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Gender and Learning Outcomes: A Phenomenological Study on the Influence of Effective Teacher Instructional Practices of Third to Fifth-Grade African-American Boys in Mathematics

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ABSTRACT

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GENDER AND LEARNING OUTCOMES: A PHENOMENOLOGICAL STUDY ON
THE INFLUENCE OF EFFECTIVE TEACHER INSTRUCTIONAL PRACTICES
OF THIRD TO FIFTH-GRADE AFRICAN-AMERICAN BOYS IN
MATHEMATICS

Committee Chair: Trevor Turner, Ph.D.

Dissertation dated August 2018

The purpose of this study was to examine the lived experiences of how three African-American female teachers' instructional practices impact third- to fifth-grade African-American males in mathematics based on gender and learning outcomes. The research design of this study utilized a qualitative and quantitative phenomenological model to examine a particular group of teachers and their students at a suburban metropolitan Atlanta school district. The researcher conducted data analysis using a

variety of statistical testing to examine the relationships between student learning outcomes and gender, race, teacher perceptions and beliefs, teacher expectations, teacher-student interactions, student behavior, differentiated learning, and parental influences for each grade level. The findings from this research show how both internal and external factors can contribute to student learning outcomes as well as how common themes emerged related to pedagogical practices. Moreover, the results of the study indicate that educators must come to terms with the reality of their teaching practices. The study shows how three African-American teachers successfully promoted effective teaching practices that provided an equitable learning environment that impacted both the quality and quantity of teaching and learning for African-American students in their learning outcomes.

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MATHEMATICS

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

BY

DARLENE HERBERT

DEPARTMENT OF EDUCATIONAL LEADERSHIP

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CHAPTER I

INTRODUCTION

Over the past 40 years, there has been significant research indicating gender as one of the many “hidden curriculums” taught in our nation's schools (Sharp, 2016). This concept of the hidden curriculum is stated as lessons that are learned informally and unintentionally. This includes the behaviors, attitudes, and perspectives that students learn while attending school. These messages and values are communicated in language, teacher behaviors and teacher instructional practices (Sadker, 1995). As a result, girls and boys learn gender structures and meanings in the classroom that help to reinforce what is expected of them (Sadker, 1995). These differences in expectations lead to differences in what is taught which can lead to differences in how boys and girls are expected to behave and perform academically (Scantlebury, 2009). Across the country, this discrepancy is notable in the achievement of African-American boys and young men in our education system to date.

Research studies on gender equity and the relationship between student achievement in the classroom between boys and girls emerged during the early 1970s. Title IX, the Education Amendments Act of 1972, was a groundbreaking statute enacted to prohibit discrimination on the basis of sex in any federally funded education program or activity (U. S. Department of Education, 2015). The principal objective of this law,

according to the U. S. Department of Education, was to exclude the use of federal money to support sex discrimination in education programs which included traditional educational institutions such as elementary and secondary schools, colleges, and universities. Title IX obligations also applied to recruitment, admissions, counseling, financial assistance, athletics, sex-based harassment, treatment of pregnancy and parenting, student discipline, single-sex education, and employment. However, despite the passage of this federal law mandating equal educational opportunities and the significant progress for all students in education, serious inequities for students of color still remain in our nation's schools. These inequities reveal large gaps in test scores by race/ethnicity and family income. Consequently, understanding gender disparities cannot be fully understood without review of these two educational indicators including the factors of teacher perceptions and beliefs, teacher-student interactions, gender, student behavior, differentiated learning, and parental influences, particularly for African-American boys on understanding this issue.

Acquiring an education in America is a means to achieving success in life. However, many African-American males attending public schools face critical challenges to achievement, despite numerous school reform efforts. Furthermore, it is worth noting that the lack of a diverse workforce also plays a critical role in ensuring equity in our educational system. The research shows that diversity in schools among teachers can provide significant benefits to students. Currently, teachers of color account for only 18% of the elementary and secondary workforce, while the overwhelming majority is white (U. S. Department of Education, 2016). As we enter the 21st century, these same

inequities aimed at closing the achievement gap continue to plague African American students.

Statement of the Problem

The educational state of African-American males is not a new phenomenon (Prigmore, 2013). While gains have been made over that past 25 years, the performance of African-American students across the United States continues to show these students performing at lower levels nationally compared to their white counterparts. According to the analysis by the National Assessment of Educational Progress (2015), the average reading and math scores for students in both grades declined. Only 18% of African-American fourth graders were proficient in reading, and 19% scored proficient in math by the end of the 2013-2014 school year. The state school in Georgia selected for this study reflected similar findings.

Data from the Governor's Office of Student Achievement (2013) show that for the 2013-2014 school year, Criterion-Reference Competency Tests (CRCT) revealed 29.0% proficiency in fourth-grade reading, 22.6% in fourth-grade math, and 29% proficiency in fourth-grade science compared to the scores of other ethnic groups. While this local school data may reflect a slightly higher percentage than the nation, the disparities in academic achievement for 2015-2016 fifth-grade African- American students are still alarming. Furthermore, what is even more unsettling is why the U. S. Department of Education has not conducted a single research study to address this male academic issue? This study sought to examine how teacher instructions impact third- to

fifth-grade African-American males in mathematics based on gender and learning outcomes from the perspective of educators and students from a suburban Title I Elementary School in a metro Atlanta School District.

Purpose of the Study

The purpose of this qualitative phenomenological study was to examine the lived experiences of how three African-American female teachers' instructional practices impacted third- to fifth-grade African-American males in mathematics based on gender and learning outcomes. The study is important because it provides information about how student expectations can be limited based on race and gender and how these differences are communicated during daily teacher-student interactions that can influence student academic success. Since gender bias is often subtle and unconscious, raising the awareness of the problem to educators is the first step toward taking actions to decrease and eliminate this issue in the classroom. Moreover, examining teachers' perceptions about gender and how gender influences teachers can serve as a catalyst to encouraging and promoting effective teaching practices that provide an equitable learning environment for all students in the classroom and the entire school. Therefore, teachers' instructional practices play a critical role in challenging stereotypical gender roles in the classroom.

Significance of the Study

This study sought to determine how teachers can assess and evaluate their own teaching practices in the classroom to encourage and promote equal opportunities for all

students throughout their educational experiences. The research also acknowledged the racial, gender, income, and ethnic differences in the classroom and how educators must develop pedagogical practices and strategies to meet the needs of all learners fairly and equitably.

As state and national standards increase educators' accountability, there has never been a time where teachers' instructional practices have been under more intense scrutiny. Due to this heightened level of concern, 40 states have adopted standards to ensure improved teacher quality through professional development and student performance. Teachers are observed and evaluated on their teaching practices as well as student growth class percentiles. This data are also used to measure the school's overall effectiveness of the College and Career Performance Index (CCRPI) score. This CCRPI report, enacted by the state of Georgia, measures student content mastery, student achievement gap, and monitors student progress from year to year based on statewide performance targets. As a result, this research study comes at a critical time to help educators, education leaders, particularly principals in a suburban, Title I school, adopt self-reflective practices that address their instructional impact on third- to fifth-grade African-American males in mathematics based on gender and learning outcomes.

Research Questions

This qualitative phenomenological research study on the influence of teacher instructional practices of third- to fifth-grade African-American boys in math was guided by the following seven research questions:

- RQ1: What is the relationship between teacher perceptions and beliefs of mathematics instructional practices as it relates to African-American boys' learning outcomes?
- RQ2: What is the relationship between teacher expectations of mathematics instructional practices as it relates to African-American boys' learning outcomes?
- RQ3: What is the relationship between teacher-student interactions of mathematics instructional practices as it relates to African-American boys' learning outcomes?
- RQ4: What is the relationship between teacher instructional practices of mathematics instructional practices as it relates to African-American boys' learning outcomes?
- RQ5: What is the relationship between behavior and mathematics instructional practices as it relates to African-American boys' learning outcomes?
- RQ6: What is the relationship between differentiated learning of mathematics instructional practices as it relates to African-American boys' and learning outcomes?
- RQ7: What is the relationship between parental influences of mathematics instructional practices as it relates to African-American boys' learning outcomes?

Summary

The racial achievement gap data are distressing, particularly for African-American boys who represent 16% of the nation's student population (National Center for Education Statistics [NCES], 2015). These students consistently score 20-30 points below student achievement compared to white students from just the 2008-2013 school years alone (Educational Opportunity Gap Oversight and Accountability Committee [EOGOAC], 2015). Consequently, the results of these disparities should make educators come to terms with the reality of their teaching practices in the classroom. The subliminal messages and values teachers transmit in their language, behavior, and instruction can directly impact both the quality and quantity of teaching and learning for African-American students in their student achievement. This research sought to examine the growing gender and achievement gap of African-American males in mathematics.

CHAPTER II

REVIEW OF THE LITERATURE

After a review of the literature on gender and academic achievement, several factors were discovered that are critical to understanding this issue. The research materials pointed to teacher perceptions and beliefs, teacher expectations, teacher-student interactions, teacher-instructional practices, student behavior, differentiated learning, and parental influences.

After decades of literature, research showed that girls were being shortchanged in male-dominated schools, especially in math and science. The growing area of interest currently underway now worries that boys are being shortchanged (McGee-Bailey & Whitmire, 2010). Launched in 2009, the nation's largest educational reform, the adoption of the Common Core State Standards, was set to redesign the curriculum to place emphasis on learning early literacy skills, teaching methods, and improved curriculum resource materials for raising student achievement. In spite of these changes, the data continue to reveal the widening academic gap between boys and girls, not only by gender but also by race. While many reports and research have documented the achievement gap between males and other students, schools must be willing to look at perceptions and beliefs, classroom interactions, society, modes of communication, teaching approaches, and learning styles that are unique to black male students. These

characteristics must also be of equal importance as those of other students in public education (Emdin, 2012).

Numerous studies have shown that these factors influence treatment of African-American students in the classroom. Research also shows that it is inappropriate to view all children as being the same. Vast cultural differences exist among racial and ethnic groups. Many of these differences are unknowingly transmitted in the messages and values teachers, principals, school administrators and other school personnel communicate to students in their day to day interactions that can adversely impact student achievement. However, once these differences are acknowledged, educators and policymakers can equip themselves with the tools to meet the needs of African-American students, especially to help black males to become more interested and competent learners.

Teacher Perceptions and Beliefs

Teacher perceptions and beliefs towards mathematics and science have a direct impact on how students feel about the subject. According to Davis and Andrzejewski (2009), the decisions that teachers make in the classroom are influenced by their perceptions and beliefs. These assumptions are based on teachers' values and principles, developed by their experiences, and have shaped their practice. They are often covert, multi-layered, not easily identified, and difficult to change. Rosenthal and Jacobson noted that teachers' perceptions and beliefs about student ability can affect students' actual achievement.

These findings are particularly troubling for African-American students. Throughout the literature on teachers' beliefs, the research revealed these perceptions and beliefs have a profound impact on classroom teaching and learning. Teachers can consciously or unconsciously bring about unanticipated consequences in the classroom such as misinterpreting student motives and behavior, overlooking or marginalizing students who need them, and limiting their own professional potential. Additionally, case studies have shown that there can be a significant disparity between a teacher's beliefs about their interactions compared to their actual classroom practice (Sadker, 1995; Scantlebury, 2009). However, the research clearly suggests that teachers' perceptions and beliefs towards learning dictate how decisions are made and communicated daily in the classroom.

Teacher Expectations

Teachers are one of the most important role models in transmitting learning expectations for boys and girls throughout their educational experiences. These expectations are demonstrated by teachers in the way that girls and boys are treated and how they are taught in the classroom (Sadker, 1995; Scantlebury, 2009). Schools with teachers that communicate high expectations to students in the classroom setting can and do affect student outcomes favorably (White, 2009). The research literature described a phenomenon known as the "stereotype threat" which impacts the way teachers and students view themselves. Stereotype threat is explained as both teacher and student having an awareness of negative stereotypes presupposing academic inferiority (Aronson, Cohen, & Montrosse-Moorhead, 2009). However, students worry that they will confirm

the intellectual inferiority alleged by such stereotypes in their class test performance and learning (Aronson et al., 2009). These expectations promote different attitudes and behaviors from boys and girls. For African-American males, racial and gender stereotypes are hard to avoid in American life. The images from media, music, news, and television programs take characteristics of black culture, tie them to anti-school identities, violence, and misogyny, and use them as forms of entertainment (Edmin, 2012). To date, many of these images have spurred many black students from elementary, middle, high school, and college students to become social justice advocates. Creating and joining movements such as Black Lives Matter to address racial inequities in school finance, suspensions, drop-out rates, incarceration, police violence, and school closures since they believe their communities are under direct attack (Barbain, Gonzales, Christensen, Burant, Salas, Walters, 2015). These scenarios paint a false perception of black males that they must deal with when they enter the classroom or are on school grounds (Edmin, 2012).

Furthermore, “these negative stereotypes characterized black boys as criminal, oversexed, lazy, violent, and unintelligent” (Corprew, 2013, para. 2). The research also shows that educators are not immune to these messages and may pick up and act upon these stereotypes during classroom instruction and interactions. As a result, teachers make generalizations about their students and their academic abilities. Consequently, African-American males are aware of the teachers who hold negative perceptions of them based on their language, behaviors and instructional practices (Corprew, 2013).

As a result, this tends to lead some African-American students to underperform on challenging classroom task or tests. This concept subtly influences the way teachers promote low expectations for poor and minority students. Consequently, teachers will lower expectations for minority students based on their perceptions of the students' current performance rather than the students' potential to meet and perform the targeted student learning outcomes.

Stereotype threat research also indicated that the burden of stereotypes plays a crucial role in the achievement gap for African-American students, particularly males. Students may perform below their potential due to the stress of being under constant evaluation in the classroom. Nationally, African-American boys account for 61% of all school suspensions, comprise 20% of all special education students, and are five times more likely than girls to be classified as hyperactive (U.S. Department of Education, 2015; Schott Foundation Report, 2015). Unfortunately, these findings tend to perpetuate the stereotypes of African-American males as behavior problems, disruptive, disrespectful, and academically deficient. Furthermore, it influences teachers' expectations about African-American students' academic achievement (Rudd, 2015). As a result, African-American males are keenly aware of the negative stereotypes about their intellectual abilities regarding their race and continue to experience high levels of stress in school because of this (Aronson et al., 2009).

Teacher-Student Interactions

A significant portion of the literature illuminated this phenomenon based on teacher-student interactions. Documents published by the Scholars Strategy Network in

2013 show how the impact of various forms of racial and gender stereotyping are common in American classrooms. These stereotypes can take many forms, some direct and some indirect. For many teachers, males are expected to independent, assertive, and competitive compared to the female counterparts who are seen as passive, sensitive, and supportive. According to the research, teachers call on boys more often than girls and encourage more assertive behavior in boys than in girls, ask boys more higher-order questions, give boys more extensive feedback, and use longer wait-time with boys than girls (Baker, 2016). These gender roles have changed little over the past twenty years in teacher-student interactions (Park, 2016).

However, the experience for African-American males is to the contrary. Corprew (2013) asserts the following:

Teachers, for numerous reasons, have difficulties understanding and dealing with young men of color in the classrooms. African America males act in ways that do not fit teacher preferences for classroom etiquette. Teachers perceive African American boys as behaving recklessly and responding to frustrations by acting tough and engaging in bravado posturing. (para. 2)

Additionally, the stereotypes about gender and academic achievement teachers bring to the classroom also influence classroom interactions negatively. These inequities in student-teacher interactions show that girls and boys continue to be socialized in ways that work against gender equity (McGee-Bailey & Whitmire, 2015).

The research also cites that adults, teachers, and schools have the greatest impact on adolescents' attitudes, self-esteem, and career aspirations. For both girls and boys,

successfully completing and understanding their coursework gives them a sense of pride and security which helps build positive self-images. Therefore, gender differences in teacher-student interactions can adversely affect girls' and boys' experiences in mathematics.

Teacher Instructional Techniques

In addition to teachers' perceptions and beliefs, academic achievement is also impacted by gender, teacher expectations, teacher-student interactions and teacher instructional practices. Creating a learning environment that fosters equity and high-quality instruction influences both the quality and quantity of education for all students. Teachers implementing effective instructional strategies will not only help African-American males to learn rigorous content but will influence their commitment and engagement as well as contribute to influencing school-wide practices of classroom instruction.

It is widely believed among African-American educators that the use of culturally relevant instruction is needed in the classroom. The review of the literature states that attention to cultural differences in the organization and the delivery of instruction appears to be relevant for minority students to achieve academic success. This proposed method for teaching minority students emerged during the early 1990s and is a pedagogy that empowers students intellectually, socially, emotionally, and politically by using cultural references to impart knowledge, skills, and attributes (Ladson-Billings, 2009). Moreover, to develop an instructional program that is relevant to students, educators must understand the core beliefs and experiences of their student's culture. This build on

cultural competency teaches instructors to understand cultural differences and work through their biases. With this awareness, teachers are providing students with opportunities to succeed and show students that their instructors care about their personal experiences, thereby bridging the gap between the student's home and school life while still meeting district and state achievement standards.

Gender

Gender-based or single-sex schools and classrooms as a concept have been around since the beginning of education systems in America. According to Cable and Spradlin (2008), single-sex schools and classrooms can be described as a diverse type of setting from individual classes, programs after school, required programs, voluntary programs, and programs that are specifically designed to remedy gender inequities and encourage cultural and racial pride. Dr. Leonard Sax (2016), one of the leading proponents for separate gender education and the founder of the National Association for Single Sex Public Education (NASSPE), asserted dramatic brain differences between boys' and girls' development and that boys would thrive more in differently structured classroom settings. Additionally, Sax argued that students' benefits from gender-based classrooms include higher self-concepts and better focus than students in coeducational institutions. While proponents of single-gender classrooms have been in extensive discussions about gender, very little research has been presented about the topic. Many of the studies on single-sex classrooms or schools produce inconsistent and inconclusive results, including a research study conducted by the U.S. Department of Education's

Executive Summary of Single-Sex Versus Coeducation Schooling Systematic Review in 2005 which yielded mixed results.

A resurgence of gender-based schools emerged in response to two federal policies, Title IX and The No Child Left Behind Act of 2001, based in part on school-level data that showed achievement gaps between males and females and even disparities among race and socioeconomic status. Furthermore, the No Child Left Behind legislation, allowed for parents who were disillusioned with their children's current educational experiences to explore and have a renewed interest in single-sex classrooms as a means of reducing the achievement gap and improving their child's achievement outcomes (Cable & Spradlin, 2008). To date, districts nationwide, including Georgia, have been implementing single-sex schools and classrooms models for ways to improve achievement levels and improve the quality of education for all students. To ensure that guidelines are followed regarding single-sex classes and schools, the U. S. Department of Education (2005a) clarified requirements for offering K-12 single-sex classes to remain in compliance with federal laws.

Student Behavior

Student behavior is another crucial component that must be examined to understand the complexity of this issue. The existing research implies that racial bias exists among African American boys who are disciplined more often and receive more out-of-school suspensions and expulsions than their white counterparts (Rudd, 2015). Based on these numbers, African-American males were found to be classified as overly aggressive and more likely to be disciplined than any other ethnic group. However,

numerous studies have also shown, including the most recent 2014 study conducted by the Indiana Education Policy Center that African-American males do not *act out* in the classroom no more than their white peers (Rudd, 2015). As a result, many of latest research findings tend to conflict with the prevailing attitude of African-American males themselves, which continues to perpetuate the negative assumptions about their abilities, their aspirations and academic achievement throughout their educational experiences in and outside of the classroom.

Differentiated Learning

Another area that emerged from the literature regarding gender and academic achievement is learning styles. While gender differences in learning styles are widely debated, many school districts across the nation use them as a powerful tool to modify teaching to fit the needs of different learners. Dr. Leonard Sax, a leading proponent of separate gender-based education, cited a study on brain development conducted by the National Institutes of Health that supports learning style differences for boys and girls (Odak, 2015). These gender differences cause boys and girls to react differently to instructions within the classroom. Ironically, many educators and school districts across the country implementing the nation's school reform of the Common Core State Standards (CCSS) seek to provide the appropriate level of instruction and intervention for their diverse student populations. By using the CCSS performance data and monitoring student learning goals, teachers must develop lessons that meet the individualized needs of students from different backgrounds, learning styles and levels of attainment.

Currently, many African-American educational advocates believe this practice is not being reflected in today's classroom, particularly for African American males. Dr. Juawanza Kunjufu (2005), a leading educational consultant and renowned author of several books addressing the plight of African-American students in public educations, primarily believes that schools have virtually ignored and/or neglected the fact that boys and girls learn information differently and that they mature at different rates. Additionally, he has devised learning styles modeled to meet the needs of African-American boys, arguing that this is just one of many components that he believes explains the widening achievement gap between black and white students. However, the consensus among researchers is that for all students to achieve, teachers must adjust their pedagogy to meet the learning needs of their students.

Parental Influences

Parental influence is another important factor that contributes to gender and academic achievement of African-American males. Research and theory suggest that parenting is an important determinant of behavior and academic achievement among families (Hines & Holcomb-McCoy, 2012). With a startling 72% of black children being raised in single-parent homes, the vast majority headed by women, has prompted many educators to suggest this is one of the root causes for low academic achievement among African-American students (National Association of Educational Progress [NAEP], 2015). Families play an active role in gender-role socialization by the ways that children are viewed and treated differently by their parents as well as the way that parents organize their child's environment (Park, 2016). Parents dress boys and girls differently

and provide different activities and organizations to join to keep them engaged (Park, 2016). Furthermore, these parental structures influence the role models that are available for their child to imitate and reinforce expected behaviors. Gender expectations from parents can have its advantages, but can certainly limit boys and girls development in the classroom.

For African-America males, the bulk of the research and literature on African-American parents continues to depict them as disengaged and uninvolved despite the limited studies in this area. Most of the research focuses on parenting styles and their influences on child behavior. However, researchers, scholars, educators, and parents all agree that parental gender and academic expectations are vital to every child's academic success.

Study Variables

Moderating Variable: Societal Expectations

Study after study has also shown how societal expectations play a significant role and is a moderating variable in how boys and girls perceptions, beliefs, and expectations impact their learning outcomes. These expectations promote different attitudes and behaviors from boys and girls. For African-American males, racial and gender stereotypes are hard to avoid in American life. The images from media, music, news and television programs take characteristics of black culture, tie them to anti-school identities, violence, and misogyny, and use them as forms of entertainment (Edmin, 2012). These scenarios paint a false perception of black males that they must deal with when they enter the classroom or are on school grounds.

Furthermore, these “negative stereotypes characterized black boys as criminal, oversexed, lazy, violent, and unintelligent” (Corprew, 2013, para. 2). The research also shows that educators are not immune to these messages and may pick up and act upon these stereotypes during classroom instruction and interactions. As a result, teachers make generalizations about their students and academic abilities. Consequently, African-American males are aware of the teachers who hold negative perceptions of them based on their language, behaviors, and instructional practices (Corprew, 2013). Ultimately, the lack of positive portrayals of African-American males transmitted through society helps to shape their understanding of themselves and the world around them.

Dependent Variable

The dependent variable, student academic achievement and the independent variables: teachers’ perceptions and beliefs, teacher expectations, teacher-student interactions, teacher instructional practices, gender, student behavior, differentiated learning, and parental influences are referenced in various research studies. The research highlights other independent variables for consideration which are teacher content knowledge, instructional leadership, student motivation and professional development to understand the various aspects of single-sex schools and classrooms to improve student content achievement. The studies also conclude that the data for the effectiveness of single-sex schools and classrooms versus coeducational settings have been inconsistent or inconclusive, indicating for some schools that it has been beneficial for some, but not for all. More in-depth research is needed to address the gender and academic achievement

gap and its impact on teacher instructional practices for African-American and Hispanic students.

CHAPTER III

THEORETICAL FRAMEWORK

For this qualitative study, the researcher sought to study the impact of teacher instructional practices on third- to fifth-grade African-American boys in mathematics examining the frameworks of the constructivist theory by Jerome Bruner (1966) and critical race theory by Derrick Bell (2015) to investigate the barriers of race, gender and academic achievement in a suburban, Title I school. These two theoretical frameworks consider teacher perceptions and beliefs, teacher expectations instructional practices, teacher-student interactions, student behavior, differentiated learning, and parental influences in validating whether a significant difference in achievement scores existed between the research variables and how these factors influenced student achievement among African-American males.

Theory of the Variables

For the purpose of this qualitative study, the instructional practices of the teachers and their interactions with their students based on gender and academic achievement are grounded in the following two theories: the constructivist theory and critical race theory. The constructivist theory authored by Bruner (1966) and critical race theory by Bell (2015) guided this research inquiry. These methods helped me to explain the teachers’

instructional practices as well as the interactions of African-American male students within the mathematics content domains.

The constructivist theory by Bruner (1966) is the method to describe the dependent variable, student achievement. The major theme embedded in this theoretical framework is that learning is an active process in which learners construct new ideas or concepts based upon their current/past knowledge (Bruner, 1966). The students select and transform information to build their own knowledge, from their active discussions with teachers, to build on their prior knowledge. In this approach, Bruner asserts that learning is an active and social process that allows the learner to build on what they already know. This method can be applied across all academic disciplines emphasizing continuous knowledge being developed over extended periods of time.

Likewise, the constructivist approach is used to describe the independent variables: teacher instructional practices, teacher-student interactions, and differentiated learning. This framework has been known to effectively improve instruction and student achievement (Hannum, 2005). Instructional practices in the classroom focus on constructing knowledge from real-world problems that foster critical thinking skills to create independent learners. Moreover, the approach promotes the teacher as a facilitator where students can work collaboratively through cooperative learning groups and differentiated instruction activities. Teachers who employ these instructional strategies seek to design a stimulating environment that facilitates active learning where students are intrinsically motivated.

Critical race theory, extended from the law and legal studies, is used to describe the remaining independent variables: teachers' perceptions and beliefs, teacher expectations, student behavior, and parental influences, and the moderating variable, societal expectations. This framework addresses the complex ways that race and power impact educational practices in school and the classroom. Furthermore, the tenets of this theory assert that racism is embedded in American attitudes and institutions, a part of everyday life for people of color (Delgado & Stefancic, 2006). The critical race theorist seeks to expose how educational practices help to promote inequities that exist in the classroom from the perspective of teacher-student relationships and how these inequities impact their interactions.

Definition of the Variables and Terms

Dependent Variable

Academic Achievement/Learning Outcomes refers to the learning outcomes students successfully complete from grade level to grade level from state tests, common assessments, and benchmark exams. Outcomes that are based on predetermined learning goals that have been adopted nationally and locally in each of the four content areas: language arts, mathematics, science, and social studies.

Independent Variables

Teachers' Perceptions and Beliefs refer to the social, emotional and academic characteristics of a student that can influence a teacher's judgment about a student's academic abilities and achievement.

Teacher Expectations refer to a teacher's belief, perceptions, and what they know about a student, can shape expectations on individual student learning outcomes.

Teacher-Student Interactions refer to the relationship between the teacher and students related to social, emotional, instructional, behavioral, and procedural-type interactions in the classroom.

Teacher Instructional Practices are effective teaching strategies/methods that guide interactions in the classroom to meet student learning objectives.

Gender is the Identification of students as male or female and their expectations and limitations.

Student Behavior is the way a student conducts him or herself in the classroom setting.

Differentiated Learning refers to the different ways students learn information that the classroom teachers assess to ensure their instructional methods address the individual needs of all students.

Parental Influences are the attitudes, actions, and opinions that shape a child's learning about school and community.

Other Variables

Measures of Academic Progress (MAP) refers to a computer adaptive norm-referenced test that compares a student gains over a period of time. The MAP assessments are aligned to state standards in reading, English Language Arts, math, and science to track skill development and mastery throughout the school year.

Relationship among the Variables

Figure 1 illustrates the relationship among the independent and dependent variables of this study.

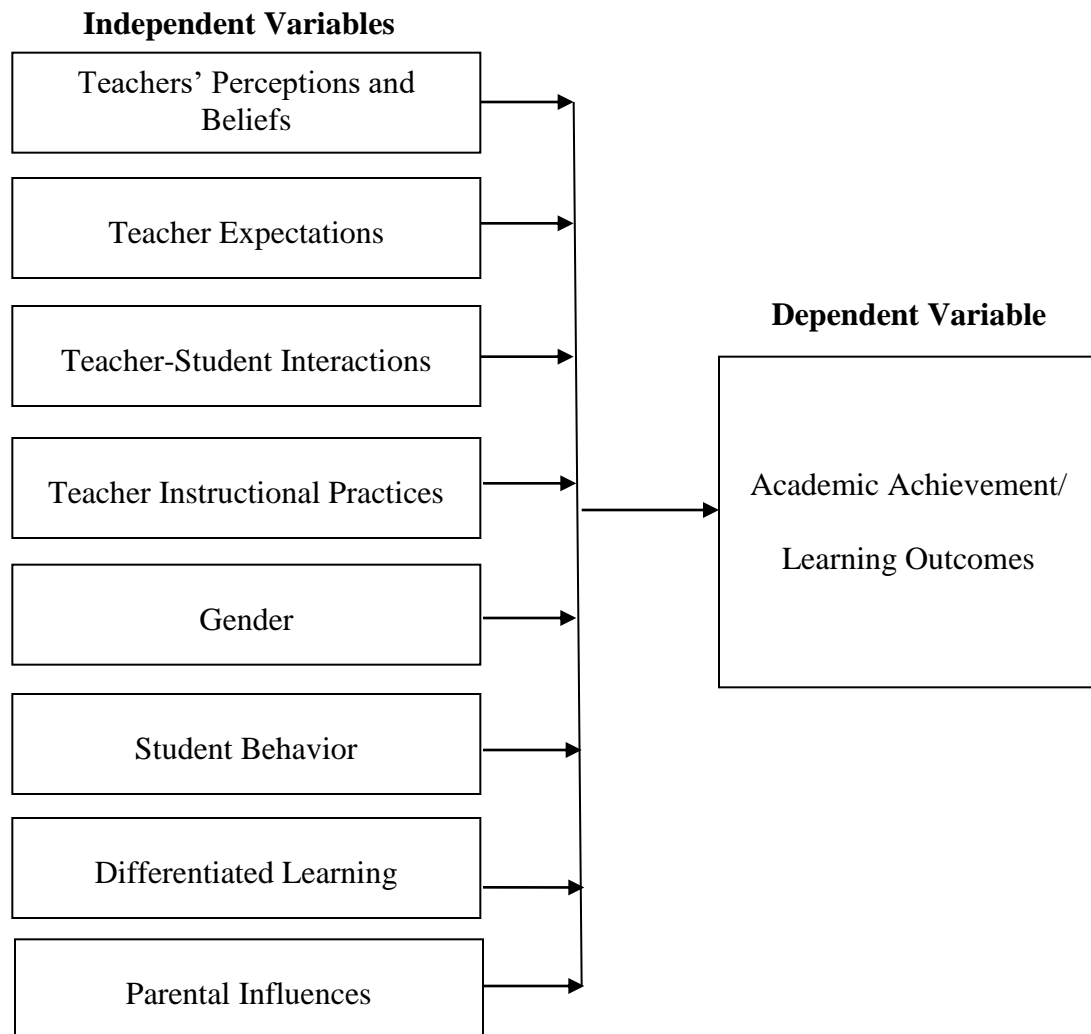


Figure 1. Relationship among the variables.

CHAPTER IV

RESEARCH METHODOLOGY

Introduction

The research methods used throughout this study were approved by the local schools' district Research and Grants Division. The study investigated three teachers' lived experiences on how their instructional practices influence the learning outcomes of third- to fifth-grade African-American males in mathematics. More specifically, the study sought to gain insight to determine if gender, race, teacher perceptions and beliefs, teacher expectations, teacher-student interactions, student behavior, differentiated learning, and parental influences have an influence on teacher instructional practices. This chapter includes information about the research design and rationale for this type of study. The chapter also provides information about the participants, data methods, instruments, procedures, and data analysis. The methods section concludes with a discussion on the limitations of the study.

Research Design/Qualitative Approach

This research design of this study utilized a qualitative phenomenological model to examine a particular group of teachers and their students at a suburban metro Atlanta school district. Qualitative research uses detailed descriptions from the participants to explore the meaning individuals or groups ascribe to a social or human problem (Creswell, 2013).

Furthermore, the purpose of qualitative research is to study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them (Denzin & Lincoln, 2011). Therefore, the use of the phenomenological design was appropriate for the study because it is best suited for the selected research participants to share in detail, in their own voice, how their daily classroom instructional experiences impact African-American males in mathematics based on gender and academic achievement. The tenets of the phenomenological study support the belief in which knowledge and understanding are embedded in the lived experiences of a single individual or several individuals (Creswell, 2013). As the disparities of African-American males in the educational, academic, and achievement gap continue to increase, a phenomenological research approach is needed to understand the perceptions, expectations and instructional practices of teachers related to this issue. The researcher collected data from the participants who have experienced the concept or phenomenon to gain a consensus on the topic to improve educational outcomes for African-American male students.

Rationale for the Study

This qualitative phenomenological study was conducted to examine the instructional practices of third- to fifth-grade teachers in a metro Atlanta school district regarding the impact on gender and academic achievement of African-American males. This study is important because it provides information about how student's academic performance can be limited based on gender and expectations and how these differences are communicated during teacher-student interactions. Since these messages are

communicated in language, teachers' behaviors and instructional practices consciously and unconsciously, making teachers aware of the problem is the first step towards finding a solution. Examining teachers' perceptions about gender and African American male students and how these factors influence teachers' behavior in the classroom can serve as a catalyst to encourage and promote strategies that provide equal opportunities for all students.

Furthermore, teachers must learn to develop a pedagogy that practices self-reflection, analysis, self-awareness, recreation, action and self-discovery (Blaisé & Blaisé, 2004). Since the early 1990s Nation at Risk report, to Goals 2000 and now the Common Core State Standards, reform initiatives all have had one goal in mind: to improve teacher quality for effective school improvement using the above characteristics in some fashion or form. This increased educator accountability is a component of any teacher's annual evaluation. Moreover, teacher evaluation is one of the most controversial and influential accountability factors in the teacher quality agenda (Coleman & Dilworth, 2014). The Teacher Keys and Leadership Keys Effectiveness System implemented in Georgia was specially designed to monitor the instructional program during classroom visits through conferencing, discussions, constructive feedback and collaboration which leads to school improvement. This study sought to affect change in the teachers' instructional practices to assist in eliminating gender and other influences that can contribute to inequities of African-American males' academic achievement in math for improved classroom learning experiences as well as school outcomes.

Description of the Setting

The setting for this study includes three participants from a pool of 37 from a suburban Title I Elementary School in the metro Atlanta area. The faculty demographics were comprised of K-5 certified employees with the racial composition of 95% black, .03% white, and .03% Hispanic. Nearly 99.9% were female teachers compared to just 0.5% men. This predominately African-American staff varied in age as well as years of experience. Their ages ranged from 27 years of age to the oldest teaching in the building at 67 years. There was also a varying range of field experience among the faculty, with 57% teaching less than 10 years, 29% teaching between 11-20 years, 10% between 21-30 years, and 3% of the teaching staff with less than three years of experience. Currently, 30% hold Master of Arts degrees, 10.5% hold doctoral degrees, while the remaining 60.5% hold Bachelor of Arts degrees. All of the teachers at the school are deemed highly qualified by state standards. Over the past 5 years, the teacher attrition and retention rates have been 5% and 95%, respectively. The total student enrollment of the elementary school was 432. The student population considered for the study was comprised of 60 students, of which 53 participated, with a racial composition of 51 African Americans, 1 Asian, and 1 white student.

The school serves a mainly residential community including townhomes and single family home units, one high transient apartment complex, and three highly transient hotel/motel dwellings within a one-mile radius. It is a community school which places emphasis on partnerships with families to improve student learning and build healthy and strong family relationships. The school receives Title I funding due to the

large number of students (86%) receiving free and reduced lunch. Additionally, due to the Title X McKinney-Vento Education for Homeless Assistance Act, students are eligible to attend any local school regardless if they live within the designated school area or are staying in a homeless shelter or transitional housing. Currently, 3% of the student population attending this local research study school is categorized under the federal assistance act. Title I schools are schools that are classified by the federal government for providing additional funding for increased instructional support for students considered “at-risk” for performing below the state’s proficiency levels for academic achievement (U. S. Department of Education, 2005b).

One third-grade, one fourth-grade, and one fifth-grade elementary teacher were selected to participate in this study since each grade level is departmentalized. Departmentalization refers to the process of each teacher on the grade level is required to teach a specific content domain(s) while students move in rotation from classroom to classroom. The fifth-grade teacher (Teacher A) has 36 years of experience, the second fourth-grade teacher (Teacher B) has 11 years of experience; both have a Masters of Education degree. The last third-grade teacher (Teacher C) has 13 years of experience and holds a Bachelor’s of Education degree. All three teachers are African American but from culturally diverse backgrounds. Teacher A was born and reared in the country of Antigua and Barbuda, Teacher B was raised in America, and Teacher C was born and reared in the northeastern part South America, Guyana. Teachers A and B have taught upper-level (third- to fifth-grade) mathematics content domains throughout their academic careers. However, this is Teacher C’s first year as a third-grade mathematics

teacher. Subsequently, the students were selected from each of the three teacher's homeroom classes. Teacher A's classroom, classified as a high achievers class, had a total enrollment of 21 students of which 20 were African American and 1 Asian student, 12 girls and 9 boys. Teacher B's classroom, classified as the early intervention program (EIP), had a total enrollment of 16 students, 8 girls and 8 boys. The early intervention program allows for additional funding to provide support services for students who are performing academically below grade level (Georgia Department of Education [GADOE], 2012). Teachers A and B have both taught upper-level (third- to fifth-grade) mathematics classes throughout their teaching careers: 36 and 11 years, respectively. Teacher C's classroom, ranked as average, had a total of 17 students, 8 boys and 9 girls, of which both classes are comprised of 100% African-American students. This is Teacher C's first year as a mathematics instructor.

Sampling Procedures/Participants

Three participants were selected to guide the research study based on purposeful sampling. This technique allowed the researcher to choose the participants in the interview and observation portion. Participants were determined based on their grade level and their willingness to provide in-depth information to the research. These three members were also selected according to their classroom characteristics: classroom classifications (high achievers average and EIP classes which also impacts school funding) and their gender equity class ratios.

Each week's interviews were conducted with each teacher using open-ended questions and survey instruments constructed for this study. The participants were briefly

interviewed immediately after each classroom observation and completed the surveys at the end of the workday. Academic data was selected from weekly common assessment test scores. However, pre- and post-tests were administered at the beginning and end of the program using the Northwest Evaluation Association method called Measures of Academic Progress (MAPS).

Working with Human Subjects

Each participant received permission to participate in the study by the school principal. The researcher explained to the participants and administrator the purpose of the study and what would be needed from each of them. Participants were informed of their roles before the research and that the names of each member, as well as the school, would remain confidential throughout the study. All participants were asked to contribute, on a voluntary basis, information about their lived classroom experiences and allowed to view the study's findings at any time. Furthermore, since the researcher has worked closely over the years to build a rapport and establish trust with the participants in her role as the academic data coach and currently as the newly promoted assistant principal, this provided the teachers and students some degree of comfort and candidness and removed many barriers. Participants in the study felt confident to share their experiences both personally and professionally with ease despite the researcher's supervisory role in the building.

Data Methods/Instruments

The survey instruments administered to both teacher and student participants were developed using a gender (male/female) calculation of averages, as well as a 2-point and

4-Point Likert scale of : Yes or No and strongly agree, agree, disagree, and strongly disagree. The authors of *Failing at Fairness: How Our Schools Cheat Girls* by Myra and David Sadker (1995), designed the survey instruments used and modified by the researcher. The teacher survey consisted of 20 coded questions classified into five categories. These five categories: Instructional Techniques, Academic Perceptions, Student Behavior Perceptions, Societal Perceptions, and Aesthetics. The questions gained insight into the teachers' attitudes and beliefs on instructional techniques and approaches, expectations for girls' and boys' behavior and academic achievement, and societal factors during math class.

Likewise, the student survey consisted of 17 coded questions classified into three categories: Student Engagement of Instructional Techniques, Student Perceptions of Teacher Interactions, and Student Perceptions. These questions were to elicit insight into how students perceive their daily involvement in classroom activities and discussions with the teacher.

Interview questions were developed based on the independent and dependent variables and conducted through all phases of the research study. The interview questions were open-ended questions with the same wording asked to each respondent. The teachers answered questions to the best of their abilities; I then followed up with clarifying questions to ensure that I captured the essence of their statements. These one-on-one conversations provided ample discussions in understanding the phenomenon and were typically conducted during and after school hours, through their common planning period, activity period or after school planning time. The construction of the questions

reflected the purpose of the study with the intent of describing the impact of lived experiences on teacher instructional practice for African-American males in mathematics based on gender and learning outcomes.

Data Collection Procedures

Data collection for this research study included several sources: classroom observations, journaling (field notes), teacher reflections, casual conversations, documents, test scores, interviews (face-to-face, telephone), audiotape, and surveys. The data collection methods for each classroom took place over a five-week period from February to March 2017. The researcher spent an average of 1 hour per day, 3 times a week, completing over 15 observations totaling over 16 hours with the teacher(s) and classes. My primary role was observer and interaction with teacher and students if and when contact was warranted. During the interviews, the researcher also observed the behaviors and nonverbal expressions from participants and documented in the field notes of the study. Test scores were also collected during this phase to monitor and track the students' learning outcomes. Furthermore, it is important to note that during this observation phase, teachers were preparing students for their annual comprehensive summative assessment called the Georgia Milestones Assessment which would be administered during the month of April. This end-of-grade assessment measures student mastery of the Common Core State Standards and is a teacher and school evaluative component of the Teacher Keys Evaluation System (TKES) and the College and Career Ready Performance Index (CCRPI).

Data Analysis Strategies

Analyzing qualitative data is the process of preparing and organizing the data by reducing the data into themes through a process of coding and condensing themes, then representing the data in figures, tables or a discussion (Creswell, 2013). Using this process, the qualitative analysis of this portion of the study is phenomenological analysis because it provides information explaining the findings from the lived experiences of the participants of the study for improved outcomes in African-American males' educational experiences.

Data were analyzed from interview transcripts, observations, field notes, and questionnaires. A coding system was created to organize and identify emerging themes from the defined variables of the study which were: teachers' perceptions and beliefs, teacher expectations, teacher-student interactions, teacher-instructional techniques (student engagement), student behavior, differentiated learning, and parental influences. Additionally, some code themes emerged from in vivo codes, names that are the exact words used by participants. Although themes that appeared in the coding process were extensive, researcher reduced and combined them into six or seven themes. Next, the researcher interpreted the data by using the codes and themes to gain a larger meaning or understanding of the data based on my intuition and hunches linked with the large body of the research literature. Lastly, the researcher presented in a narrative form the captured essence of the experience of a discussion to answer the research questions.

Limitations of the Study

The researcher recognized that in conducting this qualitative phenomenological study, she approached the participant observation process with certain inherent biases. However, these limitations did not skew or negatively impact the data but were addressed and discussed during each part of the study. There were five limitations the researcher encountered during the research:

1. The first limitation was that the researcher conducted the study as an employee in a supervisory role of the school where the participants were selected. She did not allow these biases to impact the data analysis by employing the process of bracketing, which caused her to set aside the things she knew about the participants and the school.
2. The second limitation was the research findings are only representative of a specific group of students at this school. Therefore, the results are not conclusive of all schools.
3. The third limitation was participants were selected to guide the research study based on purposeful sampling. This technique allowed the researcher to select the participants in the interview and observation portion. Participants were chosen based on their grade level and their willingness to provide in-depth information to the research. These three members were also selected according to their classroom characteristics: classroom classifications (high achievers average, and EIP classes which also impacts school funding) and their gender equity class ratios.

4. The fourth limitation of the study is that all of the teacher participants were African-American teachers. This is considered a limitation since a large percentage of public schools are aiming to increase teacher diversity. However, it is not reflected at this particular school. Furthermore, this is the first time in American history, where the majority of the school student population is comprised of predominately African American and Hispanic students (Holland, 2014). Therefore, the importance of this study is critical considering the changing student demographics and especially since African-American teachers make up a large population of urban schools, but the achievement gap persists.
5. During this observation phase, teachers were preparing students for their annual comprehensive summative assessment called the Georgia Milestones Assessment which would be administered during the month of April. This end-of-grade assessment measures student mastery of the Common Core State Standards and is a teacher and school evaluative component of the Teacher Keys Evaluation System (TKES) and the College and Career Ready Performance Index (CCRPI). The timing of these observations is considered a limitation because they may have influenced the behavior of how the teachers and students conducted themselves in the classroom. This assessment measures the students, teachers, and school's effectiveness ratings based on the end of year performance.

CHAPTER V
ANALYSIS OF THE DATA

Introduction

The purpose of this phenomenological study is to examine how teacher instructional practices influence third- to fifth-grade African-American males in mathematics based on gender and learning outcomes. This study explored variables that included teacher perceptions and beliefs, teacher expectations, teacher student-interactions, teacher instructional practices, student behavior, differentiated learning, and parental influences. The data collected sought to examine the relationship between gender and learning outcomes and other variables that influence African-American male performance in mathematics. The researchers' findings are outlined in the remaining part of this chapter.

Background

The research sought to survey both students and educators in their natural setting to interpret how teacher instructional practices influence third- to fifth-grade African-American males in mathematics based on gender and learning outcomes. The research conducted eight teacher interviews, observations and discussions that included 53 student

participants over a 4-week period. Additionally, student surveys were administered to all student subjects.

Analysis of Research Questions

The phenomenological study of how teacher instructional practices influence fifth-grade African-American males in mathematics based on gender and learning was guided by seven research questions. The participant's answers to the seven research questions provided a detailed analysis of their responses as well any emergent themes. These emergent themes represent the thoughts and attitudes of the teachers' instructional practices and their influence on fifth-grade African-American boys from their perspective.

RQ1: What is the relationship between teacher perceptions and beliefs of mathematics instructional practices as it relates to African-American boys' learning outcomes?

Each teacher emphatically stated that learning outcomes for students were directly related to a teacher's perceptions and beliefs about his or her students. All three teachers were in agreement that perception of anything is critical, especially students. Teacher A stated the following:

If you think a student is unable to perform, then you will treat the student as if he is unable to achieve, regardless of his or her disposition. However, if you know that students are capable than you will give each and every one of them the information needed to reach their full potential. (Personal communication, March 30, 2018)

Teachers B and C agreed with this statement and the results of their data from teacher survey questions 5, 7, 8, 13, and 15 were unanimous in this finding. All three teachers felt there were no academic differences in student learning outcomes in mathematics between boys and girls. Yet, they encouraged and expected girls to play a prominent role in the classroom during discussions, group work, projects, and independent coursework. Moreover, based on numerous interviews teachers felt that girls seemed to settle down more easily. However, many of the boys across the grade levels were as equally focused and challenged during math class. Based on observations, teacher responses were consistent with their perceptions and beliefs demonstrated in the classroom.

RQ2: What is the relationship between teacher expectations of mathematics instructional practices as it relates to African-American boys' learning outcomes?

Teacher expectations were a significant theme for the teachers throughout this research study. All three participants said that they hold all students to high standards. Teacher A exclaimed, "I expect the student to come in to learn. Students are coming to an institution of learning not just for academics, but for life learning skills" (personal communication, March 30, 2018). Teachers B and C were in agreement. These participants expressed, both formally and informally, that expectations are very important to their students and amongst each other. This question struck a chord with each of the teachers and allowed the researcher to gain greater insight into how the participants truly felt about their African-American male and female students. Teacher expectations held a

dual meaning for them. Expectations for their students transcended from the classroom to students' life skills. All three teachers stated that all students must meet their day-to-day high standards for goals within the classroom. However, they were also concerned with how these high standards would impact their future lives. During our ongoing discussions, teachers reiterated that they did not have different expectations for boys and girls since there were too many similarities between both groups' academic capabilities. Teachers A and B repeatedly referenced the term "gaps" in student learning, deficits in students' core foundational skills, and how they hold themselves accountable for filling in these gaps as well as helping their students succeed in and out of the classroom.

Teacher C affirmed this term and acknowledged that,

To close the gaps students need to be taught what they need to know and don't know and equipped with the right resources to find the answers. This is the same approach our students will have to use in life, solving real-world problems so they can overcome barriers they would surely face in their daily lives. (Personal communication, March 30, 2018)

During my observations, teachers encouraged all students to connect their prior knowledge to current topics. They also encouraged students to refer to their notes, anchor charts posted around the room or ask a partner buddy if they were stuck or did not understand a concept. Another way two teachers (B and C) encouraged students for staying focused and on task or for meeting their academic goals was by using incentives. All students had opportunities to receive extra points using the Dojo system, which is a computerized web-based app that calculates positive and negative behaviors. The points

allowed students to receive at the end of the week/month to have extra computer time, reading time, and/or free-time during their scheduled activity period. Additionally, public praise was notably given when boys and girls correctly answered problems. All three teachers sought to ensure tangible rewards were kept to a minimum so students would learn to value working hard and committing to completing a task/problem as a motivation technique as well as a method to promote life-long learning.

RQ3: What is the relationship between teacher-student interactions of mathematics instructional practices as it relates to African-American boys' learning outcomes?

The importance of establishing positive and nurturing interactions was repeatedly echoed from each of the participants. They believed that a positive and nurturing environment are two key ingredients towards improving academic performance for both African-American males and females. Each teacher consistently expressed that the classroom environment had to be one of acceptance for all. Teacher B articulated, "Students have to feel a sense of value since many of our students do not receive that from home. A few of my students have shared their personal stories with me on moments where they do not feel fully supported by family" (personal communication, March 30, 2018). What also emerged from the discussions on student-teacher interactions were how embracing their student's race, language, gender, class, and culture are concepts that intersect in the context of the classroom. These three African American teachers believed that each of these characteristics was a necessary component of each student's identity: that they navigate daily within the classroom. Teacher B initiated this topic by stating that

race, language, gender, class, and culture are issues that need to be openly discussed in regards to teachers working with African-American children. She said,

In order to teach a child, you have to first know who they are, and they have to know who they are. Also, they have to know that whoever they are, whatever class, gender, race, and socioeconomic background they come from, they are coming into your classroom, and their full identity must be accepted, addressed and spoken to in the classroom. (Personal communication, March 30, 2018)

Teachers A and C also stated that race, language, gender, class, and culture are issues that needed to be discussed. According to Teacher C, “Not just privately thought about and kept on the hush, hush. I believe we should communicate these issues with school and district personnel so they can be addressed” (personal communication, March 30, 2018). Moreover, Teacher A affirmed, that despite teaching a predominately African-American student population, students are culturally diverse based upon national origin.

We can't continue to assume all of our children have the same values, beliefs, and goals. Each child is unique, and their learning outcomes must be based on their individualized learning needs. Too many times we make generalizations about our students that can impede their growth and progress based on our limited expectations. I choose to create small successful moments for my students to thrive, because I believe that they are capable of any task, as long as I'm willing to meet them where they are at, gaps and all! Creating small moments let them know they can build on these opportunities to expand

success and take on bigger challenges in my classroom and throughout life.

(Personal communication, March 30, 2018)

In their descriptions of student-teacher interactions, each repeatedly referred to some of their previous comments related to “gaps” particularly concerning their male students. However, Teacher B was also the first to voice how gender issues emerged specifically during math, which she concludes, are based on students confidence levels. She stated,

If girls are working collaboratively together in a group all to themselves, they tend to have a higher level of confidence when they have to come to the board and explain it in front of girls. But when it's a mixed group, and they have to come up in front of the class, I see that my boys seem to be more confident when they are explaining a math problem. I don't wish it to be that way, so I push my girls to speak up. But it seems like when the boys are speaking up and are very confident; the girls fall back. Not that they don't know it, but they do fall back for some reason. So I stay on top of that and try to push them. (Personal communication, March 30, 2018)

Teachers A and C then made general references to motivating both groups of students equally in math class. Both conveyed that they fostered a gender-equitable classroom environment. In the end, the three teachers openly admitted that gender student-teacher interactions can and will have a direct impact on student learning for both boys and girls. Based on observations, teachers sometimes consciously made female and males the focus of instruction. The students were given equal “think time” and “wait

time” which is the period of silence given to think about the questions and formulate a response. Students were provided ongoing feedback and coaching after the teacher identified who needed additional tiered academic support. The feedback and language given to students was more positive than negative. Moreover, all three teachers had a system in place to allow girls and boys to have equal opportunities to ask and answer questions.

RQ4: What is the relationship between teacher instructional practices of mathematics instructional practices as it relates to African-American boys’ learning outcomes?

This essential question provided answers that directly pinpointed the cause of how teacher instructional practices impact gender and learning outcomes on African-American male students in mathematics class. As a result of the interviews, observations, and questionnaires, all three teachers stated while they are conscious of the role gender norms can play in the classroom, in schools, and in society, they are encouraged by their own experiences not to reinforce these stereotypes. Each teacher reflected on researched-based strategies to describe the techniques they employ to engage their students in learning. Again, their responses from the teacher survey questions 1, 2, 4, 11, and 16 validated their comments. The focus of their instructional practices focused on small group instruction, differentiation, classroom discussion, technology, and literacy (reading and writing) across the curriculum and engaging students in real-world problem-solving scenarios using manipulatives. Teachers also referred to the instruction being delivered using the district's three-part-lesson plan comprised of an opening period, a work period

and a closing period. The format allows for choice in instructional methods that include teacher presentations or modeling, followed by independent or group practice, then a review of concepts to identify and clarify any misconceptions from the learning for remediation, modification or enhancement. Additionally, Teachers A and C referred to a component on the Teacher Keys Evaluation System tool to reinforce their knowledge of acceptable strategies that must be used to facilitate their student's acquisition of grade-level knowledge and skills. The Teacher Keys Evaluation System tool is the evaluation tool used by the school administrators to measure their performance in 10 key areas, and Instructional Strategies is one of them.

However, despite their knowledge and experiences they shared on various instructional techniques, all three teachers took this opportunity again to describe some of their students as unmotivated; coming from environments where “gaps” needed to be filled. This reemerging theme called “gaps” referred to the difference of their economically disadvantaged students’ lived experiences compared to their more affluent black, brown, and white students within or from various school districts. Gaps, as described by all three teachers, were academic deficits, family instability, neighborhood norms, etiquette and poor self-image are issues addressed daily within the classroom setting. As a result of these deficiencies, 100% of the teachers stated that student engagement was connecting to their student's prior knowledge and skills as a major component of every lesson plan.

Therefore, their instructional practices seek to integrate approaches that connect to their student's interests, home experiences and way of life. For example, teachers A

and C stated that when teaching math and science they tended to select literature in their introduction which they felt would appeal to both male and female students. These materials would include sports, biographies and non-fiction text to also promote and expose students to a variety of reading genres. These two teachers also made mention of one or two male or female students who fell outside of the traditional gender reading themes for each group to show how their classrooms were the exceptions of gender-specific behaviors. These exceptions also supported their belief in a gender-neutral classroom setting where classroom instructional practices were homogenous, and students could participate in activities that suited their interest and preferences.

However, during observations, the majority of boys and girls book selections were connected to traditional male and female themes. These same two teachers also stated that they provided competitive games in the classroom since the two genders love to compete against the other. They also offered problem solving methods using scientific and mathematical vocabulary such as measurement, cost analyses, graphing, data collection, data analysis and observations from home and school, so students are able to closely examine the world around them and see how connected they are to these concepts in their daily lives. Furthermore, both believe they fostered an environment that promotes healthy competition for both groups of students. Teacher B stated, “When I select reading materials, I think about how boys and girls have different natures (dispositions).

However, it doesn't have to dictate what their interest are, but she tends to go more so by their academic abilities and interest” (personal communication, March 30, 2018). This particular teacher also stated that she probably thinks about whether the reading materials

in math will interest a boy or a girl. But when she presents it to the class, for example, she will change the gender of the character(s) to garner a different perspective or take on the subject and/or sometimes she will change the word problems to the various student names based on gender in her classroom. She also shared experience on how her students were asked to select a career path for Career Day. Each student was asked to write a rough draft on their chosen careers. Many of the girls talked about motherhood. To her surprise, two of her male students wrote about fatherhood. She stated, “It's not just something girls need to think about, but being a good father is something boys need to think about too” (Teacher B, personal communication, March 30, 2018). She also emphasized how typically we as women think about girls preparing for parenthood, but we don't often acknowledge how boys are an integral part of the process and their point of view should also be recognized and expressed in the classroom.

Therefore, she provides a forum for both male and female students the opportunity to express themselves equally through reading and writing. This approach confirms two things: the teacher's beliefs about boy's and girl's interest in reading math materials and that pedagogy instructional decisions are based on student interest and achievement and can sometimes unintentionally support gender themes. All three teachers vocally expressed their ongoing use of varied instructional practices to meet the needs of all learners both in and out of the classroom. Furthermore, based on the Teacher Keys Evaluation System (TKES) and classroom observations, all three teachers consistently met or exceeded in one major component: utilizing research-based instructional practices in their classrooms.

RQ5: What is the relationship between behavior and mathematics instructional practices as it relates to African-American boys' learning outcomes?

Regarding student behavior, each teacher expressed a connection between teachers' expectations and African-American boys' behavior in learning outcomes, but do not consider it a major problem in their respective classrooms. All were in total agreement that high expectations, along with a good classroom management plan helps eliminate off-task behavior in the classroom. Although the discipline of students was a primary concern for each of the participants, they all rejected the assertion that the sole behavior of boys impedes their learning outcomes. Teachers expressed the sentiments that girls had equally troubling behavior in the learning environment. All had established norms and established standards for discipline at the beginning of the school year.

Teachers A and C attributed inappropriate behavior exhibited by a student to frustration level or to get attention from their peers. However, all three participants believed that their positive perceptions of students' behavior helped them to gauge their instructional practices to see if the learning activity was aligned to students' needs and interest, appropriate student-teacher interactions, as well as their expectations. Moreover, the teachers reported that they tried to remain conscious of how their perceptions could impact student's feelings about themselves as well as how these learned classroom beliefs could influence their everyday lives. The teacher survey questions 3, 10, and 15 were very insightful regarding teachers' perceptions and beliefs on discipline for girls and boys during mathematics class. The results were confirmed based on their comments. All three teachers indicated that they do not expect discipline differences between boys and girls.

Furthermore, they agreed that they hold the same consequences for all students and the punishment is always distributed equally across the class population. Upon reviewing the teachers' weekly math lesson plans as well as observing grade level planning meetings, it was noticed that teachers were working collaboratively to create student-centered activities based on their student's academic performance after having reassessed their instructional techniques on specific content standards. Review of discipline records stored in the district's student database information system (Infinite Campus) also revealed that no students were suspended or disciplinary referrals submitted from any of the three mathematics classrooms during the observation phase. However, on two occasions, the researcher noticed most of the discipline issues in Teacher C's class, came from students ranked as average students. The research concluded that this discrepancy was attributed to her classroom management skills for failing to protect and leverage time on math activities. However, these incidents were possibly a result of multiple classroom announcements and an award ceremony program that had occurred on both occasions. These third-grade students' routine was interrupted and it appeared a few students had challenges adjusting to the change.

RQ6: What is the relationship between differentiated learning of mathematics instructional practices as it relates to African-American boys' and learning outcomes?

The teachers directly referred back to differentiated learning as one of their daily instructional techniques. Teachers A and B stated that effective teachers understand that students must learn content in a variety of ways and sometimes at a different rate. Both

exclaimed that one lesson does not fit all. The lesson plans using the district template required that they differentiate instruction in all content areas so that all students are able to learn key concepts in depth, with rigor and at a pace that meets their individualized needs. Teacher C affirmed their statements and reiterated that “students have different abilities, experiences, and learning styles, so we recognized we can't teach them all in the same way sometimes” (personal communication, March 30, 2018). All teachers suggested that differentiated learning breaks up the monotony of the day and allows them to continue to improve their teaching strategies that ultimately helps improve student behavior and academic achievement. Once again the responses from the teacher survey questionnaire, interviews and observations, verified their instructional practices in the classroom. It was demonstrated by two out of the three teachers that they had established consistent rituals and routines, had materials and resources readily available and that smooth transition between group activities enabled students to participate in tiered learning assignments. Teachers felt that the learning environment promoted equitable outcomes for all.

RQ7: What is the relationship between parental influences of mathematics instructional practices as it relates to African-American boys' learning outcomes?

Teachers were initially reluctant in responding to this question. While all three reported that they had built positive relationships with most of their parents, two mentioned one of the tools they relied heavily upon was Class Dojo to keep in touch with parents at all times during the school day. These two teachers asked parents to

download the app on their cell phones, so that they can engage with the teacher in the classroom via text messages. The teacher also has the capability of sharing classroom photos, videos, and homework so that parents can stay connected to their child's classroom community. Teacher A relied heavily on parent-teacher conferences, phone calls, letters, and email contact. She prides herself on making positive teacher-parent relationships one parent at a time by building trust and communicating often. Each teacher believed that parental involvement posed challenges for students receiving free and reduced lunch (economically disadvantaged), for a variety of reasons such as conflicting work schedules, lack of home resources such as internet connections, lack of exposure, parental degree attainment and family values as being problematic for a significant portion of their students. Teacher B stated,

Now that does not mean that I don't have challenges connecting with my middle or upper-income parents in my classroom in regarding involvement in their child's learning, but they typically have a quicker response time if there is an academic or discipline issue. (Personal communication, March 30, 2018)

Teachers A and C echoed this same sentiment both orally as well as in their responses to the teacher survey questions 18 and 20. All three teachers believed these factors of exposure, lack of resources, parental degree attainment, single, head of household and family values influenced parental involvement created the potential for underachievement in both boys and girls learning outcomes in mathematics. Teacher A and Teacher C, who are from different countries, stated that they had different cultural norms than the current day standards of children in the United States. Teacher A started by stating,

When I attended school, we knew that our parents expected for us to always perform at our best. We respected our teachers and followed their directions to complete our work. Mediocrity was never accepted or embraced. Currently, the societal norms our student's experience exposes them to unlimited television and computer access, video games, sleepovers, social-media platforms such as Facebook, Snap Chat, Twitter, Instagram, Musicaly and so many more, all in the palm of their hands from their Smartphones. Our students are weighted by so many outside influences that compete with their parent's guidance. In my country, we were taught and raised to believe that parental collaboration is essential in helping one raise a child and in helping the teacher to become a successful educator. Our parents were active in our schooling. (Personal communication, March 30, 2018)

Teacher C affirmed by stating “yes” and nodded throughout Teacher A's comments and then concluded with, “We believed in the African philosophy that it takes a village to raise a child” (personal communication, March 30, 2018). This village includes teachers, parents, communities, and religious institutions sharing the responsibility of nurturing and supporting all children.

Results of Quantitative Data Analysis: Students

The research data from this study were analyzed using the Statistical Package for the Social Sciences (SPSS). The data collected from the Student Survey Questionnaire were analyzed using descriptive statistics. As previously stated, the setting for this study included 3 participants from a pool of 37, from a Title I suburban Elementary School.

The faculty demographics are comprised of 95% black, .03% white, and .03% Hispanic. This predominately African-American staff varied in age as well as experience. Their ages ranged from 27 years to the oldest teacher in the building at 67 years; their experience ranged from 3 to 20+years. All of the teachers at the school are deemed highly qualified by state standards. The student population was comprised of 60 students, of which 53 participated, with a racial composition of 51 African American, 1 Asian, and 1 white student.

One third-grade, one fourth-grade, and one-fifth grade elementary teacher were selected to participate in this study since each grade level is departmentalized. Departmentalization refers to the process of each teacher on the grade level is required to teach a specific content domain while students move in rotation from classroom to classroom. The fifth-grade teacher (Teacher A) had 36 years of experience, the fourth-grade teacher (Teacher B) had 11 years of experience and both had a Masters of Education degree. The last third-grade teacher (Teacher C) had 13 years of experience and had a Bachelor's of Education degree. All three teachers are African American, but from culturally diverse backgrounds. Teachers A was born and reared in the country of Antigua and Barbuda, Teacher B was born in America, and Teacher C was born and reared in the northeastern part South America, Guyana. Teachers A and B have taught upper-level (third to fifth grade) mathematics content domain throughout their academic careers. However, this is Teacher C's first year as a third-grade mathematics teacher. Subsequently, the students were selected from each of the three teachers' homeroom classes. Teacher A's classroom was classified as a high achievers class, had a total

enrollment of 21 students of which 20 were African American and 1 Asian student, 12 girls and 9 boys. However, enrollment changed to 8 males and 11 females. Teacher B's classroom was classified as the early intervention program (EIP), had a total enrollment of 16 students, 8 girls and 8 boys, of which 100% was comprised of African-Americans. Teacher C's classroom, classified as average, had a total of 17 students, 8 boys and 9 girls. However, enrollment changed to 9 males and 12 females, of which 95% were African-American and .05% identified as white. The change in student body population was attributed to the impact of a highly transient population. This suburban school is near several major metropolitan areas and, as with many school districts across the country, has challenges with student mobility. However, to address this issue, the school screens and assesses records for all newly enrolled students before classroom placement.

The data related to information from a 2-point and 4-point Likert scale including the following three categories: student demographics (Tables 1 and 2), student engagement of teacher instructional practices (Questions 3 and 5), and student perceptions (Questions 4 and 6). Student performance was then examined based on age and gender.

Table 1 shows how a sample of 53 respondents answered the survey questionnaire. Out of the initial 60 students combined from all three classes including third, fourth, and fifth-grade, 53 participated; of that, 5.7% were 8 years of age, 41.5% were 9 years of age, 20.8% were 10 years of age, and 32.1% were 11 years of age. Table 2 shows that of the 53 respondents, 62.3% were female and 37.7% were male.

Table 1

Descriptive Statistics by Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	8	3	4.6	5.7	5.7
	9	22	33.8	41.5	47.2
	10	11	16.9	20.8	67.9
	11	17	26.2	32.1	100.0
	Total	53	81.5	100.0	
Missing	System	12	18.5		
Total		65	100.0		

Table 2

Distribution of Students by Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	33	62.3	62.3	62.3
	2	20	37.7	3.7	37.7
	Total	53	100.0	100.0	100.0

Student engagement of teachers' instructional practices about math was examined in the following tables. Data were collected to determine the percentage of respondents who asked or answered questions in class (Q4). Of the 53 respondents, 98.1% of both male and female students felt they asked or answered questions during mathematics class.

Moreover, the results show 56.6% of third-, fourth-, and fifth-grade boys and girls at one time or another wanted to speak in math class but chose not to do so compared to 43.4% who did not (see Tables 3-4).

Table 3

Correlation: Q4 Student Survey Engagement Question

Q4: Do you ask or answer questions in class?				
	Frequency	Percent	Valid Percent	Cumulative Percent
No	1	1.9	1.9	1.9
Yes	52	98.1	98.1	100.0
Total	53	100.0	100.0	100.0

Table 4

Correlation: Q12 Student Survey Engagement Question

Q12: Have you ever wanted to speak in class but did not do so?				
	Frequency	Percent	Valid Percent	Cumulative Percent
No	23	43.4	43.4	100.0
Yes	30	56.6	56.6	56.6
Total	53	100.0	100.0	100.0

Student perceptions of instructional practices about mathematics were examined in Tables 5 and 6. Data were collected on student perceptions about feeling confident in their math skills (Q5). Of the 53 respondents, 96.2% of male and female students reported they feel confident about their math skills. Table 6 shows data collected for research question #14 to determine if students wanted a career in math, science or computers. The majority of third-, fourth-, and fifth-grade students reported they wanted to pursue a career in either of the three disciplines.

Table 5

Correlation: Q5 Student Survey Perception Question

Q5: Do you feel confident about your math skills?				
	Frequency	Percent	Valid Percent	Cumulative Percent
No	2	3.8	3.8	0.8
Yes	51	96.2	96.2	100.0
Total	53	100.0	100.0	100.0

Table 6

Correlation: Q14 Student Survey Perception Question

Q14: Do you want a career in math, science or computers?				
	Frequency	Percent	Valid Percent	Cumulative Percent
No	13	24.5	24.5	24.5
Yes	40	75.5	75.5	75.5
Total	53	100.0	100.0	100.0

Student performance data were further analyzed using Group Statistics and Independent Sample Tests, Tables 7 and 8, to determine if there were differences between boys' and girls' test scores. Based on the gender of the 53 boys and girls who participated in the study, there was no difference in test scores between the two groups.

Table 7

Group Statistics

	Student		Mean	Std. Deviation	Std. Error Mean
	Gender	N			
Test Score Percentile	F	33	35.55	21.62	3.76
	M	20	38.50	26.94	6.02

Table 8

Independent Samples Test: Test Scores by Gender

		Levene's Test for Equality of Variance		t	df	Sig. (2-tailed)	t-test for Equality of Means		95% of Confidence Interval of the Difference	
		F	Sig.				Mean Difference	Std. Error Difference	Lower	Upper
		Test Scores (Percentile)	Equal variances assumed				2.508	.119	-.43	51.00
	Equal variances not assumed			-.41	33.67	.68	-2.95	7.10	-17.39	11.48

No significant difference in test scores between female and male students

The data collected reflected one difference in test scores between the 9-year-old group and the 11-year-old group. Table 9 shows the data indicates a statistically significant difference between test scores and age based on the .017 significance level that ranges below the acceptable level of .05.

Table 9

Analysis of Variance: Test Scores by Age

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5360.35	3	1786.786	3.724	.017
Within Groups	23509.52	49	479.786		
Total	28869.887	52			

Table 10 shows there is a difference in test scores and age between the 9-year-old students and 11-years old students.

Table 10

Tukey HSD: Multiple Comparisons of Test Scores (Percentile)

(I) Q1 Age	(J) Q1 Age	Mean			95% Confidence Interval	
		Difference (I-J)	Std. Error	Sig	Lower Bound	Upper Bound
8	9	13.727	13.481	.740	-22.12	49.58
	10	-1.818	14.267	.999	-39.76	36.12
	11	-9.294	13.717	.905	-45.77	27.18
9	8	--13.727	13.481	.740	-49.58	22.12
	10	-15.545	8.089	.232	-37.06	5.97
	11	23.021*	7.073	.011	-41.83	-4.21

(continued)

(I) Q1 Age	(J) Q1 Age	Mean			95% Confidence Interval	
		Difference (I-J)	Std. Error	Sig	Lower Bound	Upper Bound
10	8	1.818	14.267	.999	-36.12	39.76
	9	15.545	8.089	.232	-5.97	37.06
	11	-7.476	8.476	.814	-30.02	15.07
11	8	9.294	13.717	.905	-27.18	45.77
	9	23.021*	7.073	.011	4.21	41.83
	10	7.476	8.476	.814	-15.07	30.02

*. The mean difference is significant at the 0.05 level.

According to student data shown in Table 11, there is a significant relationship between two variables. The dependent variable used for this study, academic achievement/learning outcomes, showed a positive correlation with student engagement of instructional techniques (participation). The data show student engagement in class (Q6) has a significant relationship with learning outcomes; Q6 also correlates with the engagement Items 9 and 17. The results were derived from the following three questions:

Question 6: How many times do you ask or answer questions in class?

- a) Once or twice
- b) Three or four
- c) All the time
- d) Never

Table 11

Correlations with Test Scores and Selected Items

		Test Scores								
		(Percentile)	Q6	Q7	Q8	Q9	Q10	Q15	Q16	Q17
Test Scores (Percentile)	Pearson Correlation	1	.373**	.064	-.054	.091	.080	-.070	.138	.082
	Sig. (2-tailed)		.006	.647	.699	.519	.572	.616	.324	.559
	N	53	53	53	53	53	52	53	53	53
Q6	Pearson Correlation	.373**	1	.234	-.031	.389**	-.192	.006	.114	.411**
	Sig. (2-tailed)	.006		.092	.826	.004	.172	.966	.418	.002
	N	53	53	53	53	53	52	53	53	53
Q7	Pearson Correlation	.064	.234	1	-.200	.161	.000	-.115	.013	.343*
	Sig. (2-tailed)	.647	.092		.150	.250	1.000	.411	.927	.012
	N	53	53	53	53	53	52	53	53	53
Q8	Pearson Correlation	-.054	-.031	-.200	1	.045	-.089	-.010	-.138	-.069
	Sig. (2-tailed)	.699	.826	.150		.748	.530	.942	.326	.625
	N	53	53	53	53	53	52	53	53	53
Q9	Pearson Correlation	.091	.389**	.161	.045	1	-.145	.090	.308*	.250
	Sig. (2-tailed)	.519	.004	.250	.748		.305	.521	.025	.071
	N	53	53	53	53	53	52	53	53	53
Q10	Pearson Correlation	.080	-.192	.000	-.089	-.145	1	-.097	.050	-.099
	Sig. (2-tailed)	.572	.172	1.000	.530	.305		.493	.727	.485
	N	52	52	52	52	52	52	52	52	52
Q15	Pearson Correlation	-.070	.006	-.115	-.010	.090	-.097	1	-.044	-.191
	Sig. (2-tailed)	.616	.966	.411	.942	.521	.493		.753	.172
	N	53	53	53	53	53	52	53	53	53
Q16	Pearson Correlation	.138	.114	.013	-.138	.308*	.050	-.044	1	.194
	Sig. (2-tailed)	.324	.418	.927	.326	.025	.727	.753		.163
	N	53	53	53	53	53	52	53	53	53
Q17	Pearson Correlation	.082	.411**	.343*	-.069	.250	-.099	-.191	.194	1
	Sig. (2-tailed)	.559	.002	.012	.625	.071	.485	.172	.163	
	N	53	53	53	53	53	52	53	53	53

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Question 9: How often do you raise your hand in a day and the Teacher does not answer your question?

- a) Once or twice
- b) Three or four
- c) I am called on when I raise my hand
- d) I never raise my hand

Question 17: How does the teacher respond to the questions you ask in class?

- a) Tells me to keep asking questions or speak again
- b) Tells me to stop talking or ask a question again
- c) Neither encourages nor discourages me
- d) I never participate

The analysis of the qualitative and quantitative data collected seeks to answer the research questions from two perspectives: teacher and student.

CHAPTER VI
FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Purpose of the Study

As reported in Chapter I, the purpose of this study was to explore how teacher's instructional practices influence the learning outcomes of third to fifth-grade African-American males in a suburban Title I elementary school. The study sought to examine the relationship between the dependent variable, learning outcomes, and the independent variables that impact student achievement: teachers' perceptions and beliefs, teacher expectations, teacher-student interactions, teacher instructional practices, student behavior, differentiated learning, and parental influences.

The rationale of this chapter is to identify and examine the major findings, implications, and recommendations from the research conducted. Data analysis allowed the researcher to test the research questions and provide a description of emerging themes. Finally, the chapter outlines the major findings and conclusions. Previous research from the literature provided some insight into potential best practices to how teacher instructional practices can contribute to increased learning outcomes for third- to fifth-grade African-American males in mathematics.

Findings

The research collected both qualitative and quantitative data from the teacher and student participants. Data collection methods included interviews, observations, and surveys from three mathematics classes in grades 3 through 5. The findings from this research show how both internal and external factors contribute to student learning outcomes as well as how common themes emerged related to the following research questions.

RQ1: What is the relationship between teacher perceptions and beliefs of mathematics instructional practices as it relates to African-American boys' learning outcomes?

- Teachers were keenly aware of the relationship between their perceptions and beliefs and how it impacts student achievement. Moreover, the teacher participant accounts of their experiences aligned well with the tenets of Derrick Bell's (2015) critical race theory. This method asserts that African-American educators must not only perpetuate an assimilationist role in schools, but educators must acknowledge that race is a "looming concern," and must be acknowledged and accepted in the context of the students daily realities.

Teachers encouraged students to reach their full potential for boys and girls as well as play prominent roles in mathematics discussions, group work, projects, and independent course work. Furthermore, teachers openly admitted their perceptions and beliefs shape their students' environment both in the classroom and their worldview.

- Teacher participants' accounts of their experiences also aligned well with the tenets of Gloria Ladson-Billings' (2009) cultural relevant teaching. She ascribes a few of the following characteristics to create a cultural relevant profile based on teacher's perceptions of themselves and their students:
(a) Believes that all students can succeed; (b) sees themselves as part of the community and teaching as giving back to the community; (c) help students make connections between their local national, racial, cultural, and global identities; (d) encourages a community of learners; and (e) their relationships with students are fluid and equitable and extend beyond the classroom. Each teacher participant shared all, if not most, of the characteristics Dr. Ladson-Billings describes to form their own pedagogy.

RQ2: What is the relationship between teacher expectations of mathematics instructional practices as it relates to African-American boys' learning outcomes?

- All three teachers exhibited high expectations for all students in their classrooms. The term of teacher expectations held a dual meaning for them. Expectations for their students transcended from the schoolroom to life skills.
- Teachers also referenced the theme termed "gaps." This terminology describes deficits in student core foundational skills and the teachers repeatedly expressed they held themselves accountable for filling in these gaps to help their students succeed in and out of the classroom.

- Teacher expectations were encouraged and supported by public praise and reward incentives. However, extrinsic rewards were limited so students could learn to develop intrinsic motivation techniques toward the process rather than on the end product. Students were also motivated to gain mastery rather than aiming for a performance goal so they would take more responsibility for their own learning outcomes.

RQ3: What is the relationship between teacher-student interactions of mathematics instructional practices as it relates to African-American boys' learning outcomes?

- Teachers knew the importance of establishing a positive and nurturing classroom environment between both groups of students. Their love of the content they taught was delivered in their interactions where students were engaged in the learning and felt supported.
- Teachers identified race, language, gender, class, culture, and socioeconomic status as concepts that intersect in the context of the classroom that emerged during student-teacher interactions.
- Teachers indicated while the majority of their students are of African-American descent they are not a monolithic group, particularly boys.
- The reemerging theme of “gaps” was restated to describe the particular concerns the teachers have for their male students.
- Teachers indicated that girls appeared less confident when they explain math problems within a mixed group. However, boys exhibited confidence in

explaining their math skills whether within the group or working independently.

- Teacher fostered a gender-equitable classroom that promoted equal “think time,” and “wait time,” for answering and responding to questions. Moreover, a system was in place to allow girls and boys to have equal opportunities in the classroom.

RQ4: What is the relationship between teacher instructional practices of mathematics instructional practices as it relates to African-American boys’ learning outcomes?

- Teachers were conscious of how gender norms play a significant role in the socialization process of boys and girls in the classroom, in schools, and in the society based on their instructional techniques.
- Teachers used research-based strategies to describe the methods they employed to engage their students in learning which were interdisciplinary and real to life. The teacher participant accounts of their experiences aligned well with the tenets of Jerome Bruner’s (1966) constructivist theory. This theoretical framework proposes that student-centered learning is best developed when teachers use the scaffolding approach. This method teaches knowledge based on a hierarchical format, echoing Bloom’s Taxonomy model of education. Additionally, students construct learning from real-world problem-solving and prior-knowledge that helps students to determine new ideas and foster critical thinking skills.

- Teachers also affirmed pedagogical instructional decisions are based on student interest and achievement which are also the doctrine of Jerome Bruner (1966).
- The Teacher Keys Evaluation System tool helps to reinforce their knowledge of acceptable strategies that must be used to facilitate understanding and skills equitably to boys and girls.
- Lastly, the term “gaps” reemerged as a descriptor teachers used for their students' with academic deficits, family instability, neighborhood norms, etiquette and poor self-image as influences that impacted learning outcomes in mathematics.
- Student test scores reflected a significant degree of difference between the 9-year-old age group and 11-year-old group. The data show that students from the high achievers class scored slightly higher than the third and a few fourth-grade students. The data suggest grouping kids into classes by ability often mean that the best students get the best or more experienced teachers. Furthermore, while the grade levels are departmentalized, each math teacher works with classes across each category: high achievers, early intervention program (EIP) and general education. Teacher A, in this case, was considered the veteran teacher with more experience and credentials compared to Teacher B and C.

RQ5: What is the relationship between behavior and mathematics instructional practices as it relates to African-American boys' learning outcomes?

- Teachers expressed a connection between teacher expectations and African-American boys' behavior in learning outcomes which includes a good classroom management plan that helps eliminate off-task behavior as well as high expectations for everyone. Discipline consequences were distributed equally across the student population.
- All three teachers expressed sentiments that girls had similarly troubling behavior in the learning environment.

RQ6: What is the relationship between differentiated learning of mathematics instructional practices as it relates to African-American boys' and learning outcomes?

- Teachers referred back to differentiated learning as one of their daily instructional practices.
- Teachers consistently expressed that students must learn content in a variety of ways and sometimes at a different pace.

RQ7: What is the relationship between parental influences of mathematics instructional practices as it relates to African-American boys' learning outcomes?

- Teachers were initially reluctant to respond to questions concerning parental involvement.
- Teachers took pride in establishing healthy relationships with parents. They described a number of different ways they tried to communicate with parents. However, participants did not necessarily blame the parents for lack of school

support and communication but suggested social factors such as conflicted work schedules, lack of home resources, lack of exposure, parental degree attainment, and family values posed a real challenge for student learning outcomes in mathematics.

Recommendations

Recommendations for School Leaders

- School Leaders should create professional development training on culturally relevant pedagogy despite having predominately African-American or Hispanic teacher and student populations to meet the needs of all learners equitably. Some researchers believe that African American students perform better in the classroom when they are being taught by teachers that share their same racial identity.
- Help teachers scrutinize the environment for subtle biases that impact learning as well as conduct open and honest dialogue during evaluations so teachers can assess and gauge the effectiveness of their instructional practices.

Recommendations for Board Members

- Create long-term solutions by increasing the number of teachers with rigorous, ongoing mathematics training. The data show class size does not matter. Experienced math teachers who exhibit knowledge, planning, and implement researched-based instructional strategies is the most effective measure for addressing differences between boys and girls and producing successful learning outcomes.

- Modify school policies so that teachers place a heavy emphasis on merit and grades. Promote standards mastery to ensure learning outcomes are measured by improved performance as these three teachers did. Students were taught the process and provided with learning goals at the beginning of class or before each activity. No long lectures, instead students were able to help facilitate the learning so they could become more active and self-directed in their knowledge.

Recommendations for Teachers

- Educators should analyze learning outcomes on student behavior and social factors. This process will allow educators to determine the root of the achievement gap in their classrooms as well as develop cultural relevant strategies for diverse learners.
- Educators should analyze data based on gender in order to determine any patterns as well as identify student strengths and weakness.
- Relationship building is critical to successful learning outcomes for African-American male students.

The recommendations for School Leaders, Board Members, and Teachers are based on the research findings and questions. From all three teachers emerged the tenants of Derrick Bell's critical race theory that purports public education once revered by the black community as the great equalizer for African-American students, under further scrutiny is only reproducing the status quo (Bell, 2009). However, these culturally diverse, African-American teachers chose to develop a pedagogy which also ascribes the

tenants of Gloria Ladson-Billings' (2009) cultural responsive pedagogy and Jerome Bruner's (1966) constructivist theory to equip themselves with instructional practices that meets the needs of diverse learners fairly and equitably because of several factors. These pedagogical practices were based on factors including but not limited to teachers' perceptions and beliefs, teacher expectations, teacher-student interactions, teacher instructional practices, student behavior, differentiated instruction, and parental influences. The findings indicate that both teachers and policymakers can improve the learning outcomes for African-American boys by acknowledging the racial, gender, income and ethnic differences exist in the classroom and to scrutinize the environment to prevent these factors from becoming barriers hindering academic performance.

Recommendations for Future Research

The participants of this study provided insight into the influences of teacher instructional strategies on gender and learning outcomes for third to fifth grade African-American boys in mathematics. This study is a starting place because further research needs to be done. The following are recommendations for future research on the topic:

- Replication of this study in five years to assess changes to the school program and to suggest recommendations for improvement.
- Conduct research on a more substantial number of schools within the district with a more significant teacher and student sample size for a more extended period of time.

- Conduct a research study on students whose teachers demonstrate cultural responsive pedagogical practices to those teachers who do not, but strictly utilize the Teacher Keys Evaluation System.
- Further research should also include interviews and information taken from parents as well as more responses from the students to draw a greater understanding of teacher instructional practices and the influences of African-American boys' achievement in mathematics.

Conclusions

This study helps to broaden the base of knowledge about gender and learning outcomes on the influence of teacher instructional practices of third to fifth-grade African-American boys in mathematics. The focus of the study was to identify if there was a significant relationship between the dependent variable, learning outcomes, and the selected independent variables: teachers' perceptions and beliefs, teacher expectations, teacher-student interactions, teacher instructional practices, student behavior, differentiated learning, and parental influences in a suburban Title I elementary school. The findings of the research's qualitative results revealed there is a significant relationship between two variables. The dependent variable used for this study, academic achievement/learning outcomes, showed a positive correlation with student engagement of instructional techniques (participation). The data showed student engagement in class has a significant relationship with learning outcomes. There were also no significant differences in student test scores between boys and girls.

Furthermore, the researcher sought to look beyond student test scores and grades toward analyzing the lived experiences of three teachers and their mathematical experience with African-American boys. The observation results builds upon previous research and revealed teachers perceptions and beliefs, teacher expectations, teacher-student interactions, teacher instructional practices, student behavior, differentiated learning, and parental influences are factors that can positively or negatively impact pedagogical practices and learning outcomes for African-American students particularly black males in mathematics. Moreover, the themes emerged from this study also provide insight on previous research findings aligned with the tenants of the constructivist theory, culturally responsive pedagogy, and critical race theory connect with the literature towards improving learning outcomes for African-American students, as well as these findings can further help teachers adopt practices that address the instructional impact on third to fifth-grade African-American males in mathematics.

Jerome Bruner's (1966) constructivist theory framework proposed that student-centered learning is best developed when teachers use the scaffolding approach or hierarchical format that echoes Bloom's Taxonomy model of education. Additionally, students construct learning from real-world problem-solving and prior knowledge that helps students to determine new ideas and foster critical thinking skills. Teachers from the study consistently used research-based methods to communicate and interact with their students to teach new concepts and support student engagement. Instruction was relevant to students' prior knowledge, abilities, background, interest, and focused on real-world problems. Moreover, teachers unknowingly utilize the tenants of Gloria Ladson-

Billings (2009) cultural responsive pedagogy of holding high expectations for students, understanding how their perceptions and beliefs impact student achievement in their daily student-interactions.

All three teachers intentionally made personal connections with students to understand their racial and cultural identities in their daily instructional practices to improve their students' academic conditions and experiences despite many limitations. Furthermore, all three teachers are African American but from culturally diverse backgrounds. Teacher A was born and reared in the country of Antigua and Barbuda, Teacher B was born in America, and Teacher C was born and reared in the northeastern part of South America, Guyana. Both later relocated to the United States after college. The methodology these teachers used ascribes to creating an environment, from observations, that empowered students to better themselves and their community, while at the same time feeling valued and respected for their classroom contributions.

In the literature review, Derrick Bell (2015) also argued that racism is embedded in American attitudes and institutions, and that African-American educators must not only perpetuate an assimilationist role in schools, but educators must acknowledge and accept race in the context of the students daily realities. All three teacher participants identified race, language, gender, class, culture, and socioeconomic status as concepts that intersect in the context of the classroom that emerged during student-teacher interactions. These teachers also emphatically stated that the full identities of students are embraced in the classroom and despite the fact that the majority of their students were African-American, they were not a monolithic group. Vast differences exist and their

responsibility was to prepare their students not only for the classroom but the real-world. This approach, the cultural relevant teaching model these three teachers used, is the antithesis of the assimilationist model which helped to transform and shift responsibility for student learning outcomes to sharing responsibility for them amongst the students and their parents.

The results also indicated that gender had little or no effect on the instructional practices of third to fifth-grade African-American boys in mathematics learning outcomes, despite most of the research illuminating that gender bias is one of the many hidden curriculums in our nation's schools. These three teachers demonstrated in their daily practices that student expectations would not be limited by race and gender based on teacher-student interactions that can influence academic achievement. Moreover, each teacher was fully aware of how their perceptions and beliefs about gender and race were used to promote effective teaching practices that would provide an equitable learning environment for all students in their classroom and the entire school. Subsequently, teachers' instructional practices play a critical role in challenging stereotypical race and gender disparities in the classroom. Educators must come to terms with the reality of their teaching practices and how subliminal messages and values teachers transmit in their language, behavior, and instruction can directly impact both the quality and quantity of teaching and learning for African-American students in their learning outcomes.

APPENDIX A

Student's Consent Letter

Dear Student:

My name is Darlene Herbert. In addition to my role as an Assistant Principal of a metro Atlanta elementary school, I am a graduate student in the Educational Leadership Program at Clark Atlanta University, in Atlanta, Georgia. I am conducting a study on gender equity, race, and the influence of teacher instructional practices of third through fifth-grade students and their learning outcomes in mathematics. I intend to examine how teacher instructions influence student academics in math based on gender from the perspective of educators and students.

You have been chosen to participate in this study along with teachers and school administrators in the following activities: weekly classroom observations, casual conversations, test scores, interviews, audiotape, and surveys. All information shared will be recorded accurately, and only I will have access to the report. All information is private and will remain confidential and will not be shared among your child's peers, teachers, or school administrators. Additionally, I will not share your name, student identification number, or any identifying information in my report.

Your decision to participate is entirely voluntary, and your comments will not impact your grade or relationship with your teacher. At all times, you can freely share your thoughts and opinions about any issues or concerns you may have about any of the activities. The results of this study may be beneficial towards improving teacher mathematical instructional practices at your school and throughout the school district.

Please sign this letter and return it to me, your homeroom teacher, or the secretary in the front office. Should you have any questions or concerns, please contact me on-site.

Sincerely,

Darlene Herbert
Clark Atlanta University Graduate Student

Student's Name _____ Date _____

APPENDIX B

Parent's Consent Letter

Dear Parent/Guardian:

My name is Darlene Herbert. In addition to my role as an Assistant Principal of a metro Atlanta elementary school, I am a graduate student in the Educational Leadership Program at Clark Atlanta University, in Atlanta, Georgia. I am conducting a study on gender equity, race, and the influence of teacher instructional practices of 3rd through 5th-grade students and their learning outcomes in mathematics. I intend to examine how teacher instructions influence student academics in math based on gender from the perspective of educators and students.

Your child has been selected to participate in this study along with teachers, and school administrators in the following activities: weekly classroom observations, casual conversations, testing, interviews, audiotape, and surveys. While in the classroom or during interviews, I will not take any pictures or video record any sessions. All information shared will be recorded accurately, and only I will have access to the report. All information is private and will remain confidential and will not be shared among your child's peers, teachers, or school administrators. Additionally, I will not share your child's name, student identification number, or any identifying information in my report.

Your decision to allow your child's participation in this study is entirely voluntary and his/her comments will not impact their grade or relationship with his/her teacher. At all times, your child can freely share his/her thoughts, opinions, and ideas about any issues or concerns they may have about any of the activities. The results of this study may be beneficial towards improving teacher mathematical instructional practices at your school and throughout the school district.

Please sign this letter and have your child return the form to his/her homeroom teacher. Should you have any questions or concerns, please contact me on-site or at 678-874-1702.

Sincerely,

Darlene Herbert
Clark Atlanta University Graduate Student

Parent's Signature _____

Date _____

APPENDIX C

Teacher's Consent Letter

Dear Teacher:

My name is Darlene Herbert. In addition to my role as an Assistant Principal of a metro Atlanta elementary school, I am a graduate student in the Educational Leadership Program at Clark Atlanta University, in Atlanta, Georgia. I am conducting a study on gender equity, race, and the influence of teacher instructional practices of 3rd through 5th-grade students and their learning outcomes in mathematics. I intend to examine how teacher instructions influence student academics in math based on gender from the perspective of educators and students.

You have been selected to participate in this study along with students, parents, and school administrators in the following activities: weekly classroom observations, casual conversations, testing, interviews, audiotape, and surveys. While in the classroom or during interviews, I will not take any pictures or video record any sessions. All information shared will be recorded accurately, and only I will have access to the report. All information is private and will remain confidential and will not be shared among students, teachers, or school administrators.

Your decision to participate in this study is entirely voluntary and your comments or refusal to participate will in no way impact your performance evaluation. The results of this study may be beneficial towards improving teacher mathematical instructional practices at your school and throughout the school district.

Please sign this letter and return the form to the front office. Should you have any questions or concerns, please contact me on-site or at 678-874-1702.

Sincerely,

Darlene Herbert
Clark Atlanta University Graduate Student

Teacher's Name _____ Date _____

APPENDIX D

Student Perception Questionnaire

Clark Atlanta University

Answer each of the following questions. Choose only one answer for each question.

1. Your age _____
2. Gender of Student
 - a) Female
 - b) Male
3. Gender of Teacher
 - a) Female
 - b) Male
4. Do you ask or answer questions in class?
 - a) Yes
 - b) No
5. Do you feel confident about your math skills?
 - a) Yes
 - b) No
6. How many times do you ask or answer questions in class?
 - a) Once or twice
 - b) Three to four
 - c) All the time
 - d) Never
7. How many times does your teacher call on you to answer a question?
 - a) Teacher does not call on anyone
 - b) Once or twice
 - c) Three to four
 - d) Never

8. How does your teacher call on you in class?
 - a) By name
 - b) By pointing
 - c) By looking directly at me
 - d) Teacher never calls on me

9. How often do you raise your hand in a day and the teacher does not answer your question?
 - a) Once or twice
 - b) Three to four
 - c) I am called on when I raise my hand
 - d) I never raise my hand

10. Why do you think the teacher does not call on you when you raise your hand?
 - a) To many students want to speak
 - b) Others beat me to it
 - c) Teacher does not see or hear me
 - d) Teacher ignores me
 - e) This never happens

11. How many times have you wanted to speak in class by asking a question or making a comment but chose not to do so?
 - a) Once or twice
 - b) Three to four
 - c) Almost everyday
 - d) Not at all, because I participate when I want to
 - e) I usually do not want to participate

12. Have you ever wanted to speak in class but did not do so?
 - a) Yes
 - b) No

13. What are your reasons for not doing so?

14. Do you want a career in math, science or computers?
 - a) Yes
 - b) No

15. Which students ask the most questions and make the most comments in class?
 - a) Girls
 - b) Boys
 - c) Girls and boys equally
 - d) I have not noticed

16. Which students participate in class?
- a) Students who are smart or more interested in the subject
 - b) Students who need more help
 - c) Students who are trying to show off and get more attention
 - d) I have not noticed
17. How does the teacher respond to the questions you ask in class?
- a) Tells me to keep asking questions or speak again
 - b) Tells me to stop talking or ask a question again
 - c) Neither encourages nor discourages me
 - d) I never participate

APPENDIX E

Teacher Self-Evaluation Questionnaire

Directions: The statements below are designed to elicit your awareness of gender and cultural stereotypes in the classroom. Respond to each statement. Please provide a brief comment explaining your position as indicated.

SA = Strongly Agree, A = Agree, SD = Strongly Disagree, D = Disagree

SA	A	SD	D
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1. To understand mathematics, students must solve many problems followed by examples.
2. Students should have opportunities to experience manipulating materials in the classroom before teachers introduce mathematics vocabulary.
3. Do you expect behavioral differences between boys and girls? If so, what are those differences?
4. Small group activities should be a regular part of the mathematics classroom?
5. Do you expect differences in the academic performances between boys and girls?
6. Do you encourage students to work collaboratively in class?
7. In your opinion, do girls participate in mathematics class more frequently than boys? If so, why?

SA	A	SD	D
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8. In your opinion, do girls need more instructional time than boys?

9. Do you make value judgments about students based on their appearances?

10. Do you discipline males more harshly than females?

11. Do you believe students need a great deal of structure, drill and routine in learning mathematical activities?

12. Do boys cause more classroom disruptions than girls?

13. Do you encourage dominant roles for females?

14. Do you believe students that are economically disadvantaged perform poorly in mathematics?

15. Are boys more competitive than girls in mathematics?

16. What are your methods for praising girls for answering mathematical problems correctly?

17. Do you emphasize the attractiveness of girls and the strength of boys?

18. Would you agree that poverty, violence, unemployment, and female-headed households in various communities are major

SA	A	SD	D
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19. What are your methods for praising boys for answering mathematical problems correctly?
20. What other issues do you believe effect student learning outcomes in mathematics?

APPENDIX F

Field Observation Form

Field Observation Site:

Date and Time:

Students Gender and Ethnicity:

Focus Question: How does gender influence teacher-student interactions in third to fifth-grade math classroom?

Sub-Questions:

1. Are there more male or female students?
2. Do the contents of the teaching/learning materials for the lesson address the needs of both boys and girls?
3. Are the materials such as text, language and pictures free of gender structured roles?
4. Do the participants feel comfortable to exchange their ideas and opinions equally?
5. Does the seating arrangement give an equal opportunity for both boys and girls to participate and interact with the teacher and students?
6. How frequently do boys and girls respond to the teachers' questions?
7. Does the teacher encourage the girls and boys to contribute equally?
8. Are the participants given equal time to share and explain their work?
9. Do the participants receive more instruction and guidance in the classroom based on gender?

Length of Activity:	
Descriptive Notes	Reflective Notes

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