by five US national and international surveys related to students from 4th to 12th grade, boys and girls performed similarly in mathematics from 1990-2003. However on the Scholastic Aptitude Test (SAT), a widely used college entrance exam, male juniors and seniors outperformed females by at least 30 points during the same time frame. By 2006, males constituted 46% of SAT-Math examination testers. Although more females sat for the
exam, more males scored between 700-800 points on the math section of the SAT than females. American gifted populations of students in mathematics also revealed that males score higher than females on standardized exams (Tsui, 2007). Rycik (2008) reported that a study presented in USA Today confirmed these results by displaying that 15-year-old boys, both nationally and internationally, outscored girls of the same age on the math portion of the Program for International Student Assessment (PISA) overall. However, girls from countries that view women and men more equally such as Iceland, outscored males in mathematics on the exam. Ironically in Asia, a continent in which many countries do not provide the same opportunities for females that they provide for males, East Asian countries showed no gender differences in the mean math scores on the Trends in International Mathematics and Science Study. Moreover, Asian females significantly outscored American eighth grade male and female students on the exam and Asian eighth graders scored higher than American eighth graders overall (Tsui, 2007). These results imply that factors outside of ability may explain the gender differences in math standardized exam performance of males and females in the United States.

Not only are gender discrepancies in academic performance apparent across America, but similar discrepancies exist among races. In the Covenant with Black America, Smiley (2006) reveals that only 45% of African-American children are enrolled in early childhood education programs and only 73% are registered by four years old. Thus, an achievement gap exists in the United States between black and white children beginning as early as primary school (Bacharach, Baumeister, & Furr, 2003). For instance, the National Assessment of Educational Progress (NAEP) showed that white
students in the fourth grade had higher scores than African Americans in reading and
math (Durden, 2008). The same held true for eighth grade students as well. Smiley
(2006) displayed that only 12% of African-American fourth graders had reached the level
of proficient in reading and 61% had not even reached the basic level. According to
Smiley, one national reading assessment indicated that black children underperformed
white children by 16%. In 2004, wider gaps appeared between the performance of black
and white nine-year-olds on the reading NAEP than the gap between these groups in
1990 (McKinley, 2010). Rajagopal (2011) reported a tremendous achievement gap in
math in California. On the California Standards Test (CST) in 2008, 65% of African
Americans scored below the basic level on the algebra test, while 65% of white students
scored at the basic level or above. Additionally, only 8% of African-American students
obtained a score of proficient on the test (Rajagopal, 201). Nationwide, most black 17-
year-olds graduate from high school with a mathematics proficiency equivalent to white
eighth grade math students (Smiley, 2006).

Some research suggests that secondary school may reduce the educational
achievement gap slightly in academic areas, but a lack of longitudinal research exploring
this phenomenon makes this assumption questionable (Bacharach, Baumeister, & Furr,
2003). Past research by Bacharach, Baumeister, and Furr found that only the High
School and Beyond Study (HS&B) in 1980, the National Longitudinal Survey of Labor
Market Experience of Youth in 1979, and the National Educational Longitudinal Study
(NELS) of 1988/1994 existed as sources of longitudinal data that represented large
groups of high school students nationwide related to academic achievement in secondary
schools. The NELS, which followed a group of eighth grade students through high school, revealed that the achievement gap between black and white students is widened in reading as they progress through high school but not in mathematics. Using data from the NELS, Bacharach et al. (2003) analyzed the racial and gender science achievement gaps of the students as well. Out of a sample of the students in this population who ultimately graduated from high school with their eighth grade cohort, 668 of them black children with 52% black girls and 5,463 white children with 51% white girls, black students finished the eighth grade with lower science achievement scores and the gap increased as the students matriculated through high school. The same findings were true in comparing the achievement of females and males in science. Girls possessed lower science achievement scores than boys at the end of eighth grade and the gap increased through high school (Bacharach et al., 2003). Black girls performed the lowest on science achievement exams of all the students in the study. While white students in this population outnumbered black students, the results of this study imply a need for secondary education to address the achievement gap of black girls, specifically in the area of science.

Swinton, Kurtz-Costes, Rowley, and Okeke-Adeyanju (2011) note that African-American boys report higher self-concepts about their mathematics and science performances than African-American girls and that African-American girls report higher self-concepts about literacy. This suggests one reason why African-American girls perform worse on science achievement exams than whites or African-American boys. Swinton et al. conducted a research study that examined attributions of African-American
students regarding their achievement in math, English and science and whether these 
attributions changed from middle to high school. The researchers hypothesized that boys 
would be more likely than girls to attribute math and science successes to ability and 
failures in English to lack of ability. At the same time, they hypothesized that girls would 
be more likely to attribute English success to ability and math and science failures to a 
lack thereof. This longitudinal study of 115 African-American students, 49 boys and 66 
girls primarily from a rural school district, supported the researchers’ hypotheses 
(Swinton et al., 2011). Attributions for math successes and failures became more 
negative for both male and female students, in the sample, during high school and 
students with negative attributions in math during eighth grade had lower math 
engagement in high school. However, boys were more likely to attribute their success in 
math to ability than girls during both middle and high school (Swinton et al., 2011). 
Results of this study point out that attributions put African-American students at risk for 
disengagement in high school in certain subject areas—literacy for males and math for 
females.

Along the same lines of Swinton et al., research conducted by Evans, Copping, 
Rowley, and Kurtz-Costes (2011) on 254 African American, seventh and eighth graders 
from public middle schools in the southeast, found that academic achievement related to 
the girls’ self-concept of math and science and boys had a higher math and science self-
concept than girls. Although participants in this study rated girls as performing better in 
math, science, and literacy, they possessed stereotypical views that boys perform better in 
math and science than in reading and writing and girls perform better in reading and
writing than math and science. Furthermore, they demonstrated beliefs that white students perform better in all areas (Evans, Copping, Rowley, & Kurtz-Costes, 2011). Findings from this study reveal that both racial and gender identities may influence academic achievement when students hold stereotypical viewpoints.

While research by Bacharach et al. (2003) and Swinton et al. (2011) provide evidence that African-American girls face academic challenges such as low achievement in science and lower self-concept in math, the academic needs of black girls often get overlooked because black girls, in most instances, appear to be doing well academically when compared to black boys (Rollock, 2007). In a study examining peer relations among ninety-nine black fourth grade children in elementary schools in the northeast, Nelson-Le Gall (2006) found that as hypothesized, black girls were more highly rated as helpers and perceived as being more academically competent than black boys by their classmates. These results supported previous research that black girls perform better than black boys academically, get better grades, earn higher test scores, and are seen as more favorable by teachers (Nelson-Le Gall, 2006). Rollock (2007) also noted that 16-year-old black girls and black Caribbean girls in England performed significantly higher than black males on the General Certificate of Secondary Education (GCSEs) and the equivalent exams. However, the researcher highlights that the same group scored well below white girls and below the national average. Rollock conducted an ethnographic study exploring reasons why staff in an inner-city secondary school in England did not focus on the academic achievement of black girls. Interviews with staff members revealed that staff viewed black girls as needing less monitoring, exhibiting more
favorable appearances and behavior and displaying more femininity and less masculinity. Interviews with students revealed that black girls shared similar values to their teachers by finding importance and attributing success to characteristics like appearance and adhering to the dress code (Rollock, 2007). Thus, even though black girls still underperform academically compared to white students, they demonstrate characteristics that make them more acceptable to staff than black males. In turn, they appear to be more successful in school than black males and their academic needs receive less focus.

**Single-Gender Classes and Female Students**

Previous research suggests that single-gender classrooms may provide learning environments where female voice is not disregarded and these students are not dominated by males (Tully & Jacobs, 2010). Moreover, all-female single-gender classrooms allow girls to become the focus and move them toward higher development than coeducational classrooms (Tully & Jacobs, 2010). Kessels and Hannover (2008) hypothesized that eighth grade girls in single-sex classes in Berlin, Germany would report a better self-concept of ability in physics after their first year in the class, than girls in co-educational physics classes. Using a quasi-experimental design, girls were randomly placed in single-gender or mixed-gender physics classes within a co-educational school. The researchers found that girls developed a more positive self-concept of ability in physics when placed in single-sex classes. Moreover, the researchers concluded that this more positive self-concept resulted from girls having decreased accessibility of gender-related self-knowledge in single-sex classes because males were not present in the classes (Kessels & Hannover, 2008).
In an Australian case study examining the impact of single-gender secondary mathematics learning environments, Tully and Jacobs (2010) found that of the 39 female participants enrolled in the engineering program at the University of Technology, Sydney, 40% of the women who had attended high school in Australia, had attended a single-gender school. These women scored highest among all participants on an instrument measuring self-concept of mathematical ability, including male participants. They also referred to the highly competitive academic environment and expectation of attending college in the single-gender high schools. Furthermore, these women stated that in their single-gender mathematics classes, the teachers encouraged them to excel and gave them authentic learning experiences. This type of classroom environment supports the development of self-concept (Tully & Jacobs, 2010).

According to Tully and Jacobs’ study, the single-gender participation in the engineering program at the University of Technology, Sydney, was almost twice the average of female attendance at single-gender schools. This fact about the study alludes to the idea that females who attend single-gender high schools are more likely to pursue non-traditional college majors and careers for women. Research by Watson, Quatman, and Edler (2002) supports this positive aspect of single-gender classroom environments for girls as well. In their study, the researchers hypothesized that single-gender secondary school environments in San Francisco, California, would have a positive impact on the career goals of girls. They found that not only did girls from single-gender school environments have higher ideal and realistic career goals than girls from coeducational schools, but girls of all ability levels in the single-gender environments
demonstrated higher career aspirations (Watson, Quatman, & Edler, 2002). Interestingly, while the career aspiration scores dropped significantly prior to the 12th grade for both females in coeducational environments and males, in the study, the scores did not drop for girls from single-sex schools. When comparing visits to the single-gender schools and coeducational schools, Watson et al. (2002) observed that girls in the single-gender environment had a greater level of involvement in school activities, enthusiasm about school, and relationship with teachers, administrators and other students than girls in the coeducational environment. While this study is limited due to the single-gender participants being in smaller private schools instead of larger public schools as were the other students, it still provides evidence that supports research by Tully and Jacob (2010) that girls in single-gender classroom environments display a measurable belief in their talent and future potential (Watson et al., 2002).

While Tully and Jacobs (2010) and Kessels and Hannover (2008) conducted research on single-gender classroom environments for secondary school girls outside of the United States and Watson et al. (2002) conducted research related to private school girls in single-gender classroom environments, Hubbard and Datnow (2005) utilized an ethnographic approach to explore the effects of single-gender classroom environments on low-income and minority boys and girls who attended single-gender public elementary, middle and high schools in California. Participants in the study were academically underachieving and encountered obstacles to school success such as: limited English proficiency, poverty, race, discrimination, and/or geographical location (Hubbard & Datnow, 2005). Through their longitudinal study, they found that single-sex schools
appropriately addressed social needs of students to improve their opportunities for school success. The single-gender environment also allowed students to focus academically because it eliminated distractions from the opposite sex in the schools. Girls in the single-gender environments did not have to compete with males or their teacher’s attention. They learned to work collaboratively and bond as friends. They also did not experience harassment from the opposite sex.

Similarly, Parker and Rennie’s (2002) research findings about girls in Australian high schools revealed that girls in single-sex classes received less harassment from other students, participated more, interacted more with the teacher, and appeared more extroverted, than girls in coeducational classrooms. Furthermore, Ferrara’s (2005) investigation of the implementation of single-gender classrooms in a northeastern United States school district found that girls’ classrooms moved at a much faster rate than boys’ classes and girls discovered new-found strengths and leadership.

Research reveals that one contributing factor to the success of girls in single-gender classrooms is the teacher. Teachers in single-gender classes with girls exhibited authentic caring, imparted social, moral, and academic lessons on students, held important teacher-student conversations, and addressed numerous student needs (Hubbard & Datnow, 2005). According to Ferrara (2005), teachers in single-gender classroom environments with girls allowed girls to talk to better develop their answers to questions and encouraged girls to use creativity in completing their major projects and assignments by providing them with extended time outside of school to work on them. Parker and Rennie (2002) stated that girls in single-gender science classrooms in their
study reported feeling more supported by the teacher than in their coeducational classes. Teachers integrated gender-inclusive strategies such as co-operative group work and collaborative problem-solving in single-gender classrooms which created an environment more conducive to achievement of girls. They also empowered girls to take risks by designing their own experiments to explore scientific issues of their interest and solving open-ended problems (Parker & Rennie, 2002).

**Teacher Preparation for Teaching Diverse Students**

In analyzing the responses of middle and high school students surrounding the topic of teacher effectiveness, private Christian school, low socioeconomic rural secondary school, and middle class suburban school students agreed that effective teachers listen to students, treat them as adults, exhibit care, build relationships, love students, possess high expectations of them, make real world connections, challenge students, ensure understanding, manage their classrooms, and genuinely enjoy their profession (Williams, Sullivan, & Kohn, 2012). According to Smeaton and Waters (2013), lack of teacher planning time, the current emphasis on standardized exam preparation, lack of resources, behavior disruptions, student apathy and insubordination may interfere with teachers’ abilities to exhibit the qualities expressed above. Smeaton and Waters note that teacher preparation programs need to make sure that the curricula and field experiences of preservice teachers prepares them for the reality of teaching in the midst of educational changes and under less than ideal circumstances. Therefore, Williams et al. (2012) suggests that teacher educators need to teach future teachers how to capitalize on relating to students and building relationships. Moreover, Williams et al.
note that teacher preparation programs should focus more deeply on examining dispositions of future educators, emphasizing conversations related to meeting the needs of the entire child, not just students’ academic needs, and demonstrating for future teachers appropriate attitudes necessary to foster student learning. Maye and Day (2012) suggested from the results of their research study that education programs at colleges should provide coursework that allows future teachers to explore aspects of their own personal belief systems regarding values, beliefs, historical perspectives, traditions, etc. to gain a better understanding and preparedness for working with diverse student populations. Milner (2011) states that teacher education programs should provide pre-service teachers with learning opportunities that help them focus on the strengths of diverse students to combat negative stereotypes that the teachers may possess about diverse students based on media exposure and past experiences.

Unfortunately, Ferrara (2005) revealed that professors in teacher preparation programs found that most general pedagogy and content specific pedagogy textbooks fail to include topics like gender differences in learning preferences. If the textbooks addressed gender differences in learning preferences at all, they only mentioned differences related to learning math or science, and completely ignored social studies and English/language arts. Meanwhile, Maye and Day (2012) also implied that while most teacher preparation programs may attempt to address cultural diversity outside of gender differences, their efforts prove inadequate. Teacher education programs need to address concerns pre-service teachers may possess such as teaching diverse student populations like minorities in single-gender classrooms and at-risk student populations.
Certain colleges and universities embed aspects of cultural diversity into their teacher preparation programs. For example, a California university requires all pre-service teachers to pass a multicultural education class before they begin student teaching (Cho & DeCastro-Ambrosetti, 2005). The multicultural education class at this university serves to provide students with historical and contemporary perspectives on cultural diversity, definitions related to culture, information about group differences, and strategies for teaching culturally and linguistically diverse students. Cho and DeCastro-Ambrosetti sought to determine how the course affected the participants’ attitudes about diverse student populations and how valuable the participants found the multicultural education course. They found that the course positively influenced the 18 participants’ attitudes about working with diverse students by increasing awareness and appreciation of other cultures. However, some students still did not feel prepared to teach diverse students after taking the class because their culture differed from that of diverse students and/or they dismissed the impact of societal racism on diverse students and felt that the parents of the students lacked placing value on education (Cho & DeCastro-Ambrosetti, 2005). The results of this study revealed the importance of implementing a multicultural education class into teacher preparation programs, but indicated a need for more training than one class provides as Maye and Day (2012) suggested.

According to Lee and Herner-Patnode (2010) many teacher education programs use one multicultural education course to prepare teachers similar to the university described above. However, multicultural education scholars argue against this and encourage the incorporation of multicultural education throughout teacher preparation
programs in all courses to assist in providing pre-service teachers with research-based strategies to help them respond to diverse classrooms (Lee & Herner-Patnode, 2010). Siwatu (2011) examined the culturally responsive teaching self-efficacy beliefs of pre-service teachers enrolled in a Midwestern teacher preparation program, the self-efficacy forming experiences that they received regarding culturally responsive teaching through the program and how the experiences developed their beliefs about culturally responsive teaching. The researcher found that the pre-service teachers who scored highest in self-efficacy on a questionnaire measuring their beliefs about their abilities to incorporate culturally responsive teaching strategies had more exposure to culturally responsive teaching theory and practice in the teacher preparation program, observed culturally responsive teaching practices being implemented by their cooperating teachers during their student teaching and practiced utilizing more culturally responsive teaching practices than those who scored lower on self-efficacy (Siwatu, 2011). However, participants in this study indicated that few of the required courses, including methods courses, in their teacher preparation program allowed them opportunities to discuss the culturally responsive teaching skills placed on the questionnaire and the courses that did allow opportunities for this type of discussion centered-around facts about culturally responsive teaching and linguistic diversity without procedural and conditional knowledge for classroom application (Siwatu, 2011).

Some universities use coursework along with partnerships between the universities and schools to increase pre-service teacher preparation. A study by Lee and Herner-Patnode (2010) described a College of Education at one university that used a
university and school partnership approach called a Professional Development School (PDS) to prepare teachers to address needs of low-income and culturally diverse students by providing professional development and using research and inquiry instructional methods. The study included: students in the teacher preparation course at the university possessing a year-long field placement at urban elementary schools in a local district, university professors, school administrators and cooperating teachers in the PDS and middle childhood teacher candidates at various school locations for the nonPDS. The elementary preservice teachers completed course related activities surrounding Ruby Payne's readings about childhood poverty and Kunjufu’s response to Ruby Payne. They then compared the perspectives of the two in a paper. Additionally, the group read four books about class, race, exceptionality, and gender, held class discussions, and wrote a reflection paper. The middle school pre-service teachers also read Ruby Payne’s book as well and an article by Osei-Kofi that reviewed the book (Lee & Herner-Patnode, 2010). The teacher educators sought to assist the students in critical thinking skills and exploring multiple perspectives by integrating Kunjufu’s book and Ose-Kofi’s article into the course. Lee and Herner-Patnode found that the elementary teacher candidates displayed a stronger awareness of diverse students’ needs such as being conscious of different methods of culturally relevant pedagogy like grouping students heterogeneously, selecting teaching resources that represent diverse people, planning lessons for different types of families, and teaching African American history. At the same time, the elementary candidates still held some negative perceptions which points out a somewhat limited understanding of cultural differences. Only 2 of the 25 middle school candidates
planned and implemented lessons about class. Others only provided suggestions about ways that teachers can understand differences of students through technology use and incorporation of home culture (Lee & Herner-Patnode, 2010). These results show promise for preservice teachers participating in extensive coursework and activities in teacher preparation programs that require them to gain a deeper understanding of culturally diverse student populations and engaging in student teaching placements in urban schools for extensive periods before entering the teaching profession to allow them the opportunity to develop their culturally responsive teaching skills.

Not only do teachers need training in methods to best educate diverse student populations prior to entering the teaching profession, but they also need professional development after they have actually become classroom teachers. One key aspect of professional development relates to reflection. In chapter 4 of Blasé and Blasé (2004), the author discusses that due to the complexity of the teaching profession, teachers need to reframe their experiences, problem-solve, generate alternatives, create hypothesis, and assess their actions to grow. Principals that exhibit reflective supervision support, encourage, and guide teachers to practice the aforementioned processes to reflect over their work. A study conducted by Blasé and Blasé highlighted the importance of teachers displaying reflective behaviors. Teachers displayed these behaviors more frequently when their principals/supervisors motivated them to reflect. Dray and Wisneski (2011) stated that before a teacher can accept and embrace diversity, they must reflect on challenges that block their acceptance of diversity and reconsider how they communicate with students. School leaders need to assist teachers in developing practices for
reflection on understanding institutions, personal assumptions, and forms of communication that cause issues to arise between teachers and their students. Dray and Wisneski introduced a process for mindful reflection and communication that they examined through a case study of a special education teacher. The teacher implemented the following steps with the assistance of a teacher leader that helped her develop more culturally responsive practices: (a) explained the attributions that she had about one of her students, (b) wrote out and reflected on her feelings and thoughts while working with the student, (c) considered alternative explanations by reviewing her documentation and reflections, (d) checked her assumptions, (e) made a plan, and (f) continuously revisited the process to reassess her attributions and progress with the student (Dray & Wisneski, 2011).

A study supported by the Annenberg Foundation described in Sanacore (2000) intertwined the importance of teacher reflection and teacher professional development workshops on teacher preparation for implementing strategies to improve success of culturally diverse students. The School Development Program implemented in this study focused on the whole child to support student success in school and life. Teachers at two elementary schools in the Westbury School District participated in monthly teacher workshops, with the Literacy Program Director and his colleagues at The School Development Program, such as incorporating reader’s theater and providing students’ opportunities for resiliency in the classroom to improve literacy (Sanacore, 2000). They then reflected on the workshops and their implementation of the strategies with diverse students in a journal. According to Sanacore, teachers incorporation of the strategies
taught at the teacher professional development workshops led to increased literacy
learning through less whole group instruction, more cooperative grouping and student
collaboration, and increased student engagement. Their journals reflected not only the
student progression academically, but also the teachers’ transitions from traditional
instruction into more culturally relevant teaching practices.

**Behaviors of Effective Administrators**

Murphy, Elliott, Goldring, and Porter (2007) allude to the fact that leadership
plays a tremendous role in school success. In high performing schools, leaders focus on
learning, teaching, curriculum and assessment and align all areas of schooling with
improved student learning outcomes. Murphy et al. reveal that leadership focused on
learning that is emanated by high performing schools, falls under the dimensions of
vision, instructional program, curricular program, assessment, communities of learning,
acquisition and use of resources, culture, and advocacy. Additionally, leaders exhibit
behaviors based on their previous experiences, knowledge, personal characteristics and
values. These leadership behaviors impact student achievement, growth, and educational
equality for all student populations. Leaders in high performing schools exhibit
leadership behaviors in each of the aforementioned eight dimensions that lead to
increased student achievement, growth and educational equity. Regarding vision, leaders
in high performing schools facilitate the development and maintenance of a school vision
reflecting high and attainable standards that will lead to increased student achievement
(Murphy et al., 2007). These leaders base their school vision on data and measure their
progress toward accomplishing the vision by reaching data-driven goals. In terms of the
instructional program dimension, leaders in high performing schools possess knowledge of and investment in the instructional program. They carry this out by focusing on teaching, obtaining and keeping the best teachers, providing feedback on instruction, rewarding good teaching, and providing opportunities for teachers to improve instruction (Murphy et al., 2007). Likewise, leaders in high performing schools delve deeply into the curriculum to ensure alignment between classroom and out of classroom school experiences for students. This serves to increase engagement of students with curriculum information and maximize their opportunities to achieve academic success. Leaders in high performing schools know assessment practices for increased student academic outcomes and work with teachers to create, implement and monitor assessments. High performing school leaders ensure that their work environments encompass communities of learning. Murphy et al. suggest that these leaders promote professional development of staff and growth of professional learning communities within their schools. They actively plan and evaluate staff development, as well as provide on-going support for teachers to incorporate into their classrooms strategies used through professional development. They also encourage collaboration and a collegial environment.

Dimension six relates to resources. Leaders in high performing schools value teachers as a resource and strategically place them in classes most advantageous for student achievement. These leaders also successfully secure funding outside of the general school budget to strengthen the quality of instruction and curriculum (Murphy et al., 2007). Another characteristic of high performing leaders entails their ability to create a school culture of accountability, safety, high expectations and hard work. They achieve
this through taking responsibility for staff and student performance, enforcing discipline and building maintenance, personalizing the school environment and recognizing hard work (Murphy et al., 2007). The final dimension involves advocating for students and their families by respecting cultural, ethnic, and racial diversity. They develop relationships with community stakeholders to improve communication and collaboration between the school and parents, local politicians and community business partners.

While each dimension of the leadership for learning of high performing schools deems important, administrator behaviors in certain dimensions apply directly to single-gender education and culturally relevant pedagogy. Specifically, exhibition of effective administrative behaviors in the dimensions of instructional program, curricular program, assessment, and establishment of a community of learners prove essential. These dimensions directly impact classroom activities. They also focus on effectiveness of teachers who interact most frequently with students.

Catano and Stronge (2006) speak of the roles of principals as well. They discuss a shift in administrator responsibilities following the standards and accountability movement that caused increased pressure from stakeholders for school improvement. They go on to state that today’s principals must balance adhering to the demands of stakeholders while empowering staff through collaboration and shared leadership (Catano & Stronge, 2006). Similar to Murphy et al. (2007) and Catano and Stronge (2006) acknowledge the necessity of administrators demonstrating effective collaborative decision-making skills, school management, instructional leadership and staff development. Furthermore, they introduce the idea that administrators must possess
appropriate knowledge, skills and dispositions to lead culturally and linguistically diverse student populations in schools. Catano and Stronge evaluated 100 principal evaluation instruments in the state of Virginia to determine how much emphasis the instrument placed on instructional leadership and its alignment to professional standards like the Interstate School Leaders Licensure Consortium (ISLCC) standards. The researchers found that evaluation instruments in Virginia emphasized instructional quality and delivery and aligned strongly with professional standards. Interestingly, the instruments devoted very little written language to teacher training. This indicates some inconsistencies in the expectations of administrators. While their performance evaluations focused on instructional quality, they failed to hold principals accountable for professional development that could ultimately improve instructional quality. This provides implications for administrators who lead in school environments with single-gender classrooms. If these leaders get evaluated based on instruments similar to those that evaluate principals in Virginia, then they may not feel that they need to prioritize the planning, encouragement, and evaluation of teacher training. Thus, they may not adequately prepare and provide support for their teachers who work in single-gender classrooms with African-American girls.

Summary

This review of literature examined the academic achievement of African-American girls, single-gender classroom environments, teacher preparation for teaching diverse student populations, and administrator behaviors. Research displayed an achievement gap between females and males in mathematics and science and between
black and white students at various ages in multiple subjects (Tsui, 2007; Rycik, 2008, Rajagopal, 2011; Bacharach et al., 2003). Moreover, Rollock (2007) suggested that while black girls achieve at lower rates than white students, their academic achievement often gets overlooked because they normally get compared to another population of students underserved in schools—black boys.

Single-gender classrooms provide an opportunity for girls to improve academic outcomes, especially in math and science. These environments also increase girls’ self-concept and career aspirations (Tully & Jacobs, 2010; Watson et al., 2002). Hubbard and Datnow (2005) found positive impacts of single-gender school and classroom environments on low income minority females in California. Unfortunately, these environments lost financial support and ultimately closed. However, the findings show promise for schools that currently implement single-gender classrooms with minority girls.

Positive teacher-student relationships led to improved outcomes for girls in single-gender classrooms, especially minority girls. Oftentimes however, teachers receive poor preparation to teach diverse student populations and students in single-gender classrooms. Ferrera (2005) noted that teachers received little to no training on gender-inclusive strategies before entering single-gender classrooms as teachers. Teacher preparation programs at universities also fail to provide information regarding gender differences in learning. Meanwhile, these teacher preparation programs sometimes include only one multicultural education class to teach pre-service teachers the best ways educate culturally diverse students (Cho & DeCastro-Ambrosetti, 2005). Lee and
Herner-Patnode (2010) found that pre-service teachers with extensive opportunities to practice use of culturally relevant pedagogy in their internships utilized it more than those who did not. Sanacore (2000) found that professional development workshops and reflection increased teacher implementation of culturally relevant teaching which supports the Blasé and Blasé (2004) assertion on the importance of professional development.

Effective administrators exhibit specific behaviors related to vision, instructional program, curriculum, assessment, communities of learning, organization culture, and advocacy (Murphy et al., 2007). The behaviors relating to instructional program, curriculum, assessment, and communities of learning are vital in relationship to leading students in schools with single-gender classroom environments because they directly impact teachers and classrooms activities. While principal evaluation systems evolve around the importance of instructional quality, some of these instruments do not target in their language teacher training as a primary responsibility for administrators (Catano & Stronge, 2006). This could prove problematic in school environments with single-gender classrooms of minority students because evaluation instruments influence administrator behavior and research highlights the importance of continued professional development for teachers in single-gender classrooms and those who teach diverse student populations.
CHAPTER III

THEORETICAL FRAMEWORK

This mixed methods study applied the conceptual frameworks of brain-based learning, single-gender education, and culturally relevant pedagogy. Brain-based learning often serves as a justification for the promotion of single-gender classrooms in schools. Under the notion that the brains of males and females develop differently, single-gender classrooms provide circumstances under which an understanding of these brain differences can help educators optimize educational outcomes of students. Brain research provides information about brain components, functions, and processes. Brain-based learning connects this information to best practices in education to promote student learning. Educators have used brain-based learning to employ numerous instructional strategies with diverse student populations. However, in order to utilize brain research to appropriately incorporate it with the implementation of gender inclusive instructional strategies and culturally relevant pedagogy, teachers in single-gender classrooms must receive adequate preparation. This preparation could stem from a variety of arenas including: demographic background, teacher preparation program, professional development, and/or administrator behaviors.

Brain-Based Learning

According to Gurian (2002), the human brain consists of the cerebral cortex, the limbic system and the brain stem. The cerebral cortex controls thinking, decision-making
imagination and language development. The limbic system controls emotions, sensory, memory, stress, body temperature and sleep cycles (Gurian, 2002). The brain stem controls actions of the parasympathetic nervous system and processes such as breathing and digestion. Brain-based learning involves utilizing knowledge and an understanding of the way the brain functions to design instruction in the best way to promote student learning (Duman, 2010). Applications of brain research in education include: acknowledging and teaching students based on their individual differences, using a variety of instructional strategies, and capitalizing on the brain’s natural process of learning (Duman, 2010). Table 1 displays 12 principles that surround brain research (Caine & Caine, 1991).

Researchers interested in neuroscience and learning have integrated these principals to make educational implications and/or conduct studies exploring brain-based research in a variety of areas. Learning styles, multiple intelligences, science education, English Language Learners, and diverse classrooms to name a few areas that researchers have explored.

Duman (2010) investigated whether brain-based learning contributed to the academic achievement of students with different learning styles. He used a pre- and post-test experimental model with a control group that examined whether academic achievement of third year university students in the brain-based learning experimental group, would differ from the academic achievement of the control group of third year university students who received traditional instruction.
Using an academic achievement level test and the Kolb’s learning styles inventory, he found that brain-based learning significantly increased the academic achievement of the students when compared to the control group (Duman, 2010). Moreover, the results showed that students with the diverging, converging, and assimilationist learning styles in the experimental group significantly outscored students in the control group with the same learning styles. These findings imply that educators should use brain based learning model to develop in-class activities and lesson plans, especially for students with different learning styles.
Ghraibeh (2012) investigated brain-based learning and multiple intelligences with 300 university level education students, taking a Psychology class at King Saud University. The researcher used The Learning and Thinking Style Measurement tool to determine students’ thinking and the area of the brain that they use for different activities. The results of the study revealed a direct correlation between natural intelligence and the left hemisphere of the brain and intrapersonal intelligence and the integrated brain. An inverse relationship was found between musical intelligence and the left hemisphere and logical intelligence and the right hemisphere. Direct correlations also existed between kinetic intelligence and linguistic intelligence and the left hemisphere, along with spatial intelligence and the right hemisphere. Finally, the study displayed an inverse relationship between musical, logical, kinetic, linguistic, and spatial intelligence and the integrated brain. According to Ghraibeh, the results of this study support previous research that the right hemisphere of the brain supports visual memory, while the left hemisphere primarily supports verbal ability. However, the findings also indicate that each hemisphere of the brain works together in an integrated way to fully provide multiple intelligences because both hemispheres play a role in determining skills, but the role varies in efficiency and proficiency. Therefore, Ghraibeh (2012) suggested that more studies on multiple intelligences, methods of learning attributed to each brain hemisphere and multiple intelligences of students at different age levels need to occur.

Arokoyu and Adolphus (2011) introduced past research regarding various brain theories such as the split-brain theory, dual brain theory, and holonomic brain theory to discuss brain and learning opportunities, how brain-based learning impacts education,
and the implications that brain-based learning have on teaching science. The researchers describe the origination of split-brain theory as one half of the brain being the god mind that controlled the other half of the brain the man mind. This theory progressed as an understanding of research on patients with a severed corpus callosum, the area that connects the left and right hemispheres of the brain. Patients with severe epilepsy may get their corpus callosum severed to reduce brain trauma during seizures. Research on these patients revealed that severance of the corpus callosum blocks transfer of perceptual, sensory, motor and Gnostic forms of information (Arokoyu & Adolphus, 2011). The dual brain theory suggests that the left and right brain hemispheres of the cerebrum sense and react to the environment independently of one another and that one hemisphere may dominate over the other to reduce brain trauma. The left brain controls analysis and logic while the right brain controls intuition. Lastly, the holonomic brain theory claims that cognitive function is led by neurological wave interference patterns between perception and quantum vectors. This theory stemmed from physics and related to how a piece of a hologram contains information about an entire image and the implications of this for encoding memories (Arokoyu & Adolphus, 2011). Integrating Caine and Caine’s (1991) 12 principles to these brain theories and taking into account instructional techniques related to brain-based learning provides important information for educators about curriculum, instruction, and assessment (Arokoyu & Adolphus, 2011). Arokoyu and Adolphus note that educators must adhere to the instructional techniques of orchestrated immersion, relaxed alertness and active processing as they design curriculum, prepare for instruction and create assessments for student learning in
science. Specifically, teachers need to consider student interests when designing curriculum which leads to orchestrated immersion - getting students fully immersed in the educational experience. Teachers can increase relaxed alertness by preparing for instruction that allows cooperative grouping and teamwork, makes real world connections for students and uses various strategies and settings to enhance learning. Furthermore, teacher assessment of student learning should consider students’ learning styles which allow students then to engage in instruction and actively process information. Additionally, educators that take brain-based learning into account to increase student learning need to present information in context, promote a positive learning environment to reduce fear, encourage students to understand their feelings and the way these feelings affect learning, practice enthusiasm, modeling, and coaching to place value on information being learned and avoid rote learning (Arokoyu & Adolphus, 2011).

Lombardi (2008) discusses how Caine and Caine’s (1994) 12 principals of brain-based research can apply to educating English Language Learners (ELL). Providing activities that appeal to various learning styles and changing activities multiple times in classrooms with ELL students can stimulate their thoughts and actions. These strategies relate to principle one. Cooperative learning through games, rituals and class discussion with ELL students incorporates principle two. Thematic teaching, community involvement, and explaining to ELL students why they are participating in learning activities demonstrates application of principle three. According to Lombardi (2008), using graphic organizers, introducing vocabulary, and presenting video clips helps ELL
students search for meaning through patterning which underlies principle four. Creating a warm, supportive, and encouraging classroom increases success for ELL students and demonstrates application of principle five. Interdisciplinary teaching assists ELL students with perceiving and creating parts and wholes which exemplifies principle six. Providing students with processing time, allowing them time to reflect on learning, and making real life connections for students displays application of principle seven.

Lombardi (2008) reveals that principle eight notes that learning involves conscious and unconscious processes, so educators should use metacognition through questioning ELL students. Principle nine relates to the two types of memory. Educators of ELL students can connect with students’ short and long term memory by organizing activities into meaningful parts, making ideas contextual and attending to a variety of learning styles and intelligences. Principle ten states that learning is developmental and displays the importance of implementing new learning strategies with ELL students. ELL teachers need to balance a challenging environment with support to apply principle eleven. Lastly, ELL educators must realize that all brains are unique and meet students where they are, by using instructional methods that address a variety of students’ needs and build their confidence and skills (Lombardi, 2008). Examining the way that the twelve principles of brain-based learning transfers into instructional methods best-suited for improving educational outcomes for ELL students, points out advantages of integrating brain research into K-12 classrooms. Thus, educators of diverse student populations can benefit from professional development opportunities surrounding this issue. Providing educators with more information about the way that the brain functions
and how learning occurs can help teachers design more effective lessons and classroom environments to meet the needs of all students, specifically student populations at-risk for underachievement in K-12 schools.

McCall (2012) acknowledges the potential benefits of brain research in classrooms with diverse students. She discusses brain-based learning as supporting research in cognition, psychology, and neuroscience. She indicates that application of brain research can decrease stress for students and improve their ability to learn. McCall (2012) cautions educators to keep in mind before designing brain-based classrooms that some brain-based learning claims are misleading, limited brain research has been conducted on children, oversimplifying applications of neuroscience alter the original meaning and intent, and educators need to seek knowledge and understanding of the brain before creating brain-based classrooms. At the same time, she encourages educators to implement brain research strategies in their classrooms with diverse learners once they possess a solid foundation of knowledge about brain-based learning.

**Brain-Based Research as a Justification for Single-Gender Education**

Coeducational schooling, presently the most common educational setting found in the United States, creates school environments that educate male and female students in the same way, despite their biological differences. Some advocates of single-gender classrooms use biological differences and brain research to support separating students based on gender. Clark (2004) suggests that hormones may attribute to males experiencing more success in math and science while struggling more in English and Foreign languages. Piechura-Couture, Heins, and Tichenor (2011) discuss that males and
females exhibit differences in the way the retina, cochlea and autonomic nervous system are organized. Specifically, boys’ retinas track motion better, but girls’ retinas sense detail and color variation better. Girls hear at higher frequencies than boys and discriminate speech better. Moreover, the parasympathetic nervous system arouses during stressful situations in girls, releasing acetylcholine, whereas the sympathetic nervous system releases adrenaline for males in these same types of situations. The releasing of these opposite chemicals causes females and males to act differently when stressed. Also, different neurological circuits become activated in males and females when drawing to memory pictures that evoke emotion or arousal (Piechura-Couture et al., 2011). Therefore, boys often have more difficulty expressing emotions than girls. According to Rycik (2008), the area of the brain responsible for language develops before the area responsible for spatial relations in girls. Moreover, the left hemisphere of the brain develops earlier in girls than in boys. Most language takes place in the left hemisphere (Gurian, 2002). On the other hand, the right hemispheres of boys’ brains are dominant and provide them with more spatial perspective than girls (Gurian, 2002). By the age of eight, the hippocampus is bigger in females and receives more neuron transmissions than boys, equipping them with more storage capacity. However, every brain is unique and an overlap of biological and brain processes may occur between genders. Meanwhile environmental, psychological and social factors may also contribute to students’ experiences in school. Proponents of single-gender education do take into consideration the role that biological and brain differences between genders plays in
student learning and in planning effective instruction to improve academic outcomes for both males and females.

Single-gender education has undergone numerous changes in the United States since its inception during Colonial times. During this time period, males received instruction in reading and writing to get them ready for attendance at grammar schools. Female students, on the contrary, received informal reading and writing instruction to prepare them for dame schools (Friend, 2007). Even at the collegiate level, at the first coeducational college, women took courses that primarily focused on cooking and housekeeping while men took academic subjects. According to Friend (2007), in 1873, Dr. Edward Clark published *Sex and Education* that asserted that females who enrolled in schools with boys endangered their health. Even more extreme than his warning, he justified his statement by explaining that these females diverted to the brain the blood needed for menstruation by involving themselves in academic rigor. In the early 1900s, coeducational school curriculum began tracking males and females by placing males in courses such as woodshop classes and placing girls in home economics classes (Friend, 2007). However, the 1954 Brown vs. Board of Education Supreme Court decision changed the landscape of single-gender education. This ruling, which determined that schools segregated by race were inherently unequal, led to segregated schools based on other criteria like gender being called into question as well. Toward the later years of the 20th Century, Congress passed Title IX of the Elementary and Secondary Education Act in 1972 and the Women’s Educational Equity Act of 1974 to promote elimination of gender bias in schools (Friend, 2007). Title IX prohibited educational institutions
receiving federal money from discriminating based on sex. The Women’s Educational Equity Act served to provide grant funding to educational institutions to help them meet Title IX requirements. These regulations on single-gender education continued until the Bush Administration sought school reforms to improve student academic achievement in struggling public schools. The implementation of the No Child Left behind Act of 2001 (NCLB) gave schools receiving federal funding the permission to use single gender education as an innovative reform to increase student academic performance. Since the passing of NCLB, many school districts, especially those located in the inner-city, have instituted single-gender education within their districts.

Single-gender classrooms exist within single-gender schools or co-educational schools. Numerous countries report gender differences in educational achievement. Contrary to early educational inequalities for women, current advocates of single-gender classrooms often focus on the academic advantages that these classrooms provide boys because of a prevalent male academic achievement problem. For instance in New Zealand, a higher percentage of girls than boys received grades considered excellent in major subjects (Gibb, Ferguson, & Horwood, 2008). Also, the year 2006 began showing a trend of more females earning bachelors, masters, and doctoral degrees than males in New Zealand. In the United States, boys get referred to and placed in special education programs at a higher rate than girls. African-American boys specifically get labeled as possessing emotional/behavioral disorders disproportionately (Piechura-Couture, Heins, & Tichenor, 2011). Hubbard and Datnow (2005) suggest that teachers often hold lower expectations for African-American male students in schools, which serves as an academic
disadvantage for them. Thus, the United Kingdom and other countries both nationally and internationally seek to solve the issue of poor academic performance of males by incorporating single-gender classrooms in schools. Some research reports advantages of single-gender classrooms for boys such as gains in language arts, more participation and less self-consciousness about completing schoolwork, and better attitudes toward and behavior in school (Rycik, 2008; Ferrara, 2005; Piechura-Couture et al., 2011). On the other hand, other research provides contradictory information claiming that boys failed to perceive single-gender classrooms as improving their math performance, all-boys classes increased bullying, and the classes increased behavior management problems for teachers (Clark, 2004; Parker & Rennie, 2002).

Although conflicting scholarly evidence suggests that single-gender classes may or may not support positive school advantages for boys, research overwhelmingly highlights ways that these classrooms improve the academic experiences of girls. In countries such as Australia, Sweden, and the United Kingdom, schools often incorporate single-gender classrooms for girls. These classrooms improve the academic performance of the girls, specifically in mathematics and science and also play a positive role in their social adjustment (Rycik, 2008; Clark, 2004). Girls in single-gender classrooms feel more confident in their academic capabilities as compared to girls in co-educational classrooms (Clark, 2004; Kessels, & Hannover, 2008). All-girls classrooms also made classroom management easier for teachers, which increased opportunities for implementation of gender-inclusive strategies for the girls (Parker & Rennie, 2002). In Philadelphia, Girls’ High School continues to exist as a single-gender school, while its
former single-gender counterpart for boys has been forced to transition into a co-
educational school due to litigation brought against it. Girls’ High School exudes success
for girls that legally has not been challenged (Friend, 2007).

**Culturally Relevant Pedagogy**

Not only must educators in single-gender classrooms apply brain research when
designing and implementing curriculum and strategies best-suited for females, but they
must also examine the area of cultural differences. Various factors relate to culture such
as race, ethnicity, age, and socioeconomic status. Educators must keep in mind the fact
that culture may also play a significant role in determining academic outcomes of girls in
single-gender environments, especially African-American girls. Thus, the need for an
describes the term culturally relevant pedagogy as a concept central to the academic
success of African American students. Culturally relevant pedagogy should serve to
empower these students by allowing them to experience academic success, develop and
maintain cultural competence (student acquisition of their own cultural knowledge and
expanding this knowledge to a broader cultural understanding), and challenge social
injustices. Durden (2008) contends that culturally relevant pedagogy recognizes student
diversity and individual differences and avoids categorizing students as disadvantaged or
at-risk. Milner (2011) described culturally relevant pedagogy as an analytic tool used for
explaining and determining the ways that a teacher enhances his/her own cultural
knowledge to provide the best learning environment for students.
Various research studies investigate and support teachers’ uses of culturally relevant pedagogy with African-American students. In fact, Durden (2008) suggests that in considering any school reform model, district and school-based educational leaders must ensure that the reform allows teachers the opportunity to integrate culturally responsive teaching practices because multiple studies demonstrate the positive impact the pedagogy has on diverse student populations.

Tate (1995) conducted a culturally relevant pedagogical study related to mathematics that supported the notion that African-American students need teachers to exhibit pedagogical practices that build on the thoughts and experiences of the students. His ethnographic study examined a science teacher of gifted, African-American, middle school students and her integration of culturally relevant teaching to help students solve an issue with a liquor store located near their school and home community. Her students selected the problem in which they collaboratively wanted to solve and participated in activities such as: researching the problem, measuring the distance between the school and the liquor store, lobbying the state senate and creating a plan to relocate the liquor store. The teacher’s pedagogy consisted of: communicating with all school stakeholders, allowing students to work in groups, making real world connections for students, encouraging students to research problems and emphasizing social justice (Tate, 1995). Her teaching strategies and the work of her students led to the community changes of some liquor stores being cited or closed for violations and a resolution adoption so liquor could not be consumed within a certain distance of the school.
Another example of culturally relevant pedagogy in action refers to a study looking at a white, male, middle school, science teacher’s efforts to build cultural competence to effectively teach lower-socioeconomic students in a school with 59.6% African Americans (Milner, 2011). The teacher increased his own cultural competence because he built and sustained meaningful and authentic relationships with students, recognized multiple layers of students’ identities, discussed matters regarding race with them, and viewed teaching as a communal activity in which he needed to work collaboratively with other teachers to ensure students’ success (Milner, 2011). His development of cultural competence gave him the tools necessary to effectively implement culturally relevant pedagogy in his science classroom. He provided students with multiple opportunities for success, handled most classroom behavior issues within his classroom instead of sending students to administrators, expressed genuine concern for his students and a caring spirit, and attended students’ extracurricular activities and participated in some of the activities. Specifically regarding his science class, the teacher made real world connections for students by discussing shows on the Discovery Channel with them that related to science and told stories about himself personally so students could view him as a real person and not just a teacher who had nothing in common with them.

Rajagopal (2011) implemented culturally relevant teaching as a part of his CREATE Model that he used in his mathematics classes at a California high school. This led to 71% of his African-American algebra students scoring at or above the basic level on the CST and 42% of them scoring at the proficient level in 2009. These scores
symbolize the fact that his African-American students outperformed the state average for African Americans and white students. Similarly, his special education algebra classes had higher average scores on each quarterly algebra exam during the 2007-2008 school year than both the overall school and district averages (Rajagopal, 2011). His students achieved these remarkable goals through the implementation of culturally relevant pedagogy used in his classes. For example, Rajagopal (2011) described that in teaching math, he integrated hip hop music in his classes with his students and made analogies to cars, animals and sports. He went on to discuss that when teaching his algebra students how to isolate variables, he compared the variable X to a dog wanting his own neighborhood, the equals sign to a gate, and the number as trying to get across the gate to another neighborhood by changing its sign (Rajagopal, 2011). Additionally, Rajagopal suggested that across disciplines in English, for instance, teachers can engage students to learn literary elements like theme or tone by using song lyrics. He also explains that in order to build a culturally responsive classroom, teachers need to build relationships with their students by gaining an understanding of their students’ cultures. Educators can then use this information to integrate culture, background, prior knowledge, learning styles, etc. into the curriculum. They must then deliver their instruction in a personal way for students that provides them with frequent feedback and engages them often through questioning (Rajagopal, 2011).

Consistent with research by Tate (1995) and Milner (2011), Ladson-Billings (1995) depicts multiple characteristics of culturally relevant teachers. These teachers view themselves as part of the community and seek to give back to it. They believe all
students can achieve and they take responsibility for reaching each student. They build relationships that extend beyond the classroom. They create communal environments within the classroom by encouraging collaboration and group responsibility for success. They also make connections and build bridges for students to meet them where they are, in order to help them succeed academically (Ladson-Billings, 1995). For the purpose of this mixed methods research investigation, teachers’ preparedness for serving as a culturally relevant teacher of African-American girls in single-gender classroom environments will be studied based on the results of the research about culturally relevant pedagogy presented above.

**Theory of Variables**

Using the theoretical bases of brain-based learning as it applies to single-gender education and culturally relevant pedagogy, this study investigated whether the independent variables of teacher demographics, teacher preparation program and professional development significantly influenced the dependent variables of teacher preparedness and teacher implementation of single-gender instructional strategies and culturally relevant pedagogy. Additionally, the study explored whether factors outside of teacher demographics, teacher preparation program, and professional development of teachers impacted the dependent variables. Specifically, the research study considered the behaviors of administrators and their influence on teacher preparedness and teacher implementation.
Definition of Variables and Other Terms

**Culturally Relevant Pedagogy:** Instructional practices based on the constructs of academic achievement, cultural competence and cultural critique and activism that empower students intellectually, socially, emotionally, and politically by immersing them in their culture to connect their school experiences with their cultural realities to improve academic outcomes.

**Single-Gender Instructional Strategies:** Gender-inclusive instructional strategies used by teachers to improve the school experiences of African-American girls.

**Teacher Preparedness:** Teacher understanding of gender and cultural issues related to African American girls, in teaching and learning, and the demonstration of knowledge and use of gender-inclusive and culturally relevant teaching practices.

**Teacher Implementation:** Teacher utilization of gender-inclusive strategies and/or culturally relevant pedagogy during classroom instruction.

**Teacher Demographics:** Characteristics of teachers such as: gender, age, number of years teaching, ethnicity, childhood and educational background.

**Teacher Preparation Programs:** Alternate certification programs offered through school districts or states or certification/degree programs at colleges and universities that specialize in providing courses focused on education that prepare preservice teachers for future teaching careers.

**Single-Gender Classrooms:** School classrooms in which only female students in grades K-12th are admitted.
Co-educational Classrooms: School classrooms in which both male and female students in grades K-12th are admitted.

Administrator Behaviors: Actions displayed by administrators who supervise teachers of African American girls in single-gender classrooms that influence teacher preparation for and implementation of instructional strategies and pedagogy.

Professional Development: On the job training provided to teachers through readings, workshops, opportunities for reflection, conferences, etc. that encompasses research-based best practices in education.

Relationships among Variables

Research strongly suggests that teachers, especially those who teach in single-gender classrooms, need to understand gender differences in brain development and other aspects of brain research as it relates to brain-based learning. Moreover, these teachers need to understand best practices for educating minorities, especially African-American girls in single-gender classroom environments. However, research also notes that teacher preparation programs inadequately prepare teachers for working with students from culturally diverse student populations and fail to provide information concerning gender differences in learning (Maye & Day, 2012; Ferrara, 2005). Thus, overall teacher preparation program should have had no significant effect on teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy in this investigation, unless the teacher preparation program was highly specialized. For instance, a single-gender teacher preparation program for women or a teacher preparation program at a historically black college or university may better
prepare teachers for educating African-American girls in single-gender environments. Blasé and Blasé (2004) found that professional development serves to improve classroom instruction of teachers. Therefore in this study, a significant relationship should have existed between professional development and teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy. Moreover, Murphy et al. (2007) discusses that administrators in high performing schools demonstrate specific behaviors. This information implies that administrator behavior should have also had an influence on teacher preparedness for and implementation of best classroom practices in this study.

Research provides conflicting information about whether demographics may significantly impact teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy. Tate (1995), Milner (2011), Ladson-Billings (1995), and Rajagopal (2011) provide evidence that teachers of various races, childhood backgrounds, genders and ages have effectively implemented culturally relevant pedagogy. However, this research also describes how cultural incongruence can often occur in classrooms with white teachers of African-American students who have previously had little interaction with African Americans. A teacher must build cultural competence in order to effectively incorporate culturally relevant pedagogy. Thus in this research investigation, in a single-gender classroom with African-American girls, African Americans should have been more prepared for and implemented culturally relevant pedagogy, while female teachers should have possessed an advantage over males in incorporating gender-inclusive strategies for girls.
Figure 1 displays the relationship between the independent variables of professional development, administrators’ behaviors, teacher preparation programs, and demographics on the dependent variables of teacher implementation and teacher preparedness.

Figure 1. Relationships between Independent and Dependent Variables
Limitations of the Study

The study was limited because the results may only be generalizable to teachers who teach African-American girls in single-gender classrooms and administrators who lead in these environments. Another limitation of the study is that it was conducted in only a few schools due to the nature of the investigation. Also, students self-selected to participate in the single-gender academies without any other required characteristics. These girls may respond differently to instructional strategies and pedagogy than girls who prefer co-educational classrooms. Another limitation of the study was that participants may not respond honestly on the Teacher Survey.

Summary

Previous research discusses the educational implications of brain research and its applications to student learning (Caine & Caine, 1991). Differentiation of instruction based on student learning styles, multiple intelligences, and ELLs encompass a few areas in which brain-based learning deems appropriate (Gurian, 2002; Duman, 2010; Ghraibeh, 2012). Advocates of single-gender classrooms often utilize brain research and explanations of differences in the brain development of males and females to justify single-gender classrooms as a method to increase student achievement. Past research about single-gender education acknowledges historical disparities in single-gender education that sparked Title IX federal mandates. However, more recently these mandates have been adjusted to allow for single-gender classrooms to be utilized as a reform method to improve achievement of underserved student populations (Rycik,
Philadelphia, Pennsylvania constitutes one city in the United States that has successfully incorporated single-gender classroom environments for girls (Friend, 2007).

Implementing instructional strategies that appreciate cultural differences works hand-in-hand with gender inclusive instructional strategies to improve African-American girls’ achievement in single-gender classrooms. Tate (1995), Milner (2011), Ladson-Billings (1995), and Rajagopal (2011) all describe research about the effectiveness of culturally relevant pedagogy. This research investigation sought to determine whether the independent variables of demographics, teacher preparation programs, and professional development significantly impact the dependent variables of teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy. It was expected that professional development would have a significant impact on teacher preparedness and implementation, as well as administrator behavior. Furthermore, if demographics played a role, then African-American teachers and female teachers should have had an advantage over male teachers and those of ethnicities outside of African American. Teacher preparation program should have only significantly impacted teacher preparedness and implementation if the teacher attended a single-gender setting and/or a historically black college or university for their teacher preparation program.
CHAPTER IV
RESEARCH METHODOLOGY

Research Design

The research study investigated whether the independent variables of teacher demographics, teacher preparation programs, and professional development for teachers significantly related to the dependent variables of teacher preparedness and teacher implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms. Next, the study investigated whether factors outside of demographics, teacher preparation programs, and professional development for teachers impact teacher preparation and teacher implementation. Lastly, the study explored the behaviors of administrators that impact teacher preparedness and teacher implementation. A concurrent triangulation mixed methods approach was used in this research study. Creswell (2009) describes this approach as one in which quantitative and qualitative data collection takes place concurrently, and the researcher compares the two types of data to determine if there is convergence, differences or a combination of the two. Advantages of the concurrent triangulation approach include its familiarity to most researchers and the fact that it results in well-substantiated findings (Creswell, 2009). Quantitative data were collected via a survey provided to teachers who teach African-American girls in single-gender classrooms. The survey provided information about demographics, teacher preparation program attended and professional development
received. Qualitative information was collected from interviews with teachers in single
gender classrooms with African-American girls and administrators who supervised these
teachers. Teacher interviews provided insight on factors that impact teacher preparedness
for and implementation of single-gender instructional strategies and culturally relevant
pedagogy. Administrator interviews focused on the behaviors that administrators
practice to influence their teachers’ preparedness for and implementation of these
strategies. Qualitative data were collected through document analysis of teachers’ lesson
plans to determine whether their lesson plans coincided with described implementation of
the strategies.

Description of the Setting

The study was conducted at three inner-city schools in the southeastern United
States that implement single-gender classroom environments for girls. The researcher
sought to conduct research in four schools, but was not granted permission from one
school principal. The schools reside in a school district with approximately 100 schools.
Ninety-two percent of the schools in the district are Title I schools with over seventy
percent of the students being eligible for free and reduced lunch. The ethnic distribution
of the students in the district is displayed in Figure 2. Figure 2 displays the ethnicities in
percentages of students throughout the southeastern school district where the research
investigation took place.
To maintain anonymity of the participants and school confidentiality, the schools were labeled as Single-Gender Academy 1, Single-Gender Academy 2, Single-Gender Academy 3, and Single-Gender Academy 4. Each single-gender academy was a Title I public school in which students must self-select to attend. Single-Gender Academies 1, 2, and 3 consisted of 97% African-American students and no Caucasian students. Single-Gender Academy 4 aligned more consistently with the district percentage for African-American students with 78% and 11% Caucasian students. Each school possessed less than a 5% Hispanic student population. Single-Gender Academy 1 was a middle school in which only female students across the school district could attend. Single-Gender Academy 2 was a high school in which only female students across the school district could attend. Students who elected not to attend the Single-Gender Academies attended the coeducational middle or high school located in their designated school zone. Single-
Gender Academy 3 was a coeducational high school with different academy choices, in which the single-gender academy was an option for male and female students. Single-Gender Academy 4 was a co-educational K-8 charter school with single-gender classes for boys and girls.

The state in which the research investigation took place received a “Race to the Top” Grant to improve schools in the state. With this grant, the state was waived from No Child Left Behind but created a new accountability system. This accountability system provided each school in the state with a score out of 100 based on Achievement, Progress, and Closing the Achievement Gap. Schools were scored based on the new accountability system for the first time during the 2013-2014 school year. A comparison of the accountability scores for the four Single-Gender Academies and schools in the district with similar ethnic and socioeconomic makeup showed variation in school performance. The following figures reflect bar graphs of the accountability scores of each single-gender academy and two district schools comparable to each specified academy.

Figure 3 is a bar graph that compares accountability scores of Single-Gender Academy 1 with accountability scores of two other middle schools in the school district. One school was the companion single-gender middle school for males located in the same school zone as Single-Gender Academy 1. The other school was a co-educational middle school located in the same school zone as the female and male single-gender academies.
Figure 3: Single-Gender Academy 1 Accountability Comparison Scores

Figure 4 compares accountability scores of Single-Gender Academy 2 with accountability scores of two other high schools in the school district. One school was the companion single-gender high school for males located in the same school zone as Single-Gender Academy 2. The other school was a co-educational high school located in the same school zone as the female and male single-gender academies.

Figure 4: Single-Gender Academy 2 Accountability Comparison Scores
Figure 5 compares accountability scores of Single-Gender Academy 3 with two co-educational high schools located in the school district. The two co-educational high schools offered different types of academies within the school for student self-selection, but not single-gender academies.

Figure 5: Single-Gender Academy 3 Accountability Comparison Scores

Figure 6 compares accountability scores of Single-Gender Academy 4 with two co-educational charter schools in the school district that did not place students in single-gender classrooms.
Sampling Procedures

Purposeful sampling was used for this research investigation. Creswell (2007) noted that in purposeful sampling the researcher selects individuals and sites for the study based on their ability to purposefully inform an understanding of the research problem. Since this study sought to identify factors that affect the preparedness for and implementation of specific pedagogy and instructional strategies of teachers who work with African-American girls in single-gender classrooms, then the researcher purposefully selected schools that integrated single-gender classroom environments. Also, each school selected for this study was deemed appropriate due to its high percentage of African-American female students. Single-Gender Academies 1 and 2 also possessed comparable ethnic and socioeconomic composition to the co-educational middle and high school located in the same school zone. Single-Gender Academy 3 possessed similar ethnic and socioeconomic composition to other schools in the district that implemented academies within the school. Finally, Single-Gender Academy 4
maintained similar ethnic and socioeconomic composition to other co-educational charter schools in the school district.

**Working with Human Subjects**

Participation in this study was completely voluntary and followed the guidelines set forth by the Institutional Review Board at Clark Atlanta University. The researcher sought permission from the school districts’ Research and Evaluation for School Improvement office to conduct the investigation. The researcher also sought permission from the principals for their schools to be included in the study. Participants in the survey remained anonymous and confidentiality was ensured for participants who were interviewed with no identifying information of the individual participants included.

**Instrumentation**

According to Creswell (2007), verification is the first step in achieving validity of a research project. Verification occurred through use of validation strategies in this investigation. Particularly, the researcher used more than one data source to validate the study. Not only did the researcher conduct interviews with both administrators and teachers of African-American females in a single-gender environment, but the researcher also conducted a document analysis of teachers’ lesson plans and provided a survey to teachers.

The researcher developed a thirty question survey with four sections. The survey included the following sections: (a) Demographics, (b) Teacher Preparation Program, (c) Professional Development, and (d) Teacher Preparedness and Implementation. Questions 1-6 aligned with the independent variable of teacher demographics. Questions
7-14 were associated with the independent variable of Teacher Preparation Program. Questions 15-26 aligned with the independent variable of professional development. Questions 27-30 related to the dependent variables of teacher preparation and teacher implementation. The survey was administered electronically and was expected to take participants 10-15 minutes to complete.

In addition to the Teacher Survey, the researcher conducted teacher and administrator interviews. The purpose of the teacher interviews was to obtain their viewpoints about definitions, examples, and factors that related to teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy. The purpose of conducting interviews with administrators was to obtain their opinions about definitions, teacher practices and administrator behaviors that impact teacher preparedness and implementation. The researcher consulted with her Clark Atlanta University Dissertation Committee members for guidance in developing both the survey and interview questions.

Another form of qualitative data that was collected was documents. Creswell (2009) states that document collection can be advantageous because it enables a researcher to get participants’ exact words, is unobtrusive, provides written evidence, and shows data that participants have taken time to think about in order to create. For this research investigation, lesson plans of the teachers interviewed were collected and examined for content related to single-gender instructional strategies and culturally relevant pedagogy.
Participants/Location of Research

Surveys were sent out electronically to all teachers in each of the three school sites who teach or previously taught African-American girls in single-gender classrooms. The participants selected for interviews in the study included teachers who currently teach or previously taught African-American girls in single-gender classrooms and administrators who supervise(d) these teachers. One administrator from two of the school sites was interviewed yielding a total of two administrators. Three or more teachers from two of the school sites and one teacher from the third school site were interviewed providing nine teacher interviews.

Data Collection Procedures

The following procedures indicate the process used to conduct this mixed-method research investigation:

1. The researcher applied to Clark Atlanta University’s Institutional Review Board to gain approval to conduct the study.
2. The researcher sought approval through the school districts’ Office of Research and Evaluation for School Improvement.
3. The researcher provided an introductory letter with a description of the study via e-mail to principals requesting for their schools to be included in the study.
4. After securing permission from the principals the researcher sent the survey electronically to teachers at the school sites or allowed the principal to send the survey out to teachers.
5. The researcher visited the school sites to interview teachers and administrators.
6. Teachers were asked to e-mail lesson plans after the interviews. For one school site, the researcher accessed teachers’ lesson plans from the school’s on-line site for uploading documents.

**Statistical Application/Data Analysis**

The quantitative data collected in this research study was analyzed using the Statistical Package for the Social Sciences (SPSS). Pearson’s Correlations were used to analyze quantitative research questions 1-2 and 5-16 based on Teacher Survey responses because Pearson’s Correlations show relationships between variables. Questions 1-2 sought to determine factors that impacted the dependent variables. Questions 5-16 sought to determine relationships between the independent and dependent variables in the study.

To analyze the qualitative data and answer research questions 1-4, the researcher tape-recorded and transcribed all teacher and administrator interviews. The researcher then coded the transcripts by identifying common themes that appeared throughout the transcripts. Additionally, the researcher conducted a document analysis on teachers’ lesson plans by coding and identifying common themes found in the lesson plans as well.

**Summary**

This research investigation determined whether the independent variables of teacher demographics, teacher preparation programs, and professional development for teachers significantly related to the dependent variables of teacher preparedness for and teacher implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms. It also investigated
whether other factors impact teacher preparation and teacher implementation of these strategies. Finally, the study explored the behaviors of administrators that impact teacher preparedness and teacher implementation. A concurrent triangulation mixed-methods approach was used to answer the following research questions:

RQ1: What factors impact teacher preparedness for and implementation of single-gender instructional strategies with African-American girls in single-gender classrooms (teacher demographics, teacher preparation program, administrator behavior, other)?

RQ2: What factors impact teacher preparedness for and implementation of culturally relevant pedagogy with African-American girls in single-gender classrooms (teacher demographics, teacher preparation program, administrator behavior, other)?

RQ3: What administrative behaviors influence teacher preparedness for and implementation of single-gender instructional strategies?

RQ4: What administrative behaviors influence teacher preparedness for and implementation of culturally relevant pedagogy?

RQ5: Is there a significant relationship between teacher demographics and teacher preparedness for implementing single-gender instructional strategies?

RQ6: Is there a significant relationship between teacher demographics and teacher implementation of single-gender instructional strategies?
RQ7: Is there a significant relationship between teacher preparation program and teacher preparedness for implementing single-gender instructional strategies?

RQ8: Is there a significant relationship between teacher preparation program and teacher implementation of single-gender instructional strategies?

RQ9: Is there a significant relationship between professional development for teachers and teacher preparedness for implementing single-gender instructional strategies?

RQ10: Is there a significant relationship between professional development for teachers and teacher implementation of single-gender instructional strategies?

RQ11: Is there a significant relationship between teacher demographics and teacher preparedness for implementing culturally relevant pedagogy?

RQ12: Is there a significant relationship between teacher demographics and teacher implementation of culturally relevant pedagogy?

RQ13: Is there a significant relationship between teacher preparation program and teacher preparedness for implementing culturally relevant pedagogy?

RQ14: Is there a significant relationship between teacher preparation program and teacher implementation of culturally relevant pedagogy?
RQ15: Is there a significant relationship between professional development for teachers and teacher preparedness for implementing culturally relevant pedagogy?

RQ16: Is there a significant relationship between professional development for teachers and teacher implementation of culturally relevant pedagogy?

Teachers at three different school sites in the southeastern United States, who teach or previously taught African-American girls in single-gender classrooms, were provided with surveys to complete and both teachers and administrators at these sites were interviewed. Moreover, a document analysis of teachers’ lesson plans was conducted by the researcher. Integrating multiple sources of data collection into the study helped to validate it. The schools remained confidential and the participants anonymous.

Pearson’s Correlations and tests of regression were used to analyze the survey responses and transcribed interviews and lesson were coded to identify common themes.
CHAPTER V
DATA ANALYSIS

The purpose of this mixed methodological study was to determine factors that impact teacher preparedness for and implementation of culturally relevant pedagogy and single-gender instructional strategies. Specifically, the study investigated whether the independent variables of teacher demographics, teacher preparation program, professional development and administrators’ behaviors impact and/or maintain a relationship of significance with the dependent variables of teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American females in single-gender classrooms. To determine conclusive findings, this chapter describes statistical data derived from a survey administered to past and current teachers of African-American girls in single-gender classrooms. It also provides an analysis of interviews conducted with administrators and teachers, as well as lesson plans of teachers who teach African-American girls in single-gender classrooms.

Quantitative Data Analysis

Analysis of Descriptive Data

The demographic data of the teachers who participated in the study were analyzed using descriptive statistics. A total of 20 respondents participated in the quantitative portion of the study. An analysis of the results reveals that the majority of the respondents could be identified in the following way: female (n = 13), 11-20 years of
teaching experience ($n = 8$), less than one year ($n = 7$) or three or more years ($n = 7$) of teaching experience in a single-gender classroom setting with girls, African American ($n = 17$), 31-40 years old ($n = 10$) and grew up in a suburban area as a child ($n = 9$).

In regards to the study of teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms, there was a total of 20 respondents to the inquiry about gender. Table 2 displays that of the 20 respondents, 7 were male and 13 were female.

Table 2

*Gender of Participants*

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1</td>
<td>7</td>
<td>35.0</td>
<td>35.0</td>
</tr>
<tr>
<td>Female</td>
<td>2</td>
<td>13</td>
<td>65.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

In regards to the study of teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms, there was a total of twenty respondents to the inquiry about years of teaching experience. Table 3 displays that of the 20 respondents, 3 possessed 0-5 years, 6 possessed 6-10 years, 8 possessed 11-20 years, and 3 possessed 21+ years of teaching experience.
Table 3

*Years of Teaching Experience of Participants*

<table>
<thead>
<tr>
<th>Participants' Years of Teaching Experience</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 5 years</td>
<td>1</td>
<td>3</td>
<td>15.0</td>
<td>15.0</td>
</tr>
<tr>
<td>6 - 10 years</td>
<td>2</td>
<td>6</td>
<td>30.0</td>
<td>45.0</td>
</tr>
<tr>
<td>11 - 20 years</td>
<td>3</td>
<td>8</td>
<td>40.0</td>
<td>85.0</td>
</tr>
<tr>
<td>21+ years</td>
<td>4</td>
<td>3</td>
<td>15.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

In regards to the study of teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms, there was a total of 20 respondents to the inquiry about years of teaching experience in a single-gender classroom setting with girls. Table 4 displays that of the 20 respondents, 7 possessed less than one year, 6 possessed 1-2 years, and 3 possessed three or more years of teaching experience in a single-gender classroom setting with girls.

In regards to the study of teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms, there was a total of 20 respondents to the inquiry about ethnicity. Table 5 displays that of the 20 respondents, 17 identified themselves as African American, 2 identified themselves as Caucasian, none identified themselves as Hispanic, none identified themselves as Biracial, 1 identified him/herself as Asian, and none identified themselves as Other.
Table 4

*Participants’ Years of Teaching Experience in a Single-Gender Classroom with Girls*

<table>
<thead>
<tr>
<th>Years of Experience in Single-Gender Classroom</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year</td>
<td>1</td>
<td>7</td>
<td>35.0</td>
<td>35.0</td>
</tr>
<tr>
<td>1-2 years</td>
<td>2</td>
<td>6</td>
<td>30.0</td>
<td>65.0</td>
</tr>
<tr>
<td>3 or more years</td>
<td>3</td>
<td>7</td>
<td>35.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 5

*Ethnicity of Participants*

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>1</td>
<td>17</td>
<td>85.0</td>
<td>85.0</td>
</tr>
<tr>
<td>Caucasian</td>
<td>2</td>
<td>2</td>
<td>10.0</td>
<td>95.0</td>
</tr>
<tr>
<td>Asian</td>
<td>5</td>
<td>1</td>
<td>5.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

In regards to the study of teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms, there was a total of 20 respondents to the inquiry about ethnicity. Table 6 displays that of the 20 respondents, 3 were 20-30 years of age, 10 were 31-40 years of age, 3 were 41-50 years of age, and 4 were 51+ years of age.
Table 6

*Age Range of Participants*

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 - 30</td>
<td>1</td>
<td>3</td>
<td>15.0</td>
<td>15.0</td>
</tr>
<tr>
<td>31 - 40</td>
<td>2</td>
<td>10</td>
<td>50.0</td>
<td>65.0</td>
</tr>
<tr>
<td>41 - 50</td>
<td>3</td>
<td>3</td>
<td>15.0</td>
<td>80.0</td>
</tr>
<tr>
<td>51+</td>
<td>4</td>
<td>4</td>
<td>20.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

In regards to the study of teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms, there was a total of 20 respondents to the inquiry about childhood city background. Table 7 displays that of the 20 respondents, 3 grew up in a rural area, 8 grew up in an urban city, and 9 grew up in a suburban area.

Table 7

*Childhood City Background of Participants*

<table>
<thead>
<tr>
<th>City Background</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>1</td>
<td>3</td>
<td>15.0</td>
<td>15.0</td>
</tr>
<tr>
<td>Urban</td>
<td>2</td>
<td>8</td>
<td>40.0</td>
<td>55.0</td>
</tr>
<tr>
<td>Suburban</td>
<td>3</td>
<td>9</td>
<td>45.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
The demographic data related to teacher preparation program attended by the teachers who participated in the study were also analyzed using descriptive statistics. An analysis of the results reveals that the majority of the teacher preparation programs attended by the respondents could be identified in the following ways: public institution (n = 11), co-educational (n = 1), and non-historically black college or university (n = 17).

In regards to the study of teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms, there was a total of 20 respondents to the inquiry about setting of undergraduate teacher preparation program. Table 8 displays that of the 20 respondents, 11 attended a public institution, 2 attended a private institution, and 7 attended an alternative education program.

Table 8

<table>
<thead>
<tr>
<th>Teacher Preparation Program Attended</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Institution</td>
<td>1</td>
<td>11</td>
<td>55.0</td>
<td>55.0</td>
</tr>
<tr>
<td>Private Institution</td>
<td>2</td>
<td>2</td>
<td>10.0</td>
<td>65.0</td>
</tr>
<tr>
<td>Alternative Preparation Program</td>
<td>3</td>
<td>7</td>
<td>35.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
In regards to the study of teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms, there was a total of 20 respondents to the inquiry about gender composition of undergraduate teacher preparation program. Table 9 displays that of the 20 respondents, 19 attended a co-educational undergraduate teacher preparation program/alternative teacher preparation program and 1 attended a single-gender undergraduate teacher preparation program/alternative teacher preparation program.

Table 9

*Gender Composition of Teacher Preparation Program of Participants*

<table>
<thead>
<tr>
<th>Gender Composition of Preparation Program</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-Educational</td>
<td>1</td>
<td>19</td>
<td>95.0</td>
<td>95.0</td>
</tr>
<tr>
<td>Single-Gender</td>
<td>2</td>
<td>1</td>
<td>5.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

In regards to the study of teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms, there was a total of 20 respondents to the inquiry about type of institution of undergraduate teacher preparation program/alternative teacher preparation program. Table 10 displays that of the 20 respondents, 3 attended a Historically Black College or University (HBCU) and 17 attended a non-HBCU for their undergraduate teacher preparation program/alternative teacher preparation program.
Table 10  

*Type of Institution of Teacher Preparation Program of Participants*

<table>
<thead>
<tr>
<th>Type of Institution</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBCU</td>
<td>1</td>
<td>3</td>
<td>15.0</td>
<td>15.0</td>
</tr>
<tr>
<td>Non-HBCU</td>
<td>2</td>
<td>17</td>
<td>85.0</td>
<td>85.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

**Analysis of Regression Data**

A test of regression was used to determine the factors that impact teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms. Data that relate to the research questions and the instrument used to determine impact are presented in tables. The outcomes are discussed after research questions related to impact are restated.

RQ1: What factors impact teacher preparedness for and implementation of single-gender instructional strategies with African-American girls in single-gender classrooms (teacher demographics, teacher preparation program, administrator behavior, other)?

According to the regression analysis of data, two factors significantly impact teacher preparedness to implement single-gender instructional strategies: professional development on single-gender instructional strategies and professional development
through reflection. Table 11 shows that impact on teacher preparedness to implement single-gender instructional strategies at a .05 level of significance.

Table 11

*Regression: Impact on Teacher Preparedness to Implement Single-Gender Instructional Strategies*

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>R</td>
</tr>
<tr>
<td>1</td>
<td>.678(a)</td>
</tr>
<tr>
<td>2</td>
<td>.762(b)</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ProfDevSingleGen
b. Predictors: (Constant, ProfDevSingleGen, ProfDevReflect)

<table>
<thead>
<tr>
<th>Coefficientsa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unstandardized</td>
</tr>
<tr>
<td>Coefficients</td>
</tr>
<tr>
<td>Model</td>
</tr>
<tr>
<td>1 (Constant</td>
</tr>
<tr>
<td>ProfDevSingle Gen</td>
</tr>
<tr>
<td>2 Constant)</td>
</tr>
<tr>
<td>ProfDevSingleGen</td>
</tr>
<tr>
<td>ProfDevReflect</td>
</tr>
</tbody>
</table>
According to the regression analysis of data, one factor significantly impacts teacher implementation of single-gender instructional strategies. Table 12 shows that professional development on single-gender instructional strategies impacts teacher implementation of single-gender instructional strategies at a .01 level of significance.

**RQ2:** What factors impact teacher preparedness for and implementation of culturally relevant pedagogy with African-American girls in single-gender classrooms (teacher demographics, teacher preparation program, administrator behavior, other)?
Table 12

Regression: Impact on Teacher Implementation of Single-Gender Strategies

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Std. Error of the Estimate</td>
</tr>
<tr>
<td>Model</td>
<td>R</td>
</tr>
<tr>
<td>-------</td>
<td>---</td>
</tr>
<tr>
<td>1</td>
<td>.686</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ProfDevSingleGen

<table>
<thead>
<tr>
<th>Coefficientsa</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>-------</td>
<td>---</td>
<td>----------</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>1.860</td>
</tr>
<tr>
<td>ProfDevSingleGen</td>
<td>.332</td>
<td>.083</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Implement single-gender instruction

<table>
<thead>
<tr>
<th>Excluded Variablesb</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Beta In</td>
</tr>
<tr>
<td>-------</td>
<td>---------</td>
</tr>
<tr>
<td>1</td>
<td>TeachPrelearning</td>
</tr>
<tr>
<td>GeneralProfDev</td>
<td>.120</td>
</tr>
<tr>
<td>ProfDevCulRelPed</td>
<td>.038</td>
</tr>
<tr>
<td>ProfDevReflect</td>
<td>.235</td>
</tr>
</tbody>
</table>

a. Predictors in the Model: (Constant), ProfDevSingleGen

b. Dependent Variable: Implement single-gender instruction
According to the regression analysis of data, one factor significantly impacts teacher preparedness to implement culturally relevant pedagogy. Table 13 shows that professional development on culturally relevant pedagogy impacts teacher preparedness to implement culturally relevant pedagogy at a .05 level of significance.

Table 13

Regression: Impact on Teacher Preparedness to Implement Culturally Relevant Pedagogy

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>R Square</td>
</tr>
<tr>
<td>1</td>
<td>.555(^a)</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ProfDevCulRelPed

<table>
<thead>
<tr>
<th>Coefficients(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unstandardized Coefficients</td>
</tr>
<tr>
<td>Model</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Prepared to implement culturally relevant pedagogy
Table 13 (continued)

<table>
<thead>
<tr>
<th>Excluded Variables</th>
<th>Beta In</th>
<th>t</th>
<th>Sig</th>
<th>Correlation</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>TeachPreplearning</td>
<td>.302a</td>
<td>1.279</td>
<td>.218</td>
<td>.296</td>
<td>.667</td>
</tr>
<tr>
<td>GeneralProfDev</td>
<td>-.240a</td>
<td>-1.029</td>
<td>.318</td>
<td>-.242</td>
<td>.704</td>
</tr>
<tr>
<td>ProfDevSingleGen</td>
<td>-.165a</td>
<td>-.713</td>
<td>.485</td>
<td>-.170</td>
<td>.739</td>
</tr>
<tr>
<td>ProfDevReflect</td>
<td>.306a</td>
<td>1.197</td>
<td>.248</td>
<td>.279</td>
<td>.576</td>
</tr>
</tbody>
</table>

a. Predictors in the Model: (Constant), ProfDevCulRelPed
b. Dependent Variable: Prepared to implement culturally relevant pedagogy

According to the regression analysis of data, one factor significantly impacts teacher implementation of culturally relevant pedagogy. Table 14 shows that professional development on culturally relevant pedagogy impacts teacher implementation of culturally relevant pedagogy at a .05 level of significance.

Table 14

Regression: Impact on Implementation of Culturally Relevant Pedagogy

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Adjusted R</th>
<th>Std. Error of the R Square</th>
<th>R Square</th>
<th>Change in R Square</th>
<th>Change in F</th>
<th>df1</th>
<th>df2</th>
<th>Change in Sig. F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.572a</td>
<td>.327</td>
<td>.290</td>
<td>1.525</td>
<td>.327</td>
<td>8.752</td>
<td>1</td>
<td>18</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ProfDevCulRelPed
Table 14 (continued)

<table>
<thead>
<tr>
<th>Model</th>
<th>(Constant)</th>
<th>.748</th>
<th>.1.248</th>
<th>.599</th>
<th>.557</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ProfDevCulRelPed</td>
<td>.439</td>
<td>.148</td>
<td>.572</td>
<td>2.958</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Implement culturally relevant pedagogy

Excluded Variables

<table>
<thead>
<tr>
<th>Model</th>
<th>TeachPreplearning</th>
<th>.139</th>
<th>.575</th>
<th>.573</th>
<th>.138</th>
<th>.667</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GeneralProfDev</td>
<td>-.225</td>
<td>-.977</td>
<td>.342</td>
<td>-.231</td>
<td>.704</td>
</tr>
<tr>
<td></td>
<td>ProfDevSingleGen</td>
<td>-.033</td>
<td>-.142</td>
<td>.889</td>
<td>-.034</td>
<td>.739</td>
</tr>
<tr>
<td></td>
<td>ProfDevReflect</td>
<td>.151</td>
<td>.582</td>
<td>.568</td>
<td>.140</td>
<td>.576</td>
</tr>
</tbody>
</table>

a. Predictors in the Model: (Constant), ProfDevCulRelPed

b. Dependent Variable: Implement culturally relevant pedagogy

Analysis of Correlation Data

Data that relate to the research questions and the instrument used to determine statistical significance are presented in tables. The data are used to support or reject the relationship between the independent variables of teacher demographics, teacher preparation program, and professional development and the dependent variables of teacher preparedness and teacher implementation of single-gender instructional strategies and culturally relevant pedagogy. The product moment correlation coefficient or Pearson
was used to analyze the data by measuring the degrees of association between the variables. The outcomes are discussed after each related research question is restated.

**Teacher Demographics and Single-Gender Instructional Strategies**

RQ5: Is there a significant relationship between teacher demographics and teacher preparedness for implementing single-gender instructional strategies?

An analysis of data reveals that there is no significant relationship between teacher demographics and preparedness for implementing single-gender instructional strategies. The responses on the survey instrument related to the questions about teacher demographics (years of teaching, years of teaching in a single-gender classroom with girls, ethnicity, age, and childhood city background) all demonstrated that teacher demographics shows no significant relationship according to the observed probability values. Table 15 reveals that the observed probability value for years teaching was greater than .05, suggesting no significant relationship between years teaching and preparedness for implementing single-gender instructional strategies.

Table 16 reveals that the observed probability value for years of teaching in a single-gender classroom with girls was greater than .05, suggesting no significant relationship between years of teaching in a single-gender classroom with girls and preparedness for implementing single-gender instructional strategies.
Table 15

**Correlations: Years Teaching and Preparedness to Implement Single-Gender Instructional Strategies**

<table>
<thead>
<tr>
<th></th>
<th>Years Teaching</th>
<th>Preparedness to Implement Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pearson Correlation</strong></td>
<td>-.054</td>
<td>1</td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td>.821</td>
<td></td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 16

**Correlations: Years of Teaching in a Single-Gender Classroom with Girls and Preparedness to Implement Single-Gender Instructional Strategies**

<table>
<thead>
<tr>
<th></th>
<th>Years of Teaching in a Single-Gender Classroom with Girls</th>
<th>Preparedness to Implement Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pearson Correlation</strong></td>
<td>.183</td>
<td>1</td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td>.440</td>
<td></td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 17 reveals that the observed probability value for ethnicity was greater than .05, suggesting no significant relationship between ethnicity and preparedness for implementing single-gender instructional strategies.
Table 17

*Correlations: Ethnicity and Preparedness to Implement Single-Gender Instructional Strategies*

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.348</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.132</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 18 reveals that the observed probability value for age was greater than .05, suggesting no significant relationship between age and preparedness for implementing single-gender instructional strategies.

Table 18

*Correlations: Age and Preparedness to Implement Single-Gender Instructional Strategies*

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.063</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.792</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>
Table 19 reveals that the observed probability value for childhood city background was greater than .05, suggesting no significant relationship between childhood city background and preparedness for implementing single-gender instructional strategies.

Table 19

**Correlations: Childhood City Background and Preparedness to Implement Single-Gender Instructional Strategies**

<table>
<thead>
<tr>
<th>Childhood City Background</th>
<th>Preparedness to Implement Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.011</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.964</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>

RQ6: Is there a significant relationship between teacher demographics and teacher implementation of single-gender instructional strategies?

An analysis of data reveals that there is no significant relationship between teacher demographics and implementation of single-gender instructional strategies. The responses on the survey instrument related to the questions about teacher demographics (years of teaching, years of teaching in a single-gender classroom with girls, ethnicity, age, and childhood city background) all demonstrated that teacher demographics show no significant relationship according to the observed probability values. The observed probability value for years teaching was greater than .05, suggesting no significant
relationship between years teaching and implementation of single-gender instructional strategies (see Table 20).

Table 20

*Correlations: Years Teaching and Implementation of Single-Gender Instructional Strategies*

<table>
<thead>
<tr>
<th></th>
<th>Years Teaching</th>
<th>Implementation of Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.026</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.914</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 21 reveals that the observed probability value for years of teaching in a single-gender classroom with girls was greater than .05, suggesting no significant relationship between years of teaching in a single-gender classroom with girls and implementation of single-gender instructional strategies.

Table 22 reveals that the observed probability value for ethnicity was greater than .05, suggesting no significant relationship between ethnicity and implementation of single-gender instructional strategies.

Table 23 reveals that the observed probability value for age was greater than .05, suggesting no significant relationship between age and implementation of single-gender instructional strategies.
Table 21

*Correlations: Years of Teaching in a Single-Gender Classroom with Girls and Implementation of Single-Gender Instructional Strategies*

<table>
<thead>
<tr>
<th>Years of Teaching in a Single-Gender Classroom with Girls</th>
<th>Implementation of Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>-.038</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.874</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 22

*Correlations: Ethnicity and Implementation of Single-Gender Instructional Strategies*

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Implementation of Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.123</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.605</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>
Table 23

*Correlations: Age and Implementation of Single-Gender Instructional Strategies*

<table>
<thead>
<tr>
<th></th>
<th>Implementation of Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.327</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.159</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 24 reveals that the observed probability value for childhood city background was greater than .05, suggesting no significant relationship between childhood city background and implementation of single-gender instructional strategies.

Table 24

*Correlations: Childhood City Background and Implementation of Single-Gender Instructional Strategies*

<table>
<thead>
<tr>
<th></th>
<th>Implementation of Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Childhood City Background</td>
<td>.011</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.964</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>
**Teacher Preparation Program Single-Gender Instructional Strategies**

RQ7: Is there a significant relationship between teacher preparation program and teacher preparedness for implementing single-gender instructional strategies?

An analysis of data reveals that there is a significant relationship between teacher preparation program and preparedness for implementing single-gender instructional strategies. The responses on the survey instrument related to the questions about teacher preparation program demonstrated that teacher preparation program shows a significant relationship according to the observed probability values. Table 25 reveals that the observed probability value for teacher preparation program was less than .01, suggesting a significant relationship between teacher preparation program and preparedness for implementing single-gender instructional strategies.

Table 25

*Correlations: Teacher Preparation Program and Preparedness to Implement Single-Gender Instructional Strategies*

<table>
<thead>
<tr>
<th></th>
<th>Teacher Preparation Program</th>
<th>Preparedness to Implement Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.586</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.007</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

RQ8: Is there a significant relationship between teacher preparation program and teacher implementation of single-gender instructional strategies?
An analysis of data reveals that there is no significant relationship between teacher preparation program and implementation of single-gender instructional strategies. The responses on the survey instrument related to the questions about teacher preparation program demonstrated that teacher preparation program shows no significant relationship according to the observed probability values. Table 26 reveals that the observed probability value for teacher preparation program was greater than .05, suggesting no significant relationship between teacher preparation program and preparedness for implementing single-gender instructional strategies.

Table 26

*Correlations: Teacher Preparation Program and Implementation of Single-Gender Instructional Strategies*

<table>
<thead>
<tr>
<th></th>
<th>Childhood City Implementation of Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.308</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.186</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>

**Professional Development and Single-Gender Instructional Strategies**

RQ9: Is there a significant relationship between professional development for teachers and teacher preparedness for implementing single-gender instructional strategies?

An analysis of data reveals that there is a significant relationship between professional development and preparedness for implementing single-gender instructional
strategies. The responses on the survey instrument related to the questions about professional development demonstrated that professional development shows a significant relationship according to the observed probability values. Table 27 reveals that the observed probability value for general professional development was less than .05, suggesting a significant relationship between general professional development and preparedness for implementing single-gender instructional strategies.

Table 27

**Correlations: General Professional Development and Preparedness to Implement Single-Gender Instructional Strategies**

<table>
<thead>
<tr>
<th></th>
<th>General Professional Development</th>
<th>Preparedness to Implement Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.473</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.035</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 28 reveals that the observed probability value for professional development on single-gender instructional strategies was less than .01, suggesting a significant relationship between professional development on single-gender instructional strategies and preparedness for implementing single-gender instructional strategies.
Table 28

*Correlations: Professional Development on Single-Gender Instructional Strategies and Preparedness to Implement Single-Gender Instructional Strategies*

<table>
<thead>
<tr>
<th>Professional Development on Single-Gender Instructional Strategies</th>
<th>Preparedness to Implement Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.678</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.001</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 29 reveals that the observed probability value for professional development on culturally relevant pedagogy was less than .05, suggesting a significant relationship between professional development on culturally relevant pedagogy and preparedness for implementing single-gender instructional strategies.

Table 29

*Correlations: Professional Development on Culturally Relevant Pedagogy and Preparedness to Implement Single-Gender Instructional Strategies*

<table>
<thead>
<tr>
<th>Professional Development on Culturally Relevant Pedagogy</th>
<th>Preparedness to Implement Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.489</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.029</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>
Table 30 reveals that the observed probability value for professional development through reflection was less than .01, suggesting a significant relationship between professional development through reflection and preparedness for implementing single-gender instructional strategies.

Table 30

*Correlations: Professional Development through Reflection and Preparedness to Implement Single-Gender Instructional Strategies*

<table>
<thead>
<tr>
<th></th>
<th>Professional Development through Reflection</th>
<th>Preparedness to Implement Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.632</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.003</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

RQ10: Is there a significant relationship between professional development for teachers and teacher implementation of single-gender instructional strategies?

An analysis of data reveals that there is a significant relationship between professional development and implementation of single-gender instructional strategies. The responses on the survey instrument related to the questions about professional development demonstrated that professional development shows a significant relationship according to the observed probability values. The observed probability value for general professional development was less than .05, suggesting a significant relationship between
general professional development and implementation of single-gender instructional strategies (see Table 31).

Table 31

*Correlations: General Professional Development and Implementation of Single-Gender Instructional Strategies*

<table>
<thead>
<tr>
<th>General Professional Development</th>
<th>Implementation of Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.477</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.033</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 32 reveals that the observed probability value for professional development on single-gender instructional strategies was less than .01, suggesting a significant relationship between professional development on single-gender instructional strategies and implementation of single-gender instructional strategies.

Table 33 reveals that the observed probability value for professional development on culturally relevant pedagogy was greater than .05, suggesting no significant relationship between professional development on culturally relevant pedagogy and implementation of single-gender instructional strategies.

Table 34 reveals that the observed probability value for professional development through reflection was less than .05, suggesting a significant relationship between professional development through reflection and implementation of single-gender instructional strategies.
Table 32

Correlations: Professional Development on Single-Gender Instructional Strategies and Implementation of Single-Gender Instructional Strategies

<table>
<thead>
<tr>
<th></th>
<th>Professional Development on Single-Gender Instructional Strategies</th>
<th>Implementation of Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.686</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 33

Correlations: Professional Development on Culturally Relevant Pedagogy and Implementation of Single-Gender Instructional Strategies

<table>
<thead>
<tr>
<th></th>
<th>Professional Development on Culturally Relevant Pedagogy</th>
<th>Implementation of Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.379</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.099</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>
Table 34

Correlations: Professional Development through Reflection and Implementation of Single-Gender Instructional Strategies

<table>
<thead>
<tr>
<th>Professional Development through Reflection</th>
<th>Implementation of Single-Gender Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.511</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.021</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>

Teacher Demographics and Culturally Relevant Pedagogy

RQ11: Is there a significant relationship between teacher demographics and teacher preparedness for implementing culturally relevant pedagogy?

An analysis of data reveals that there is no significant relationship between teacher demographics and preparedness for implementing culturally relevant pedagogy. The responses on the survey instrument related to the questions about teacher demographics (years of teaching, years of teaching in a single-gender classroom with girls, ethnicity, age, and childhood city background) all demonstrated that teacher demographics shows no significant relationship according to the observed probability values. Table 35 reveals that the observed probability value for years teaching was greater than .05, suggesting no significant relationship between years teaching and preparedness for implementing culturally relevant pedagogy.
Table 35

*Correlations: Years Teaching and Preparedness to Implement Culturally Relevant Pedagogy*

<table>
<thead>
<tr>
<th>Pearson Correlation</th>
<th>Preparedness to Implement Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>-.386</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.093</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 36 reveals that the observed probability value for years of teaching in a single-gender classroom with girls was greater than .05, suggesting no significant relationship between years of teaching in a single-gender classroom with girls and preparedness for implementing culturally relevant pedagogy.

Table 36

*Correlations: Years of Teaching in a Single-Gender Classroom with Girls and Preparedness to Implement Culturally Relevant Pedagogy*

<table>
<thead>
<tr>
<th>Pearson Correlation</th>
<th>Preparedness to Implement Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>-.091</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.702</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>
Table 37 reveals that the observed probability value for ethnicity was greater than .05, suggesting no significant relationship between ethnicity and preparedness for implementing culturally relevant pedagogy.

Table 37

_Correlations: Ethnicity and Preparedness to Implement Culturally Relevant Pedagogy_

<table>
<thead>
<tr>
<th>Preparedness to Implement</th>
<th>Ethnicity</th>
<th>Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.263</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.262</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 38 reveals that the observed probability value for age was greater than .05, suggesting no significant relationship between age and preparedness for implementing culturally relevant pedagogy.

Table 38

_Correlations: Age and Preparedness to Implement Culturally Relevant Pedagogy_

<table>
<thead>
<tr>
<th>Preparedness to Implement</th>
<th>Age</th>
<th>Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>-.174</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.464</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>
Table 39 reveals that the observed probability value for childhood city background was greater than .05, suggesting no significant relationship between childhood city background and preparedness for implementing culturally relevant pedagogy.

Table 39

*Correlations: Childhood City Background and Preparedness to Implement Culturally Relevant Pedagogy*

<table>
<thead>
<tr>
<th></th>
<th>Childhood City Background</th>
<th>Preparedness to Implement Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>0.011</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.964</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

RQ12: Is there a significant relationship between teacher demographics and teacher implementation of culturally relevant pedagogy?

An analysis of data reveals that there is no significant relationship between teacher demographics and implementation of culturally relevant pedagogy. The responses on the survey instrument related to the questions about teacher demographics (years of teaching, years of teaching in a single-gender classroom with girls, ethnicity, age, and childhood city background) all demonstrated that teacher demographics shows no significant relationship according to the observed probability values.
Table 40 reveals that the observed probability value for years teaching was greater than .05, suggesting no significant relationship between years teaching and implementation of culturally relevant pedagogy.

Table 40

*Correlations: Years Teaching and Implementation of Culturally Relevant Pedagogy*

<table>
<thead>
<tr>
<th></th>
<th>Implementation of Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Years Teaching</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-.410</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.073</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>20</td>
</tr>
</tbody>
</table>

Table 41 reveals that the observed probability value for years of teaching in a single-gender classroom with girls was greater than .05, suggesting no significant relationship between years of teaching in a single-gender classroom with girls and implementation of culturally relevant pedagogy.

Table 42 reveals that the observed probability value for ethnicity was greater than .05, suggesting no significant relationship between ethnicity and implementation of culturally relevant pedagogy.

Table 43 reveals that the observed probability value for age was greater than .05, suggesting no significant relationship between age and implementation of culturally relevant pedagogy.
Table 41

*Correlations: Years of Teaching in a Single-Gender Classroom with Girls and Implementation of Culturally Relevant Pedagogy*

<table>
<thead>
<tr>
<th>Years of Teaching in a Single-Gender Classroom with Girls</th>
<th>Implementation of Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.271</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.248</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 42

*Correlations: Ethnicity and Implementation of Culturally Relevant Pedagogy*

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Implementation of Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.164</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.490</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>
### Table 43

**Correlations: Age and Implementation Culturally Relevant Pedagogy**

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Implementation of Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>-0.129</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.589</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 44 reveals that the observed probability value for childhood city background was greater than .05, suggesting no significant relationship between childhood city background and implementation of culturally relevant pedagogy.

### Table 44

**Correlations: Childhood City Background and Implementation of Culturally Relevant Pedagogy**

<table>
<thead>
<tr>
<th></th>
<th>Childhood City Background</th>
<th>Implementation of Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>-0.191</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.421</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

**Teacher Preparation Program and Culturally Relevant Pedagogy**

**RQ13:** Is there a significant relationship between teacher preparation program and teacher preparedness for implementing culturally relevant pedagogy?
An analysis of data reveals that there is a significant relationship between teacher preparation program and preparedness for implementing culturally relevant pedagogy. The responses on the survey instrument related to the questions about teacher preparation program demonstrated that teacher preparation program shows a significant relationship according to the observed probability values. Table 45 reveals that the observed probability value for teacher preparation program was less than .05, suggesting a significant relationship between teacher preparation program and preparedness for implementing culturally relevant pedagogy.

Table 45

Correlations: Teacher Preparation Program and Preparedness to Implement Culturally Relevant Pedagogy

<table>
<thead>
<tr>
<th>Teacher Preparation Program</th>
<th>Preparedness to Implement Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.522</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.018</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>

RQ14: Is there a significant relationship between teacher preparation program and teacher implementation of culturally relevant pedagogy?

An analysis of data reveals that there is no significant relationship between teacher preparation program and implementation of culturally relevant pedagogy. The responses on the survey instrument related to the questions about teacher preparation program demonstrated that teacher preparation program shows no significant relationship
according to the observed probability values. Table 46 reveals that the observed probability value for teacher preparation program was greater than .05, suggesting no significant relationship between teacher preparation program and preparedness for implementing culturally relevant pedagogy.

Table 46

*Correlations: Teacher Preparation Program and Implementation of Culturally Relevant Pedagogy*

<table>
<thead>
<tr>
<th></th>
<th>Teacher Preparation Program</th>
<th>Implementation of Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.423</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.063</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

**Professional Development and Culturally Relevant Pedagogy**

RQ15: Is there a significant relationship between professional development for teachers and teacher preparedness for implementing culturally relevant pedagogy?

An analysis of data reveals that there is a significant relationship between professional development and preparedness for implementing culturally relevant pedagogy. The responses on the survey instrument related to the questions about professional development demonstrated that professional development shows a significant relationship according to the observed probability values. While general professional development and professional development on single-gender instructional
strategies display no significant relationship to teacher preparedness to implement culturally relevant pedagogy. Professional development on culturally relevant pedagogy and professional development through reflection reveal a significant relationship to teacher preparedness to implement culturally relevant pedagogy. Table 47 reveals that the observed probability value for general professional development was greater than .05, suggesting a significant relationship between general professional development and preparedness for implementing single-gender instructional strategies.

Table 47

Correlations: General Professional Development and Preparedness to Implement Culturally Relevant Pedagogy

<table>
<thead>
<tr>
<th></th>
<th>General Professional Development</th>
<th>Preparedness to Implement Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.133</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.575</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 48 reveals that the observed probability value for professional development on culturally relevant pedagogy was greater than .05, suggesting no significant relationship between professional development on single-gender instructional strategies and preparedness for implementing culturally relevant pedagogy.
### Table 48

**Correlations: Professional Development on Single-Gender Instructional Strategies and Preparedness to Implement Culturally Relevant Pedagogy**

<table>
<thead>
<tr>
<th>Professional Development on Single-Gender Instructional Strategies</th>
<th>Preparedness to Implement Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.495</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 49 reveals that the observed probability value for professional development on culturally relevant pedagogy was less than .05, suggesting a significant relationship between professional development on culturally relevant pedagogy and preparedness for implementing culturally relevant pedagogy.

### Table 49

**Correlations: Professional Development on Culturally Relevant Pedagogy and Preparedness to Implement Culturally Relevant Pedagogy**

<table>
<thead>
<tr>
<th>Professional Development on Culturally Relevant Pedagogy</th>
<th>Preparedness to Implement Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.011</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>
Table 50 reveals that the observed probability value for professional development through reflection was less than .05, suggesting a significant relationship between professional development through reflection and preparedness for implementing culturally relevant pedagogy.

Table 50

Correlations: Professional Development through Reflection and Preparedness to Implement Culturally Relevant Pedagogy

<table>
<thead>
<tr>
<th></th>
<th>Professional Development through Reflection</th>
<th>Preparedness to Implement Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.538</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.014</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

RQ16: Is there a significant relationship between professional development for teachers and teacher implementation of culturally relevant pedagogy?

An analysis of data reveals that there is no significant relationship between professional development and implementation of culturally relevant pedagogy. The responses on the survey instrument related to the questions about professional development demonstrated that professional development shows a significant relationship according to the observed probability values.

Table 51 reveals that the observed probability value for general professional development was greater than .05, suggesting no significant relationship between general professional development and implementation of culturally relevant pedagogy.
Table 51

Correlations: General Professional Development and Implementation of Single-Gender Instructional Strategies

<table>
<thead>
<tr>
<th></th>
<th>General Professional Development</th>
<th>Implementation of Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.153</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.520</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 52 reveals that the observed probability value for professional development on single-gender instructional strategies was greater than .05, suggesting no significant relationship between professional development on single-gender instructional strategies and implementation of culturally relevant pedagogy.

Table 52

Correlations: Professional Development on Single-Gender Instructional Strategies and Implementation of Culturally Relevant Pedagogy

<table>
<thead>
<tr>
<th></th>
<th>Professional Development on Single-Gender Instructional Strategies</th>
<th>Implementation of Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.268</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.253</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>
Table 53 reveals that the observed probability value for professional development on culturally relevant pedagogy was less than .01, suggesting a significant relationship between professional development on culturally relevant pedagogy and implementation of culturally relevant pedagogy.

Table 53

Correlations: Professional Development on Culturally Relevant Pedagogy and Implementation of Culturally Relevant Pedagogy

<table>
<thead>
<tr>
<th></th>
<th>Professional Development on Culturally Relevant Pedagogy</th>
<th>Implementation of Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.572</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.008</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 54 reveals that the observed probability value for professional development through reflection was less than .05, suggesting a significant relationship between professional development through reflection and implementation of culturally relevant pedagogy.
Table 54

Correlations: Professional Development through Reflection and Implementation of Culturally Relevant Pedagogy

<table>
<thead>
<tr>
<th>Professional Development through Reflection</th>
<th>Implementation of Culturally Relevant Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.460</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.041</td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>

Qualitative Data Analysis

Qualitative information was collected from nine interviews with teachers in single-gender classrooms with African-American girls and two administrators who supervise these teachers. The researcher also collected qualitative data through an examination of lesson plans of six of the teachers. Three teachers were interviewed at Single-Gender Academy 1 and two teachers’ lesson plans were collected. Five teachers and one administrator were interviewed at Single Gender Academy 3 and four teachers’ lesson plans were collected. One teacher and one administrator were interviewed at Single Gender Academy 4 and no lesson plans were collected. No interviews were conducted and no lesson plans were collected from Single-Gender Academy 2 because the researcher was unable to obtain consent from the principal for the school to participate in the research study. The intention of collecting these forms of qualitative data and analyzing them was to get insight into whether the teachers were prepared for and implemented single-gender instructional strategies and culturally relevant pedagogy.
with African-American girls in single-gender classrooms and factors that influenced their preparedness and implementation. The outcomes are discussed after each related research question is restated.

**Teacher Preparedness for and Implementation of Single-Gender Instructional Strategies**

**RQ1:** What factors impact teacher preparedness for and implementation of single-gender instructional strategies with African-American girls in single-gender classrooms (teacher demographics, teacher preparation program, administrator behavior, other)?

According to the responses from interviews of teachers, they felt prepared to varying degrees and multiple factors impacted their preparedness for implementing single-gender instructional strategies with African-American girls in single-gender classrooms. Two teachers both expressed a lack of preparedness to implement single-gender instructional strategies. Their statements alluded to the need for professional development and on-going instructional support regarding single-gender instructional strategies to better prepare teachers for working in single-gender classrooms with African-American girls. One teacher stated,

Nothing has prepared me for this. To be honest, this has been a steep learning curve. I was not prepared. I’m learning as I go. I have a lot to learn still. My students represent such a diversity for being; I mean I’m not in a very diverse place when you think of things racially or gender wise, but there is a major diversity among personalities and background and upbringing among my
students. I am continually surprised and learn every day from them, but nothing has prepared me for this experience. I’m not sure what the program would look like that did prepare someone like me for this experience. (Teacher 4, personal communication, November 7, 2013)

The other teacher at the same single-gender academy stated,

I feel more like teaching single-gender girls and African-American girls in the environment, I was baptized by fire. I didn’t receive any formal training for gender education before I was assigned to an all-female academy for mostly African-American students. I think reading on my own, books that I read on my own, articles that I read on my own gave me some sound strategies that I could use over and over again that tend to work with the girls, but I think some more formalized training is definitely needed in that area for school systems that have allowed to include single-gender education in their curriculum. (Teacher 1, personal communication, October 22, 2013)

Some teachers felt more prepared to implement single-gender instructional strategies and provided reasons why. Their statements highlighted demographic factors such as: siblings, ethnicity, gender and years of teaching experience as important factors in their preparedness for implementing single-gender instructional strategies with African-American girls. Moreover, teacher preparation program and current research and professional development surfaced as other important factors. One teacher stated,

Before I even give the technical answer which is my educational background at Spelman, I would have to say being an only child in my parents household and
being very what’s the word I need to use? I do a lot of self-examination as a woman. That’s why I started an organization at my last school for young girls because there are things that I have learned about myself as a woman. There are things that I see in young girls that I know I used to think the same way or in similar ways and that has developed such a passion in me to look out for these young ladies as well, making sure that I can look at my own self as a woman so that when I see the students I don’t see them as separate from me but I look for what is similar between them and myself and them when I was a young girl so that there can be a bridge that is formed and not a divider so to speak between the two of us. So that would be my number one and then of course having experience at Spelman with all girls. (Teacher 8, personal communication, November 12, 2013)

A teacher at another single-gender academy stated,

I know this sounds cliché, but I grew up around African-American women. I have sisters and a mom so I understand their moods and emotions and sometimes they just don’t want to be bothered. So, I would say life has prepared me for this. (Teacher 9, personal communication, November 22, 2013)

A teacher at another single-gender academy stated,

I was exposed to some Gurian Institute training which pretty much gave me some insight in how I should cater to the genders . . . I would have to say what prepared me most is my years of experience. This is year 21 and those 21 years have all been in a K-12 setting predominantly high school, but experience coupled with
new things that are out there regarding my particular area. (Teacher 5, personal communication, November 10, 2013)

According to the responses from interviews of teachers and administrators, teachers implemented single-gender instructional strategies at different levels and multiple factors impacted teachers’ implementation of single-gender instructional strategies with African-American girls in single-gender classrooms. Several of the teachers utilized brain-based learning strategies in their implementation of single-gender instructional strategies. Specifically, these teachers incorporated brain-based research principals 2, 5, 7, 9, and 12 in their classrooms (Caine & Caine, 1991). Interview with administrators also confirmed these behaviors. One teacher stated,

In terms of instructional activities that I implement in my classroom, I make sure that they (students) have an opportunity to express themselves usually through opening activities that allow them to not only write out how they feel, but also kind of express that in an oral way, so allowing them to kind of make personal connections to what we are studying. Umm, I also allow them to work in groups, which allows them to support each other, which is a strategy that is specific to single-gender. Also, I do adjust the lighting. I do adjust and allow them brain breaks. Further in terms of instructing girls, I do allow them an opportunity to research topics that are relevant to them, in conjunction with the standards based curriculum, so just empowering them through that. (Teacher 2, personal communication, November 6, 2013)
Another teacher at the same single-gender academy stated,

Some of the things that I do, first I would have to say have to do with our sponges or warm-ups in the morning and oftentimes those topics are tailored more toward girls. We may spend more time talking about confidence and appearance, as well as relationship building, family and boyfriend girlfriend or whatever types of relationships they have. So we might spend more time on topics that seem to be more girly . . . I also keep the lights dim. I use soft music when they come in the room. (Teacher 8, personal communication, November 12, 2013)

A teacher at the same single-gender academy stated,

I try to talk about females in different cultures that we discuss in World History in particular, no in American Government as well. I try to make an extra point of bringing up females throughout different cultures in government. Say for instance, bringing up Sotomayor being on the Supreme Court and how she could change the complexion of the court. I like to talk about females in history to make a lot of my girls feel like they have a place in history. (Teacher 4, personal communication, November 7, 2013)

A teacher at another single-gender academy stated,

I am also mindful of getting girl books. I am also mindful of when I do my lesson plans, like I did something about the historical significance of segregation. I looked for things that talked about girls and how they struggled. I can’t remember the name of the girl in Pakistan who fought recently and was bombed, was shot in her face because she wanted to get an education. So, sharing those
things with the girls so they can see that there are girls who have struggled, but
have overcome. (Teacher 6, personal communication, November 11, 2013)

Responses from one administrator supported the aforementioned statements regarding
teachers’ implementation of single-gender instructional strategies with African-
American girls along with evidence of the incorporation of brain research. The
administrator stated,

When you enter the classrooms you see beautiful bulletin boards, you see
beautiful decoration accent pieces throughout the classrooms. You will see soft
lighting. You’ll hear music soft classical or jazz music playing. It will also smell
good. The classrooms smell good. So that immediately, will put young ladies in
a really good frame of mind as far as giving them a positive aesthetically pleasing
environment to work in. Also with girls, you have to remember girls talk. And
again it goes back to those little breaks. We call them brain breaks. And some
girls tease us and call it a beauty break because girls need time to just talk
sometimes. They are chatter boxes, so they are allowed to have little five minute
breaks where they go again to the restroom, check their makeup etc. and then they
are back in place to pick up with the instruction again. (Administrator 1, personal
communication, November 13, 2013)

A document analysis of teachers’ lesson plans provided some evidence to support
teachers’ implementation of single-gender instructional strategies with African-
American girls in single-gender classrooms. For example, one middle school
English/Language Arts (ELA) teacher’s lesson plan included an incorporation of a
reading from Maya Angelou and the following question for students to answer, “Why do you think a caged bird sings?” Likewise, a high school ELA teacher’s lesson plan displayed the incorporation of single-gender instructional strategies by integrating stories about women to learn content, teaching students about women in medieval society, and incorporating a strategy called last woman standing to check for understanding.

While interviews with teachers and administrators and a document analysis of lesson plans provided evidence to support teachers’ implementation of single-gender instructional strategies, interview with teachers also revealed barriers to implementing these strategies. Some of the barriers, like girls having to learn to work collaboratively, coincided with those that had to be overcome according to other research (Hubbard & Datnow, 2005). For example, one teacher stated,

I know with the group work that girls say they like to work in a group. I think sometimes that can be not very constructive. I think sometimes they want to work in a group because they want to talk to each other. So that’s definitely a challenge, to get them to actually focus on the work. And also, getting them to all include each other is a challenge as well. Like, one girl feels like she doesn’t know any of the answers and she just checks out and then she doesn’t get learning from that day. So, I try to circulate. I try to monitor a lot. I try to assign specific roles, so that even if you are the time keeper, maybe you’re not the reader, you’re not the writer, but you’re giving something to the group, so that tends to help girls feel more included there. Umm we’re still working on the feedback discussions
on getting girls to really feel like it’s not my personal feedback that’s coming to
them. (Teacher 7, personal communication, November 11, 2013)

Regarding challenges to implementing single-gender instructional strategies, a teacher at
a different single-gender academy stated,

Some challenges that I face in implementing them (single-gender instructional
strategies) are there may be some times when they (students) are not interested in
working together or hearing each other out, but I take that time to allow them to
kind of make it a teachable moment, so that they can also learn how to properly
socialize with each other and support each other. (Teacher 2, personal
communication, November 6, 2013)

Teacher Preparedness for and Implementation of Culturally Relevant Pedagogy

RQ2: What factors impact teacher preparedness for and implementation of
culturally relevant pedagogy with African-American girls in single-gender
classrooms (teacher demographics, teacher preparation program,
administrator behavior, other)?

According to the responses from interviews of teachers, they felt prepared to
varying degrees and multiple factors impacted their preparedness for implementing
culturally relevant pedagogy with African-American girls in single-gender classrooms.
Among these factors included: teacher preparation program, parent occupation, church
involvement, ethnicity, gender, professional development and support from the
administrator. In terms of preparedness for implementing culturally relevant pedagogy,
one teacher stated,
Honestly, I don’t know that there is specifically something that has prepared me. I know that ummm you know Teach for America gives some support, it’s not gender specific but they give support for like having that culturally relevant pedagogy. I have a friend who taught all girls last year so I’ve talked to him a little bit but besides that I haven’t really had any specific preparation for teaching African-American girls. (Teacher 7, personal communication, November 11, 2013)

Another teacher at the same single-gender academy stated,

I can say that the preparation has not been so much in what I have learned in school, but what has really prepared me is that my parents owned a daycare, so I had an early love for teaching and I have always been involved working with teenagers in church through like a boy scout girl scout club. We taught the little badges that they have and I took them camping, so I have a lot of hands on experiences. I’ve always loved working with kids, so I’ve always had that organization about how you have to have tenacity and have to work through something and you have individual relationships which makes all the difference in the world. (Teacher 6, personal communication, November 11, 2013)

A teacher at a different single-gender academy stated, "Being an African-American female at the very school that I teach at, I have that privilege and that honor of actually being able to come back and give back to the community that made me who I am" (Teacher 3, personal communication, November 7, 2013). Another teacher at the same single-gender academy stated,
The training that I received in culturally relevant pedagogy probably more so came from my master’s program at Georgia State University where I took several multicultural educational courses that taught me how to actually deliver information to students from different ethnic backgrounds and different socioeconomic backgrounds umm in a way that they will understand it and be able to apply it. (Teacher 1, personal communication, October 22, 2103)

A third teacher at the same single-gender academy stated, "My immediate administrator has made sure that we are trained in those strategies. We were offered training during preplanning and she continually provides support throughout the school year which allows us to focus on implementing those strategies appropriately” (Teacher 2, personal communication, November 6, 2013). One administrator concurred with this teacher’s statement by stating,

Because this is an urban setting, you have to keep in mind that there are some things that people will first of all feel, 'oh this is beyond me. I can’t tackle this. There are too many factors going on in this child’s life that we can’t possibly tackle to teach her.' You have to, you have to look at that your teaching urban young ladies and you have to again be sensitive to whatever you’re saying and doing in the classroom. A lot of students fail tests, especially tests that are achievement tests because of even just the wording on tests. And, you would be surprised how some terms that are used in other settings are not even used in an urban setting. So, keeping that in mind, teachers need to make sure that the experiences that young ladies have in the classroom are those that are and I should
say and I hate to use the word relevant, are enriching experiences that are basically linked to their culture. (Administrator 1, personal communication, November 13, 2013)

The administrator continued by stating,

For example, if we’re talking about let’s say women’s history month because during that particular month we go above and beyond with different activities to highlight women’s achievements. But, if we only focus on women in other cultures like focus on women people of European ancestry, Hispanic ancestry, Asian etc., to me that’s not making that month meaningful, it’s not making it culturally relevant. So, we make sure that we highlight black women and because we have Hispanic young ladies in our academy, we also highlight Hispanic women also who have made an impact on the world. (Administrator 1, personal communication, November 13, 2013)

In terms of implementing culturally relevant pedagogy, teachers incorporated practices such as: empowering students to develop their cultural competence, acknowledging student differences and diversity, making real world connections for students, and encouraging students to challenge social injustices which aligned with prior research on culturally relevant pedagogy (Ladson-Billings, 1995; Tate, 1995; Durden, 2008; Milner, 2011; Rajagopal, 2011). One teacher stated,

One thing that I do, is the girls say everyday they say a little like creed basically saying that they are promising young women with potential for life changing achievement. I think that’s really important for them to hear because I think a lot
of young African-American girls don’t hear that a lot, especially in science, because it’s difficult. I also try to incorporate the use of stem role models, and so we’ve had guest speakers or we will take some time in class to go over like an African-American scientist like we’ve done Mae C. Jamison and others. So it’s helpful for them to, I think it’s helpful for them to hear positive feedback or affirm themselves positively and then umm to know about other women who have gone before them that are, to try to help them make an identity as a minority woman in science. (Teacher 7, personal communication, November 11, 2013)

A teacher at another single-gender academy stated,

With African-American students I again much like my single gender in terms of single gender strategies, I want for them to be able to see themselves in the curriculum, particularly with the literature, so we do incorporate topics as well as selections which are reflective of African-American culture. Again, I also allow them to work communally when possible because that is considered to be a culturally relevant strategy. (Teacher 2, personal communication, November 6, 2013)

A teacher at the same single-gender academy stated,

I try to umm include music and different music types because it is a Spanish classroom and because Spanish is much more than just the language it’s a culture, so I like to include Afro Caribbean or Afro Latino instruction into my curriculum. That might include listening to Pandora and listening specifically to a station that is based off of an Afro Latino artist and we might talk about how are they related
because a lot of my students don’t realize that there is a relation between African Americans, Africans, and the Latino population. So, I’m constantly trying to reinforce that connection with them. (Teacher 3, personal communication, November 7, 2013)

Responses of administrators support teachers’ implementation of culturally relevant pedagogy. One administrator stated,

We tend to integrate content from cultures across the world. For example, if the students are studying the water cycle, at our school they might examine the effects of the water cycle on the environment in Asia and Africa whereas in a traditional school it may be taught in isolation or in a vacuum. We focus a lot on Big Ideas. (Administrator 2, personal communication, November 22, 2013)

Another administrator stated,

Again, we have primarily African-American young ladies, but we also have Hispanic young ladies, and I have walked in on him (teacher) really talking about various figures throughout history. Even if he is going back to let’s say the 15th century, he’s going to bring into the discussion some person of color who had something relevant that he or she did during that particular time period in history. So I can say for certain that he does that and I can also say that when I visit other classrooms, those teachers always try to make their experiences culturally relevant for the girls as well. (Administrator 1, personal communication, November 13, 2013)
A document analysis of teachers’ lesson plans provides evidence to support teachers’ implementation of culturally relevant pedagogy with African-American girls in single-gender classrooms. For example, one high school social studies teacher’s lesson plan displayed the integration of students working in cooperative groups and the teacher relating economics concepts to real life. One high school Spanish teacher’s lesson plan indicated that the teacher helped students make connections between Spanish and their own communities and built on students’ prior knowledge. One middle school Business Education teacher’s lesson plans indicated that the teacher makes real world connections for students while teaching content material. This teacher also questions students at various parts of the lessons to check for understanding and integrates technology into the classroom. This teacher also requires students to create their own finished product related to careers based on their career interest.

While interviews with teachers and administrators and a document analysis of lesson plans provided evidence to support teachers’ implementation of culturally relevant pedagogy, interview with teachers also revealed barriers to implementing these strategies. For example, one teacher stated, "Challenges are sometimes a lack of resources. Unfortunately, I am in a situation where I only have access to one student computer, so it kind of limits the technology and the ability to self-discover" (Teacher 3, personal communication, November 7, 2013). Another teacher at the same single-gender academy stated,

Well, one of the biggest challenges is that our textbooks do not provide samples, do not focus on women enough. They seem to be a little side note, a special
activity box, instead of being ingrained throughout the material. It’s just like now let’s look at women in this special section. Whereas since I primarily teach in an all-girl academy, I need more material than a textbook provides in order to be more culturally relevant to my girls, so I have to bring in outside resources articles and things that are more specifically related to females. (Teacher 4, personal communication, November 7, 2013)

A third teacher at the single-gender academy stated,

Some of the challenges that I’ve faced are just the normal challenges that we face in a lower income environment and even sometimes in the African-American community. They are coming from households that are having financial problems, sometimes social issues in the home that’s causing them not to complete the homework assignments before they come in so one of the biggest challenges is to make sure that they’re actually taking the time to do those skeleton notes and to research the information before they come to class so it won’t be the first time that they’ve heard it. Some of the ways that I’ve overcome that is by contacting the parents and letting them know what the strategy actually is and even if the parent does not understand what the subject matter is, they can make sure that the student is going through it and filling out the notes the way that they should, so when they get back to school the next day that they do know something about the subject matter. (Teacher 1, personal communication, October 22, 2013)
A teacher at another single-gender academy stated,

They often feel and some even say, this is just too much, this is too much. And I think their perception of it being too much has to deal with their inadequacy regarding reading. And how do I overcome it? I’m not certain that I totally overcome it, but I keep pushing and over time, I pick up a new student who is with me and realizes how important it is. Yeah, I don’t know that I am totally overcoming it, but I am taking a step toward success for the child in that they are not in their comfort zone of, ‘oh I’m just not gonna do it. I’m just gonna constantly push and see what I get.’ (Teacher 5, personal communication, November 10, 2013)

**Administrative Behaviors and Teacher Preparedness for and Implementation of Single-Gender Instructional Strategies**

RQ3: What administrative behaviors influence teacher preparedness for and implementation of single-gender instructional strategies?

According to the responses of the teachers interviewed, multiple administrators’ behaviors influenced their preparedness for implementing single-gender instructional strategies. Some administrators’ behaviors helped prepare teachers to implement single-gender instructional strategies while other behaviors failed to prepare the teachers. Many of the statements included the administrators’ role in providing professional development to teachers which aligned with prior research (Murphy et al., 2007). One participant stated,
She (administrator) is extremely, extremely, extremely enthusiastic about us getting as much development as we can and gaining as many strategies as we can for the single-gender academy. For example, there’s a young lady on staff here who has done some work and some extensive work with single-gender academies and our direct supervisor actually has asked her to come in and do several umm professional development seminars or workshops on working with single-gender females and strategies that could benefit us inside of the classroom. (Teacher 3, personal communication, November 7, 2013)

Another participant at the same single-gender academy stated, "My administrator has told me most of what I have learned, the things that I haven’t learned from my students I’ve learned from my administrator and my fellow teachers in my academy about single-gender instruction strategies" (Teacher 4, personal communication, November 7, 2013).

Another participant at a different single-gender academy stated,

- Our principal has been very deliberate about our training, very deliberate . . .
- Every week she sends us a calendar as well as tidbits about schools to watch.
- What are the characteristics of schools to watch and what makes single-gender different from other kinds of things and how do we perfect our craft in working with our young ladies? (Teacher 6, personal communication, November 11, 2013)

Likewise, another participant at the same single-gender academy stated, "So, each week we get a little like bulletin that has a specific strategy of the month. This month is like
girl talk about like talking to girls. And that comes from the principal so that’s good. So, yeah we get that support” (Teacher 7, personal communication, November 11, 2013).

An interview with one administrator supported statements made by teachers. This administrator stated,

In a single-gender setting it is important that you first of all cater toward young ladies’ emotional needs. Girls’ brains and I should just say female brains totally operate differently than a males’ brain and that was really brought to light when I went to do well I should state that I participated in single-gender training at the Gurian Institute in Colorado. That was such an eye opening experience and to even see the actual medical evidence of how the female brain operates differently than that male brain through images that the presenters showed us. Keeping that in mind, I try to convey to the teachers that they need to first of all have classrooms that are aesthetically pleasing. Females like pretty things.

(Administrator 1, personal communication, November 13, 2013)

This administrator went on to state,

Again, resources are provided in the form of outside experiences, also relevant for the teachers to participate in professional development sessions that are targeted toward single-gender instruction. I remember one year I took a young lady to Colorado and she was able to go and learn a lot about that and she brought back that information and she shared that with other teachers. (Administrator 1, personal communication, November 13, 2013)
The statements above provide evidence to support administrators’ behaviors that prepare teachers for implementing single-gender instructional activities. The following statements indicate that certain behaviors of administrators do not support teacher preparedness for implementing single-gender instructional strategies. One participant stated,

We were allowed to attend single-gender instructional professional developments, but the downside to it is that we had to find them on our own and we didn’t necessarily have anybody telling us which ones were the most effective, so I think the administrative team could have done a little bit more to let us know which professional developments were best for us if we were in a single-gender academy. (Teacher 1, personal communication, October 22, 2013)

Furthermore, this participant stated, "I just feel like enough was not done to educate the teacher and if you don’t educate the teacher, it is very difficult for them to educate the student in that particular environment" (Teacher 1, personal communication, October 22, 2013). One administrator stated,

Yes, we provide them (teachers) with professional development on gender strategies and provide them support with that. However, we do not sacrifice instruction for any particular strategies. We focus on what works. So if a certain gender strategy is not working for student learning then we will abandon it for a strategy that we have seen has given better results for our students. (Administrator 2, personal communication, November 22, 2013)
According to the responses of the teachers interviewed, multiple administrators’ behaviors influenced their implementation of single-gender instructional strategies. These behaviors related to providing information to teachers about brain-based learning (Gurian, 2002; Duman, 2008). One participant stated,

So, I found that my direct supervisor was invaluable in clueing me in that my room needed to smell a certain way, and the lights needed to be a certain way and my girls needed to be able to do each other’s hair in a low key manner. I find that when I provide those things my class does run smoother. They are not something that would have occurred to me before. (Teacher 4, personal communication, November 7, 2013)

Another participant at the same single-gender academy stated,

(My administrator) constantly provides us with any new strategies that she may come across or even time tested strategies. She also of course does classroom visits and observations allowing us to improve upon our use of the implementation of single-gender strategies, so she is a consistent support base for the implementation of those strategies. (Teacher 2, personal communication, November 6, 2013)

A third teacher at that single-gender academy stated,

Of all the years I’ve been here at this particular facility, she moved me into a classroom where she thought it would be more conducive for doing more artistic and aesthetically pleasing assignments, so she’s extremely supportive in that
regard and she loves to see those things posted. (Teacher 3, personal communication, November 7, 2013)

A teacher at another single-gender academy stated the following regarding her administrator:

Even support down to pink and brown throughout our building. And when you come to our building, you can see it looks like a girl place to be. We have, we are very strong about I think all girls want to be pretty girls. We have a washer and dryer at our school so even when the girls come dirty we make sure they feel like pretty girls. We even purchase shoes for them and we purchase uniforms, and I think it supports instruction because its’ part of what girls want to feel, the basic thing like Maslow’s Hierarchy of Needs. We take care of those things. (Teacher 6, personal communication, November 11, 2013)

This teacher continued by stating,

They have extracurricular activities to support their interest, as well as every other Friday they have a mentoring group, a group that comes to mentor the girls like girl scouts black women some other mentoring groups. So looking at the undergirding of instructional strategies and how they celebrate the single-gender. (Teacher 6, personal communication, November 11, 2013)

A teacher at another single-gender academy stated, ”We have a great administrative team here. They make sure that teachers do not want for anything. Whether it be instructional resources, co-teaching, professional development, even bulletin
boards our administrative team helps with that" (Teacher 9, personal communication, November 22, 2013)

**Administrator Behaviors and Teacher Preparedness for and Implementation of Culturally Relevant Pedagogy**

RQ4: What administrative behaviors influence teacher preparedness for and implementation of culturally relevant pedagogy?

According to the responses of the teachers interviewed, multiple administrators’ behaviors influenced their preparedness for implementing culturally relevant pedagogy. Some administrators’ behaviors helped prepare teachers to implement culturally relevant pedagogy while other behaviors failed to prepare the teachers. Behaviors that helped prepare teacher aligned with research that discusses that effective administrators provide feedback to teachers and delve into curriculum to ensure alignment between classroom and out of classroom school experiences for students (Murphy et al., 2006). One participant stated, "She (administrator) constantly whether it be via e-mail or a handout, she’s constantly providing us with feedback, as well as strategies that we can utilize that are culturally relevant and will reflect cultures of those in our classrooms" (Teacher 2, personal communication, November 6, 2013). A participant at a different single-gender academy stated,

My administrator definitely supports culturally enriching things, as a matter of fact we had a play Friday to come to the school that focused on teenagers ‘in betweens’ or something to that effect and it was really, really nice. The girls really enjoyed it. They were all just zeroed in. So yeah, my leader supports
culturally sound pedagogy, pedagogical practices. (Teacher 5, personal communication, November 10, 2013)

The statements above provide evidence to support administrators’ behaviors that prepare teachers for implementing culturally relevant pedagogy. The following statements indicate that certain behaviors of administrators do not support teacher preparedness for implementing culturally relevant pedagogy. These statements provide evidence that supports research related to the effect of administrator evaluation tools and administrator behaviors (Catano & Stronge, 1996). Specifically, this research discusses that tools that evaluate administrators may not include teacher training as a significant area, but may focus more on other areas like instructional quality. Therefore, administrators may not prioritize teacher training or types of teacher training unrelated to their evaluation tool. One participant stated,

I think that my administration focuses mostly on differentiated instruction and we rarely talk about culturally relevant instruction at all, even though we are in an environment that is at least 99.7% African American and the majority of the teaching staff is African American as well, we do very little focusing on culturally relevant pedagogy and I think that is due largely to the state implementing standardized testing and so focused on standardized testing that we are starting to teach all kids the same way, rather than focusing on best ways to teach them. (Teacher 1, personal communication, October 22, 2013)
Another participant at the same single-gender academy stated,

Well, my administrator provides me with more classroom and behavior, setting and environment strategies than specific curriculum per say, so I would say it’s more toward helping me understand the environment the setting that a single girls academy needs to function in than the specifics beyond the standards and the standards really don’t lend a lot of the standards are kind of gender neutral or lacking in enough application of gender so my administrator does not really give me the curriculum side of the pedagogy. (Teacher 4, personal communication, November 7, 2013)

A teacher at another single-gender academy stated,

We don’t specifically talk about instructional strategies like that in meetings or anything or in trainings, certainly not culturally relevant. We have tons of conversations about instructional strategies but nothing culturally relevant. I know I mentioned the e-mail before and I guess that’s culturally relevant they (administrators) don’t do a whole lot. I’m not sure where that training would come from or where I would find it. (Teacher 7, personal communication, November 11, 2013)

One administrator’s responses coincided with these statements. The administrator stated,

Well, we have a diverse school or one of the most diverse schools in terms of charter schools. We have about a 78% African-American population and we have white and Asian students so we don’t spend a lot of time focusing on strategies that are best for teaching one particular group of students, strategies for
teaching African-American girls or boys or white girls or boys. I think it would be different if our population had a 90-95% African-American population, then our focus may be different but not with the student population that we serve. (Administrator 2, personal communication, November 22, 2013)

According to the responses of the teachers interviewed, multiple administrators’ behaviors influenced their implementation of culturally relevant pedagogy. Certain administrators’ behaviors support teachers’ implementation of culturally relevant pedagogy while others failed to support implementation as described by the teachers interviewed. One participant stated,

Oh total support is what I receive regarding culturally relevant pedagogy and one such example that we’ve used was the show the awards show Black Girls Rock. I mean we have probably 99% African-American population and for those girls to hear stories of others whose lives started like theirs was eye opening for them. And I just go not so much instructionally but in terms of wrapping around the child that emotional support that is needed to focus on instruction. (Teacher 5, personal communication, November 10, 2013)

A participant at a different single-gender academy stated,

In terms of being specific in terms of her (administrator) support, for instance I have gone to her to make sure that I have incorporated culturally relevant strategies and she has offered even more strategies at that point as well as support for ones that I am already implementing. (Teacher 2, personal communication, November 6, 2013)
Another participant at the same single-gender academy stated,

I can say that I don’t think that I have asked or requested support in that area. I have just done what I’ve known to do to be culturally responsive so to speak but I have not implemented anything new that would necessitate her (administrator) involvement or support. So, I can’t really say that she has been supportive or not because I have not required that of her. (Teacher 8, personal communication, November 12, 2013)

Summary

The quantitative data collected in this research study was analyzed using SPSS. A test of regression was used to analyze research questions 1-2 quantitatively based on responses to the Teacher Survey because a regression test displays the impact that variables have on one another. Research questions 1-2 sought to determine if Teacher Demographics, Teacher Preparation Program and Professional Development (Independent Variables) had an impact on Teacher Preparedness and Teacher Implementation (Dependent Variables). Pearson's Correlations were used to analyze quantitative research questions 5-16 based on responses to the Teacher Survey because Pearson Correlations show relationships between variables. Questions 5-16 sought to determine whether any significant relationships existed between the independent and dependent variables in the study.

While research questions 1-2 were analyzed quantitatively, the researcher also analyzed these questions qualitatively to determine whether factors outside of those suggested in the Teacher Survey impact the dependent variables and to support those
factors determined by the quantitative analysis. Research questions 3-4 were only analyzed qualitatively. To collect qualitative data the researcher tape-recorded and transcribed teacher and administrator interviews and collected lesson plans from teachers interviewed. The researcher analyzed the qualitative data by coding the transcripts and identifying common themes that appeared throughout the transcripts. Additionally, the researcher conducted a document analysis of teachers’ lesson plans by coding and identifying common themes found in the lesson plans as well.
CHAPTER VI

FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The dropout epidemic in the United States disproportionately affects low-income, minority, urban, single-parent youth attending large, public high schools in the inner city. Educators attempt to address the dropout epidemic through some reform models that integrate SLCs and single-gender classrooms within those SLCs. While the prior research discussed advantages and disadvantages of single-gender classrooms for girls, as compared to co-educational classroom, a lack of research addressing teacher preparation for working with African-American girls in single-gender classrooms was available.

The purpose of this research investigation was to determine factors that impact teacher preparedness for and implementation of culturally relevant pedagogy and single-gender instructional strategies with African-American girls in single-gender classrooms. Specifically, the study investigated whether the independent variables of teacher demographics, teacher preparation program, professional development and administrators’ behaviors impact and/or maintain a relationship of significance with the dependent variables of teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American females in single-gender classrooms. A mixed method approach was used to analyze data from a Teacher Survey, interviews with teachers and administrators and teachers’ lesson plans. .
**Findings**

**Quantitative Findings**

The descriptive analysis of data for the Teacher Survey revealed the following:

- The majority of the twenty respondents to the Teacher Survey could be identified as female (n = 13), 11-20 years of teaching experience (n = 8), less than one year (n = 7) or three or more years (n = 7) of teaching experience in a single-gender classroom setting with girls, African American (n = 17), 31-40 years old (n = 10), and grew up in a suburban area as a child (n = 9).

- The teacher preparation programs attended by the majority of the respondents could be identified as public institution (n = 11), co-educational (n = 19) and non-historically black college or university (n = 17).

Significant findings from the regression analysis of data for the Teacher Survey displayed the following:

- Two factors, professional development on single-gender instructional strategies and professional development through reflection, impacted teacher preparedness to implement single-gender instructional strategies at a .05 level of significance.

- Professional development on single-gender instructional strategies significantly impacted teacher implementation of single-gender instructional strategies at a .01 level of significance.
- Professional development on culturally relevant pedagogy, significantly impacted teacher preparedness to implement culturally relevant pedagogy at a .05 level of significance.

- Professional development on culturally relevant pedagogy significantly impacted teacher implementation of culturally relevant pedagogy at a .01 level of significance.

Significant findings from the correlation analysis of data revealed the following:

- A significant relationship between professional development and teacher preparedness to implement single-gender instructional strategies existed.

- A significant relationship at the .05 level for both general professional development and professional development on culturally relevant pedagogy and teacher preparedness for implementing single-gender instructional strategies existed.

- A significant relationship at the .01 level for both professional development on single-gender instructional strategies and professional development through reflection and teacher preparedness for implementing single-gender instructional strategies existed.

- A significant relationship also existed between professional development and teacher implementation of single-gender instructional strategies.

- A significant relationship at a .05 level of significance for both general professional development and professional development through reflection and teacher implementation of single-gender instructional strategies existed.
• A significant relationship at the .01 level of significance for professional development on single-gender instructional strategies and teacher implementation of single-gender instructional strategies existed.

• A significant relationship between professional development and teacher preparedness to implement culturally relevant pedagogy existed.

• A significant relationship at the .05 level of significance for both professional development on culturally relevant pedagogy and professional development through reflection and teacher implementation of culturally relevant pedagogy existed.

• A significant relationship at the .01 level of significance between professional development on culturally relevant pedagogy and teacher implementation of culturally relevant pedagogy existed.

• A significant relationship at the .05 level of significance between professional development through reflection and teacher implementation of culturally relevant pedagogy existed.

• A significant relationship existed at a .01 level of significance between teacher preparation program and teacher preparedness for implementing single-gender instructional strategies.

• A significant relationship existed at a .05 level of significance between teacher preparation program and teacher preparedness for implementing culturally relevant pedagogy.
Qualitative Findings

- The findings from the qualitative analysis of data provided evidence to support the quantitative findings that professional development impacts teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy.

- The findings also displayed evidence to support that teacher preparation program impacts teacher preparedness for implementing single-gender instructional strategies and culturally relevant pedagogy.

- Contrary to the quantitative findings, the qualitative findings revealed that teacher demographics such as years of experience and ethnicity impacted the respondents’ preparedness for implementing single-gender instructional strategies and culturally relevant pedagogy.

- Other teacher demographics impacted their preparedness for implementing single-gender instructional strategies and culturally relevant pedagogy including living with African-American female relatives as a child, being an only child, growing up in the same community location as the single-gender academy, church involvement, and parental occupation.

- The qualitative analysis also revealed that administrators’ behaviors influenced teachers’ preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy.

- Teachers’ preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy depended on administrators
providing professional development to teachers, support in terms of resources, feedback, information about brain-based learning and information on strategies.

- Teachers’ preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy depended on administrators creating an aesthetically pleasing academy environment/setting and providing experiences for African-American girls outside of the classroom within the school to support learning including: bringing in mentoring groups and plays, celebrating Women’s History Month, and providing various extracurricular activities.

- Document analyses of teachers’ lesson plans provided evidence to support teachers’ implementation of single-gender instructional strategies including: incorporation of readings from African-American females into curriculum, allowing students to create their own products related to their personal career aspirations, and accounting for student differences via multiple intelligences and learning readiness, which aligns with brain research.

- Many single-gender instructional strategies related to brain research that teachers’ implemented according to their interviews, did not appear in their lesson plans including: incorporation of soft music, dim lighting, pleasant smells, or brain breaks.

- Document analyses of teachers’ lesson plans provided evidence to support teachers’ implementation of culturally relevant pedagogy such as: making real
world connections for students related to content, grouping students for classroom activities, checking for understanding and providing feedback to students through questioning, incorporating culturally relevant readings into curriculum, and encouraging students to challenge social injustices.

**Conclusions and Implications**

Based on the findings of this research investigation, some of the researcher’s initial assumptions were supported, while others were not.

- The researcher’s initial assumption that a significant relationship would exist between professional development and teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy was supported based on the quantitative and qualitative findings in this investigation.

- Professional development from the Gurian Institute, professional development during pre-planning, professional development workshops and seminars conducted by staff who have experience with single-gender instruction and culturally relevant pedagogy, and professional development in the form of readings significantly impact teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy in single-gender classrooms with African-American girls. Based on these findings, the implication for school administrators and district leaders is that teachers who receive adequate professional development will be prepared for
and implement single-gender instructional strategies and culturally relevant pedagogy.

- The researcher’s initial assumption regarding the impact of teacher preparation program and teacher preparedness for implementing single-gender instructional strategies and culturally relevant pedagogy was not supported by quantitative data. Teacher preparation programs significantly impact teacher preparedness.

- Qualitative data also provided evidence that teacher preparation programs such as: Teach for America, Spelman College, and Georgia State University impact teachers’ preparedness for implementing culturally relevant pedagogy. Based on these findings, the implication for school administrators and district leaders is that teacher preparation programs prepare teachers to implement single-gender instructional strategies and culturally relevant pedagogy.

- Quantitative data did not support the researcher’s initial assumption that teacher demographics would significantly impact teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms because no significant relationship existed between teacher demographics and preparedness or implementation.

- Qualitative data analyzed from this research investigation however, demonstrated that for teachers interviewed in this study, demographic factors
gave them an advantage in being prepared to implement single-gender instructional strategies and culturally relevant pedagogy.

- Demographic factors that impacted teachers’ preparedness for implementing single-gender instructional strategies and culturally relevant pedagogy included: ethnicity, years of teaching experience, growing up in the same community as the single-gender academy, growing up in a house with African-American female relatives, and gender all impacted teacher preparedness for implementing single-gender instructional strategies and culturally relevant pedagogy. Based on these findings, the implication for school administrators and district leaders is that certain demographic factors better prepare teachers for implementing single-gender instructional strategies and culturally relevant pedagogy than others.

- The qualitative findings of this study provided evidence to support the researcher’s initial assumption that administrators’ behavior would influence teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy.

- Certain administrators’ behaviors such as: providing professional development to teachers, imparting knowledge to them about brain-based learning, supporting teachers, and creating an aesthetically pleasing single-gender academy environment and one that supports instruction all influenced teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy. Based on these findings, the
implication for school administrators and district leaders is that administrators play a significant role in teachers’ preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy.

- Teachers in this study indicated in their lesson plans implementation of research-based single-gender instructional strategies and culturally relevant pedagogy. However, some single-gender instructional strategies used by teachers as discussed in their interviews were not documented in their lesson plans. Based on these findings, the implication for school administrators and district leaders is that teachers may implement single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms, but they may not document in their lesson plans all of the strategies that they implement in their classrooms.

Recommendations

School Districts

Since a significant relationship existed between professional development and both teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classroom, school districts with single-gender classroom environments for girls need to take the following actions:

- Place administrators at single-gender schools with African-American girls who can effectively provide professional development to teachers that targets
single-gender instructional strategies based on brain research and culturally relevant pedagogy.

- Invest money in providing on-going professional development for administrators and teachers in schools with single-gender classroom environments in the areas of single-gender instructional strategies and culturally relevant pedagogy.

- Provide professional development prior to placing administrators and teachers in environments to lead or teach African-American girls in single-gender classrooms.

Since the results of this research investigation showed a significant relationship between teacher preparation program and teacher preparedness to implement single-gender instructional strategies and culturally relevant pedagogy, school districts that incorporate single-gender classroom environments for African-American girls should take the following actions:

- Seek assistance from faculty of Education Departments and alternative teacher preparation programs to help teachers capitalize on their knowledge of single-gender instructional strategies and culturally relevant pedagogy, to help them use this knowledge to implement strategies that best support African-American girls in single-gender classrooms.

- Development a partnership with postsecondary institutions and alternative teacher preparation programs to provide practicum experiences for students majoring in education to include a required single-gender classroom
instructional experience, as well as to examine their teacher preparation programs to ensure that single-gender instructional strategies and culturally relevant pedagogy are interwoven throughout the instructional process. This will provide a smoother transition for teachers into single-gender classroom environments with African-American girls.

**Local School Leaders**

Since quantitative data analysis showed no significant relationship between teacher demographics and teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy, but qualitative data analysis revealed that certain demographics provided evidence to the contrary in this research investigation, school administrators in school environments with African-American girls in single-gender classrooms need to take into consideration teacher demographics during the hiring process. Specifically, administrators need to take the following actions:

- Develop an action plan to ensure support for inexperienced teachers hired or teachers hired with demographics different than those of the student population they will be serving, to help the teachers adjust to the school environment.

- Provide the opportunity for experienced teachers with demographics similar to those of the student population to serve as teacher leaders to help support inexperienced teachers who do not have the same demographics as African-American girls in single-gender classrooms.
Finally, since qualitative data analysis revealed that administrators’ behaviors impacted teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy, then administrators in schools with African-American girls in single-gender classrooms need to exhibit behaviors that create the best environment for student learning. Specifically, these administrators need to take the following actions:

- Ensure that they create an aesthetically pleasing school environment for the girls and encourage their teachers to create equally pleasing environments in their classrooms.

- Provide opportunities outside of the classroom that support single-gender and culturally relevant instruction. For instance, administrators need to include: mentoring groups, plays, extracurricular activities, field trips, celebrations, and rewards for students.

- Provide teachers with professional development on single-gender instructional strategies based on brain research and culturally relevant pedagogy.

- Allocate money in their schools’ budgets for conferences and workshops for teachers.

- Assist their teachers in developing professionally through reflection on single-gender instructional practices based on brain research and culturally relevant pedagogy.

- Ensure that teachers have the resources necessary to implement these strategies such as: academic articles related to single-gender instruction and
culturally relevant pedagogy, supplemental texts to support the curriculum that integrate information about African Americans and women, computers for research projects, materials for bulletin boards and to make classrooms aesthetically pleasing, etc.

- Provide feedback to teachers related to their implementation of single-gender instructional strategies and culturally relevant pedagogy.

**Future Research**

Regarding future research related to this study, researchers should take the following actions:

- Focus on examining which specific single-gender instructional strategies and culturally relevant pedagogical strategies teachers actually implement in classrooms with African-American girls in single-gender classrooms and the effectiveness of the implementation of these strategies on students mastering Common Core Standards.

- Include interviews with students to determine whether the students’ statements support teachers’ affirmations of implementation of single-gender instructional strategies and culturally relevant pedagogy.

- Conduct a more wide-spread study in similar environments.

- Examine whether and how administrators hold teachers accountable for implementing single-gender instructional strategies and culturally relevant pedagogy with African-American girls in single-gender classrooms.
• Examine the role that instructional coaches’ play in providing feedback to teachers on single-gender instructional strategies and culturally relevant pedagogy.

• Examine how administrators’ provide feedback on single-gender instructional strategies and culturally relevant pedagogy to teachers via the state evaluation system.

Summary

Based on the findings of this research investigation, some of the researcher’s initial assumptions were supported, while others were not. Professional development and teacher preparation program significantly impacted teacher preparedness for implementing single-gender instructional strategies and culturally relevant pedagogy, while professional development significantly impacted teacher implementation. Administrators’ behaviors also impacted teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy.

The findings of this research investigation add to previous research regarding single-gender education, culturally relevant pedagogy and teacher preparation. They validated the importance of school leaders taking appropriate measures to ensure the effectiveness of single-gender school reform by revealing factors that affect teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy. Results of this research investigation provide implications and recommendations for school districts that incorporate single-gender classroom environments, faculty at Educational Departments at local universities and alternative
teacher preparation programs, administrators that lead single-gender school environments and future research. Educational leaders in school districts that integrate single-gender classrooms with minority students, specifically African-American females, can use the results of this study to select the best-suited individuals to teach in these environments, provide teachers with the most effective and efficient professional development to meet the needs of these students and advise school administrators about ways to support teachers in these environments to promote a positive learning environment for students.
APPENDIX A

Letter of Consent E-mail to Principals

Dear Principal:

My name is Brandi Johnson and I am a doctoral student at Clark Atlanta University in the Department of Educational Leadership. I am employed within this school district as an instructional coach, and I previously taught in both single-gender and co-educational classrooms. I am conducting a research investigation on teacher preparedness for and implementation of single-gender instructional strategies and culturally relevant pedagogy with African American girls in single-gender classrooms. The research investigation will consist of the distribution of a teacher survey, teacher and administrator interviews on a one-time basis, and a document analysis of teachers’ lesson/unit plans.

I would like to include your school in my study because of your school’s demographics and the fact that your school incorporates single-gender classrooms for girls. Inclusion of your school in this study will provide valuable information for the research investigation, and I will be more than willing to share the results with you. There are no risks associated with this study. To maintain confidentiality, the name of your school will be changed and all records will be kept in private and in a locked file. Upon any publication of the results, no information will be included to make it possible to identify participants. A tape recorder may be used to accurately record information, but will be destroyed upon completion of the study. Participation will occur on a voluntary basis and participants may drop out of the study at any time if they choose to no longer participate.

I would greatly appreciate it if you would respond to this e-mail confirming/declining your school’s participation in the study. If you have any questions about the research you may contact me at 678-427-0851. You may also contact my advisor, Dr. Barbara Hill at 404-880-6126.

Thank you for your time and consideration.

Brandi Johnson
Doctoral Student
Clark Atlanta University
APPENDIX B

Teacher Survey

The purpose of this survey is to examine the influence of demographics, teacher preparation programs and professional development on teacher preparedness for and implementation of instructional strategies that cater to the learning of African American girls in single-gender classrooms. Your contribution to this research is invaluable and will provide beneficial information for educators. Because of the sensitivity of the matter, your identity will remain protected, making you a completely anonymous participant.

If you are willing to participate in this research, please click on the link below and complete the survey. The survey consists of 30 questions that should take no more than 10-15 minutes to answer.

Directions: Answer the following questions by selecting the answer that best describes you.

Section 1: Demographic Information

1. What is your gender?  a. male   b. female

2. How long have you been a full-time teacher?
   a. 0-5 years  b. 6-10 years  c. 11-20 years  d. 21+ years

3. How many years have you taught in a single-gender classroom setting with girls? (If not currently teaching in a single-gender classroom setting, how many years did you teach in this type of setting?)
   a. less than 1 year  b. 1-2 years  c. 3 years or more

4. What is your ethnicity?
   e. Asian  f. Other
Appendix B (continued)

5. In which age range do you fall?
   a. 20-30  b. 31-40  c. 41-50  d. 51+

6. How would you describe the city in which you grew up as a child?
   a. Rural  b. Urban  c. Suburban

7. What type of setting best describes the undergraduate teacher preparation program that you attended?
   a. Public Institution  
   b. Private Institution  
   c. I attended an alternative education program

8. Which gender composition best describes the undergraduate teacher preparation program/alternative education program that you attended?
   a. Co-educational  b. Single-Gender

9. Which best describes the type of institution that you attended for your teacher preparation program/alternative education program?
   a. Historically Black College or University (HBCU)  
   b. non-HBCU

Section 2: Teacher Preparation Program

10. Did you learn about gender differences in student learning in your undergraduate teacher preparation program/alternative education program?
    a. yes  b. no  c. I do not know  d. I do not remember

11. Did you learn about cultural differences in student learning in your undergraduate teacher preparation program/alternative education program?
    a. yes  b. no  c. I do not know  d. I do not remember

12. Did you learn about brain-based learning in your undergraduate teacher preparation program/alternative education program?
    a. yes  b. no  c. I do not know  d. I do not remember
Appendix B (continued)

13. Did you learn about gender inclusive instructional strategies to use with girls in your undergraduate teacher preparation program/alternative education program?
   a. yes  b. no  c. I do not know  d. I do not remember

14. Did you learn about culturally relevant pedagogy in your undergraduate teacher preparation program/alternative education program?
   a. yes  b. no  c. I do not know  d. I do not remember

Section 3a: Professional Development

15. How often do you receive professional development at your school?
e. Never

16. How often do you read educational material that discusses best practices in education?
e. Never

17. How often do you attend educational conferences or workshops outside of your school?
e. Never

18. How often do you reflect on your instructional practices?
d. Monthly  e. Less than once per month  f. Never

Section 3b: Professional Development on Single Gender Instruction

19. How often do you/did you receive professional development at your school about single-gender instructional strategies for girls?
e. Never
Appendix B (continued)

20. How often do you/did you read educational material about single-gender instructional strategies for girls?
d. less than once per month  e. Never

21. How often do you/did you attend educational conferences or workshops outside of your school related to single-gender instructional strategies for girls?
d. less than once per month  e. Never

22. How often do you/did you reflect on single-gender instructional strategies?
d. Monthly  e. Less than once per month  f. Never

Section 3c: Professional Development on Culturally Relevant Pedagogy

23. How often do you/did you receive professional development at your school about culturally relevant pedagogy?
d. less than once per month  e. Never

24. How often do you/did you read educational material about culturally relevant pedagogy?
d. less than once per month  e. Never

25. How often do you/did you attend educational conferences or workshops outside of your school related to culturally relevant pedagogy?
d. less than once per month  e. Never

26. How often do you/did you reflect on culturally relevant pedagogy?
d. Monthly  e. Less than once per month  f. Never
Section 4: Teacher Preparation and Implementation

27. In your opinion, how prepared are you/were you to implement single-gender instructional strategies in your classroom with African-American girls?
   a. Very prepared      b. Somewhat prepared      c. Not prepared

28. In your opinion, how prepared are you/were you to implement culturally relevant pedagogy in your classroom with African-American girls?
   a. Very prepared      b. Somewhat prepared      c. Not prepared

29. How often do you/did you implement single-gender instructional strategies in your classroom with African-American girls?
   d. Monthly       d. Less than once per month       e. Never

30. How often do you/did you implement culturally relevant pedagogy in your classroom with African American girls?
   d. Monthly       d. Less than once per month       e. Never
APPENDIX C

Teacher Interview Protocol

I am interested in investigating factors that impact teacher preparedness for and implementation of instructional strategies that cater to the learning of African-American girls in single-gender classrooms. Your contribution to this research is invaluable and will provide beneficial information for educators. It will also add depth to this research.

1. What is culturally relevant pedagogy and what training have you received on culturally relevant pedagogy?

2. What are single-gender instructional strategies and how do they differ from co-educational instructional strategies?

3. What types of instructional activities do you implement in your classroom to specifically support the learning of girls?

4. Describe students’ reactions to these learning activities, challenges that you face in implementing them, and how you overcome the challenges.

5. What types of instructional practices do you use to support the learning of African-American students in your classroom? (Are these instructional practices reflected in your weekly lesson plans?)

6. Describe students’ reactions to these learning activities, challenges that you face in implementing them, and how you overcome the challenges.
7. What has prepared you for teaching African-American girls in single-gender classroom environments?

8. How does your administrator/supervisor support your implementation of single-gender instructional strategies? (Please provide specific examples of support or lack of support.)

9. How does your administrator/supervisor support your implementation of culturally relevant pedagogy? (Please provide specific examples of support or lack of support.)
APPENDIX D

Administrator Interview Protocol

I am interested in investigating factors that impact teacher preparedness for and implementation of instructional strategies that cater to the learning of African-American girls in single-gender classrooms, including administrators’ behaviors. Your contribution to this research is invaluable and will provide beneficial information for educators. It will also add depth to this research.

1. What is your role as an administrator?

2. Can you describe a typical day for you as an administrator?

3. As an administrator, what expectations do you have of teachers and what requirements do you set for them?

4. What are single-gender instructional strategies and how are they different from co-educational instructional strategies?

5. What is culturally relevant pedagogy?

6. Do the teachers that you supervise, who teach African-American girls, implement gender-inclusive instructional strategies for girls in their classrooms? If so, how? If not, why not?

7. Do the teachers that you supervise, who teach African-American girls, implement culturally relevant pedagogy in their classrooms? If so, how? If not, why not?
8. How do you support teachers in teaching African-American girls in single-gender classrooms?

9. How is specific instructional feedback provided to teachers who teach African-American girls in single-gender classrooms?
APPENDIX E

Document Analysis Protocol

Document Title:

Document Number/Code:

Date Reviewed:

Document Description:

Brief summary of contents:

Significance or importance of document:

How does it support or refute other, earlier understanding?

Preliminary themes:

Important People:

Important Quotes:

What did I learn?

Is the document central or critical to a particular idea/notion? If so, how?

Is a copy of the document filed with another project? If so, where?
REFERENCES


