Spring 5-5-2023

The Effect of Attendance on the Academic Performance of Black Male Fourth-Grade Students in One Central Arkansas School District

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THE EFFECT OF ATTENDANCE ON THE ACADEMIC PERFORMANCE OF BLACK MALE FOURTH-GRADE STUDENTS IN ONE CENTRAL ARKANSAS SCHOOL DISTRICT

A Dissertation Submitted to the
Office of Research and Graduate Studies
Arkansas Tech University

in partial fulfillment of requirements
for the degree of

DOCTOR OF EDUCATION

in School Leadership

in the Department of Teaching and Educational Leadership
of the College of Education and Health

May 2023

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Dedication

This study is dedicated to the Almighty God, thank you for your grace and mercy, guidance, the power of mind, protection, and health. All of these I give to you with a grateful heart.

To my wife Abby and children who give me the strength, the "WHY," and the encouragement to always finish!

To my beloved twin sister Michelle and my mother, who has been a source of strength when I had thoughts of not finishing, who continually provide their belief, moral and emotional support.

Lastly, I dedicate this study to my mentor Ms. Rosie Coleman who has been a source of educational and life wisdom that helps me lead with a student's first mindset, and all students (especially Black males) who I pray will gain from studies such as this one.

Acknowledgments

I would take this opportunity to thank my wife, my kids, my research chair, my twin sister, and especially my mother Ms. Regenia Stone for their love, support, belief, sacrifice, and guidance without which this research would not have been possible.

Abstract

This study is a journey through the academic lives of 4th-grade Black males in one Central Arkansas school district. This study aimed to investigate certain behavioral variables that may impede the learning and achievement of fourth-grade Black males in Central Arkansas. In the study, groups were established by ethnicity and gender and their test scores on ACT Aspire assessments were statistically analyzed to determine if there were statistically significant differences among these groups. Attendance was used as an independent variable to determine if a relationship between math and reading scores and ethnicity and gender. Participants were selected based on standardized test results, school enrollment status, and race criteria. The methods of the study encompassed the beliefs and concepts of several theorists on learning styles, variables of knowledge, and traditional public schools. An in-depth literature review revealed current research related to the learning and the achievement of males at the elementary level, of Blacks in general, and of Black males at the elementary level. The study showed that there is a statistically significant difference between the mean reading and math scores when we controlled for days absent by ethnicity. Although the data indicated a significant difference between black and white students, it suggests that there is not a statistically significant difference between groups (male and female) on the ACT Aspire math and reading scores in this public Central Arkansas school district. Multiple regression models were run to know whether gender, ethnicity, and days absent affected the output-dependent variables (reading and math scores). In the series of regressions, each model added another predictor variable. The first model ran the predictor total days absent, the second model added ethnicity, and the third model added gender. The Sig. F Change is

statistically significant for the first (days absent) and second (ethnicity) models in both math and reading. There was no significance shown in the third (gender) model.

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CHAPTER I: INTRODUCTION

From its inception, public education in the United States has included as one of its tenets that inequality of opportunity and poverty can be reduced, thereby becoming the great social equalizer for all (Growe & Montgomery, 2003). But in a historical analysis of the U.S. public education system, it does not appear that this aspirational tenet is being met (Tyack & Cuban, 1997). In reality, not all students are prepared to become productive citizens. An examination of the national adjusted cohort graduation rate (ACGR) indicates that while the rate increased from 79% in 2011 to 86% in 2019, 14% of the students that enter high school will drop out (National Center for Education Statistics [NCES], 2021).

By state, the percentage of ACGR in 2019 ranged from 69% in the District of Columbia to 92% in Iowa. The state of Arkansas, during that period, increased from 80% to 88%. While this period saw an increase in Arkansas' ACGR, it remains that 12% of students in Arkansas drop out of high school. The impact on society of high dropout rates is apparent when you examine the statistics that show the correlation between high school dropouts and the rate of prison incarceration. Of the population of males in federal and state prisons, 80% do not have a high school diploma. One in 10 male dropouts between the ages of 16 to 24 is either in prison or juvenile detention. These statistics are exacerbated by the fact that a larger percentage of these incarcerated males are Black. According to the Hamilton Project, there is a 70% chance that a Black male without a high school diploma will be imprisoned by his mid-30s (Kearney et al., 2014).

The evidence of achievement gaps by gender and racial/ethnic groups has been reported by research over the past 60 years (Coleman, 1966; Hedges & Nowell, 1998;

Kozol, 2005; Milner, 2012; Rothstein, 2004). Based on this evidence, the perception is that many of these societal failures (i.e., dropouts, prison incarceration, high unemployment, and poverty rates) seem to indicate that public education is failing these students.

Learning experiences that challenge underserved students may be missing as evidenced by reported achievement gaps among sub-groups based on culture, socio-economic status, and racial/ethnic groups (A Report of the National Task Force on Minority High Achievement, 1999; Heimel, 2003; Klem & Connell, 2004; Scheurich, 2000; Tyson, 2002). Among these sub-group gaps, the Black male appears to be impacted the most. Gurian and Stevens (2005) state:

> Black males are more likely than other males (1) to be identified as learning-disabled and to end up in special education classes, (2) not to participate in advanced placement courses, (3) not to perform as well as other males in math and science, and (4) to perform below grade level on standardized tests (p. 21).

According to Lomotey (1990), the achievement gap for Black males begins at the third-grade level. For whatever reason, these students perform at a comparable level to other groups until they reach the third grade. These negative achievement scores have been used to determine students' educational institutions, and society's academic, personal, and community successes. Kunjufu (2005b) contends “Governors review fourth-grade reading scores to determine prison growth” (p. 1). Consequently, the achievement successes or failures obtained in school, as early as the elementary level, may create immediate and long-term negative effects for the Black male. Therefore, in a

quest to educate all students to become productive U.S. citizens, educators must find ways to help those who are struggling most, the Black male.

Background of Problem

The *Brown vs. the Board of Education of Topeka* (1954) decision pointed out the psychological harm that segregation, or the "separate but equal" policy, inflicted upon Black children (Zirkel & Cantor, 2004). The case included expert testimony that showed that segregated schools produced a sense of inferiority and lowered the self-esteem of Black students. Using the research of psychologist Kenneth Clark as the central focus of the case, lawyers argued that integration would provide Black students with the opportunity to have the same educational advantages as their White counterparts since so many segregated Black schools had substandard conditions and resources (Blanchett et al., 2005).

As a result of inequities found in the U.S. public education system, the federal government enacted legislation designed to alleviate them. Horace Mann (1948, as cited in Education and Social Inequity, n.d.) succinctly states, "Education, then, beyond all other divides of human origin, is a great equalizer of conditions of men—the balance wheel of the social machinery." Gonzalez (2001) echoes the same sentiment by stating,

> "Education is the great equalizer in a democratic society, and if people are not given access to a quality education, then what we are doing is creating an underclass of people who will challenge our very way of life. The civil rights question of our nation today is that of access to a quality education" (p.2).

The public education system is not preparing all students to achieve. Bowman (1994) suggests that one of the most serious and explosive issues in the United States

today is how we meet the educational needs of culturally and linguistically diverse students. Should current trends continue, millions of students (primarily poor Black, Asian, Native American, and Hispanic) will not obtain the education necessary for full participation in the economic and civic life of the country (Growe & Montgomery, 2003).

Statement of the Problem

Lehman (2003) reports that "Studies show that nearly 40 percent of adult Black males are functionally illiterate, and the number of Black males incarcerated far outnumbers the number of Black males in college" (p. 706). The achievement difficulties of the Black male have been a persistent fact for many years (Kunjufu, 2002).

Many Black males continue to experience achievement difficulties in public schools. Theorists, researchers, policymakers, school administrators, teachers, and parents have voiced their concerns about the achievement of middle school and high school males but little has been reported about the problems of the elementary school male (Adams-King, 2016). The problem of high school dropouts begins in elementary school. It is known when the achievement gap for Black males begins. Recording and measuring these dropout rates does nothing to solve the problem. At the elementary level, identification, and remediation can stem this problem (Simms, 2012).

This study is an attempt to understand and address the needs of Black male students by examining the relationship between student attendance and academic achievement in math and reading of fourth-grade Black male students in one central Arkansas school district.

Purpose of the Study

The purpose of this study was to investigate certain behavioral variables that may impede the learning and achievement of fourth-grade Black males in a school district in Central Arkansas. The study sought to identify any potential achievement gap among fourth-grade students by ethnicity and gender in that school district. Once discovered, the researcher analyzed the effect of attendance rates on student academic performance on math and literacy assessments to provide insight into one identified variable that may be negatively impacting the achievement of Black males and to propose the development of specific strategies to improve learning and achievement for those students in urban schools in Arkansas.

The researcher obtained permission from the participating school district to collect student-level achievement data from each elementary school in the district identified by gender and ethnicity. These data consisted of ACT Aspire scores in math and literacy, which are used for assessment purposes in the district and the state. These data were analyzed to determine if there were differences in performance across demographic subgroups. Based on previous research, the expectation was that a gap would be present for Black males. At that point, an analysis of student attendance records was used to determine behavioral patterns the students exhibited, to determine their correlational effect on the achievement scores.

Research Questions/Hypotheses

The fundamental questions that guided this study were as follows:

1. Is there a difference between the ACT Aspire math test scores of fourth graders in one Central Arkansas school district by ethnicity and gender?

H_o1: There is no difference between the ACT Aspire math test scores of fourth graders in one Central Arkansas school district by ethnicity and gender.

2. Is there a difference between the ACT Aspire reading test scores of fourth graders in one Central Arkansas school district by ethnicity and gender?

H_o2: There is no difference between the ACT Aspire reading test scores of fourth graders in one Central Arkansas school district by ethnicity and gender.

3. Is there a relationship between ACT Aspire math test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender?

H_o3: There is no relationship between ACT Aspire math test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender.

4. Is there a relationship between ACT Aspire reading test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender?

H_o4: There is no relationship between ACT Aspire reading test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender.

Significance of the Study

The No Child Left behind Act (2001) changed the focus on school effectiveness and school improvement in the U.S. That law emphasized testing and research-based initiatives for improving schools. In analyzing testing data, it required that results should be examined by demographics to ensure that no student was being "left behind." These

analyses found major achievement gaps among the various groups and required that efforts to erase these gaps should be part of each school's improvement plan. However, Spring (2005) contends that "the new law [No Child Left behind Act] mandated standardized tests and state standards to regulate the school curriculum to ensure that a single culture would dominate the schools" (p. 461).

Studies indicate "The structures, assumptions, substance, and operations of conventional educational enterprises are European American cultural icons" (Pai, 1990 as cited by Gay, 2000, p. 22). Therefore, the traditional educational system of America is structured to meet the learning and achievement needs of the dominant culture---European Americans. In addition, studies report that in 1995 "35% of the students enrolled in public schools were students of color; this percentage is increasing each year" (Pratt & Rittenhouse, 1998 as cited by Gay, 2000, p. vii). Despite the growth in the number of students of color in American schools; the focus remains the same---teaching the European American student.

Unfortunately, the Black male is one group of students whose learning and achievement needs have not been met in the present traditional public school system. For example, the National School Board Association (2020) declares a very unsettling national picture of the state of Black students, which is affected by Black students having the highest poverty rates among ethnicities (*Black Students in the Condition of Education*). Likewise, Tatum et.al (2021) posits in *The State of Black Male Literacy Research*, 1999—2020 that there is a negligible presence of Black males across professional fields, disciplines, and in higher education, which can be an outgrowth of literacy experience in grades pre-K-12.

This study, consequently, was conducted to better understand the learning and achievement needs of fourth-grade Black males because there are factors that affect the learning and achievement of this group of students in the traditional public schools of America which contribute to their lack of achievement. Obtaining knowledge about factors that impede learning and achievement for this group of students would provide insight into how a public school district in Central Arkansas can improve learning and achievement for all students.

Definition of Terms

The following definition of terms will be used throughout this study:

- *Achievement:* Achievement has several definitions: (1) attaining the knowledge to successfully pass the local state's assessment test, (2) attaining the knowledge and skills to become a productive citizen, and (3) attaining personal and academic growth.
- *Achievement Gap:* The achievement gap is the difference in academic and cognitive achievement as defined by traditional standardized tests.
- *American Indian or Alaska Native* – A person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment."
- *Black:* The Census 2020 definition applied. "A person having origins in any of the Black racial groups of Africa.
- *Dominant Culture*: Spring (2005) confirmed that "A major part of the history of U.S. public schools is the attempt to ensure the domination of a Protestant Anglo-American culture in the United States" (p. 3). Therefore,

Protestant Anglo-American was the dominant culture referred to in the study.

- *Minority Group:* Group that was not a part of the dominant culture. Black or Black was the minority group that was highlighted in this study.
- *Parent:* The parent is referred to as a natural parent, step-parent, grandparent, foster parent, or legal guardian of the participant.

Limitations

The following limitations apply to this study:

1. This causal-comparative study is limited by the lack of randomization and the inability to manipulate the independent variable, student behavior.
2. The use of attendance data as an independent variable is limited by the fact that there is no qualitative evidence of what has caused the absences. The cause of the absences may be more indicative of the impact on learning than simply missed class time.

Delimitations

1. The study is delimited to a specific group of fourth-grade Black males in one specific school district, so the results may not be generalizable to all fourth-grade Black males.

Organization of the Study

This dissertation includes four additional chapters. First, a literature review, chapter 2, will identify characteristics of male students, characteristics of Blacks, and characteristics of the middle childhood stage. The academic concerns of males in the elementary grades, especially Black males, will be presented. A review of achievement

gaps, learning styles, and expectations of traditional schooling that negatively affect the male student will be expounded. A review of the impact of the lack of achievement for the Black male will also be highlighted. Next, chapter 3 shall include a detailed description of the quantitative approach of the study. In addition, The Black male population and types of assessment tools will be identified.

Data organization, confidentiality systems, recommendations, and implications for the study will be recognized. Chapter 4 will include the data collection stages. Presentations of findings will be written in narrative form. Analyses of data will be supported with tables and layers of narrative descriptions and comparisons. The implications gained from the findings will be presented. Chapter 5 will incorporate a summary, conclusions, and recommendations because of the findings and implications of the study.

CHAPTER II: LITERATURE REVIEW

The educational dilemma of the Black male has been a topic of research and discussion for many years. Studies indicated that boys generally, and Black boys--particularly, are in crisis (Gurian & Stevens, 2005). This crisis has grown to become a complex and relentless problem as it negatively affects an entire nation---the United States of America. This crisis has occurred in the midst of a societal change. Societal change has created modifications of typical gender roles. Pollack (1999) states "Boys today are in serious trouble, …Confused by society's mixed messages about what's expected of them as boys, and later as men, may feel a sadness and disconnection they cannot even name" (p. xxi). Gurian and Stevens (2005) report "Isaiah Olsen, a father in Detroit wrote, 'I see a big problem with our Black boys in school. They don't fit'." (p. 25).

Consequently, boys generally are having difficulties in the public schools of America; but the Black male has a double sense of disconnection---one of gender and one of race---to struggle through. This literature review will focus on the following: (a) black male achievement, (b) black male learning, (c) traditional public school, and the voices of black boys at the elementary level. The literature review contains information from educational databases, peer-reviewed articles, and web-based educational journal articles.

Black Male Academic Achievement

Males generally are having difficulties in the public schools of America, but the Black male has a double sense of disconnection---one of gender and one of race---to struggle through. For quite some time, there has been a great deal of attention given to the persistent disconnect between Black students and high academic achievement (Henfield,

2012). Namely, issues of race and gender are central to any discussion about Black males and achievement (Davis, 2003). Achievement disparities are especially problematic for ethnic minority males who increasingly lag behind not only their White male counterparts but also girls within their own ethnic group (Taylor & Graham, 2007).

Optimum Learning Conditions

High teacher expectations were an important prerequisite of achievement for students of all classes, gender, and ethnicity. Teacher expectations had a direct effect on achievement (Good & Brophy, 1978, 1994 as cited by Gay, 2000, p. 46). Teacher expectations about student academic potential were often influenced by the teacher's beliefs about the student's race (Morefield, 2002). Christian Science Monitor (2000) reports from a study by the National Urban League, that negative beliefs about Blacks, especially the Black male, "indicates that Black males are often the victim of low expectations" (p. 5). Low expectations would present an uncontrollable learning and achievement obstacle for the Black male student. Black learning encompassed many intrinsic and extrinsic aspects. Learning was a complex process that involved elements such as culture, socioeconomic status, experiences, learning models, intellect, peer pressure, attitude, and personal drive. Studies indicate "that Black culture it is oppositional to the culture of schools… [when students] see this [school] as a violation of their identification" (Fordham & Ogbu, 1986 as cited by Mahiri, 1998, p. 2).

Jensen (2006) contends "Conditions matter; culture, language, and background circumstances all can put anyone at either an advantage or disadvantage" (p. 19). In addition, Nieto (1999) states: We also must pay attention to relationships among students, teachers, and families; to the identification and connection that students feel with schools;

to the cultural and social realities of students' lives; and to the economic and political context in which schools exist. (p. 162) Then Kunjufu (2002) insists "Learning style is not dictated by race, income, or marital status; [but,] Culture is the driving force" (p.96). Therefore, researchers agreed that culture was an important component of learning. However, Payne (2005) declares "the most important part of learning seems to be related to relationships" (p. 110). Relationships were important for the effective communication of ideas, thoughts, and feelings between the instructor and the student. The instructor must be aware of the special cultural and economic habits and thoughts of the particular student population in order to develop a teacher/student relationship.

Payne (2005) also argues that there were 'hidden rules' and perceptions about the meaning of education for different economic classes. Consequently, barriers to communication may be created when there were cultural and or economic differences between the instructor and the student or the school administration and the student population that hinder student learning and achievement. Peer groups created significant relationships for Black students. Kunjufu (2002) argues that "all Black children, regardless of income, are susceptible to the peer group, which all too often discourages academic achievement" (p. 234). Peer groups connected the student to a larger body; they may build a positive sense of belonging or a negative attitude towards achievement. Kunjufu (2002) contends "A historical African value is, 'I am because we are [makes it] …difficult for Black … students who value cooperation to excel in an environment that promotes competition and rugged individualism" (p. 107). Additionally, Kunjufu (2005c) asserts "Peer pressure …increases as age increases and this tends to decrease a child's

motivation to learn…[as] the Black peer group has taken the position that to be smart is to be White" (p. 74).

Consequently, the peer group may be a powerful deterrent to achievement for the Black student. The minority student population in American public schools has grown. Gay (2000) states "In 1995, 35% of the students enrolled in public schools were students of color; this percentage is increasing each year" (p. vii). Black students were categorized as a group of students of color in the public schools of America. Many students of color used a style of learning that had been gained through their spoken and unspoken traditional practices and experiences.

First, many students of color may identify the final situation before understanding the underlying reasons that caused the situation. This type of thinking was from a broad understanding of a problem to an understanding of the specific elements that caused the problem. Studies confirm that "students of color…tend to be more inductive, interactive, and communal in task performance… [Whereas their] reasoning [was] from the whole to parts, from the general to the specific.

The focus [of many of these students] is on the 'big picture,' the pattern" (Boggs et al., 1985; Philips, 1983; Ramirez & Castaneda, 1974; Shade, 1989 as cited by Gay, 2000, p. 93) of the information presented. Second, language was an important element of learning. Kunjufu (1987) believes that "Language is a very strong cultural expression …Language is the oral expression of your value system" (p. 84). Research reports that "students do much better in school when their primary discourse [language first acquired] is the same as their secondary discourse [language of larger society]" (Gee, 1987 as cited by Payne, 2005, p. 29). Language was the means by which students communicate and

comprehend thought in academic and non-academic settings. Third, teacher/student and student/student relationships were an important element of learning for students of color. Gay (2000) contends that "underlying values of human connectedness and collaborative problem solving are high priorities in the cultures of most groups of color in the United States…[which] plays a central role in these groups' learning styles" (p. 158).

Hence, an interactive learning environment that made connections with the primary discourse of the student may create more opportunities of learning for the Black student. Culture may also be a factor in an individual's tendency of brained based thinking. Tomlinson (2001) asserts "Culture affects how we learn…It can influence whether we…learn best in a whole-to-part or a part-to-whole approach" (p. 62). The whole-to-part approach to learning indicates right-brained learning taking place; a part-to-whole approach indicates left-brained learning taking place.

Kunjufu (2002) writes "Jeffrey Freed, the author of Right-Brained Children in a Left-Brained World, suggests … a large percentage of them [Black students] are right-brained thinkers…[who]respond best to instruction by example [and] prefer classes where they're… working on many things at once" (pp. 96-97). Research indicates "the right side [right hemisphere] is better suited for looking at and synthesizing an overall whole" (Ornstein, 1997 as cited by Ormrod, 2004, p. 16).

Consequently, a large number of Blacks' dominant preference for learning was right-brained learning. Male Learning Boys and girls were different physically, mentally, and emotionally. However, Pajares (2002) argues "Gender differences can [also] arise as a function of the home, cultural, educational, and mass media influences" (p. 4). Physically the outward differences were apparent, but the mental and emotional

differences for boys may be hidden behind an invisible mask of deception. There were many innate differences and outside forces that affect the processing of information and emotions of boys compared to the processing of information and emotions for girls. Gurian (2001) has created five basic categories to identify innate differences that affect male learning: [1] Developmental and structural differences---Boys mature later than girls; attain verbal skills later than girls; and their sense of hearing and smell are worse than girls. [2] Chemical differences---Boys have more serotonin which makes them impetuous and restless. [3] Hormonal differences---Boys are dominated by testosterone which makes them belligerent. [4] Functional differences---Boys use their right hemisphere, where less complicated thinking takes place, more than girls. [5] Differences in processing emotion---Boys take a longer period to sort out their emotions than girls. (pp. 19-31).

Therefore, boys think and react in different ways at different rates than girls when learning took place. Studies completed by the Gurian Institute confirm that "The male brain is better suited for symbols, abstractions, diagrams, pictures, and objects moving through space than for the monotony of words" (Gurian, 2001 as cited by Gurian & Stevens, 2004, p. 3). Pollack (1999) agrees that even "For young boys providing lots of opportunities for hands-on learning and problem-solving and a lot of interactive teaching" (p. 266) were methods of instruction that produce optimum male learning experiences. Additionally, boys were generally more difficult to understand than girls. Pollack (1999) indicates in his book Real Boys: Rescuing Our Sons from the Myths of Boyhood that boys often wear invisible masks that cover their true emotions, feelings, and experiences as they try to behave in a manner that was in line with society's

definition of what a boy should and should not do. The school was a part of society; therefore, the definitions and concepts of humanity that were at the foundation of that society become the definitions and conceptions of humanity that were at the foundation of that school system. Pajares (2002) contends "messages [presented through medium and other methods] that entrench stereotypical gender concepts …range from reinforcing traditional gender roles to gender dominated domains, …[such as] portraying men as leaders and authority figures" (p. 5).

The societal messages and models of manhood imparted were inconsistent and confusing as to the current male role. Confusion about the appropriate male role may create a lack of confidence that hinders learning for the male student. Research confirms that "girls express greater self-efficacy for self-regulation during elementary school" (Pajares et al, 1999 as cited by Parjares, 2002, pp. 3-4). Researchers agree that "Girls display more goal-setting and planning strategies …kept records and self-monitored, [and had the] ability to structure their environment for optimal learning" (Zimmerman & Martinez-Pons, 1990 as cited by Parjares, 2002, p. 3). Consequently, boys may have had less control of their learning environment than girls. Recent brained-based studies had also identified learning style differences that were unique to male students. Gurian (2001) reports male learning styles differences as (1) deductive conceptions, (2) abstract reasoning, (3) minimum word use, (4) supporting evidence needed, (5) easily bored, (6) need space, (7) need movement, (8) fitting-in important, (9) visual, and (10) team and group learning. Boys were action visual learners with an inclination for abstract reasoning and deductive conceptualizations as a generalized method for learning.

Black Male Learning Styles

Several elements of learning of Black students and male students were similar. First, many Black students and many male students were right-brained thinkers. Second, many Black and many male students had a tendency for group learning situations. Third, many Black and many male students communicated with a language code that was exclusive to members of their culture or gender. However, Black boys may have additional factors that support their learning. Research confirms that "a learning environment that offered encouragement and an opportunity for accomplishment was essential to the academic achievement of Black males" (Edwards & McMillion, 2000 as cited by Wilson-Jones & Caston, 2004, p. 2). Hrabowski et al. (1998) studied academically successful Black males "that parents who exposed their sons to educational materials at an early age provided a foundation for future educational success" (Berry, 2005, p. 55). Early experiences and parental support were essential for the learning and achievement success of Black males. Additionally, religious beliefs and extracurricular activities were important for achievement.

Berry (2005) contends that "a strong belief in religious faith and participation in the church are significant factors for success for Black male students" (p. 59). Kunjufu (1987) agrees "The church is a cornerstone of the African-American community and a major transmitter of culture" (p. 81). Throughout history, Blacks had looked to their church for hope, strength, and support; this cultural tradition may provide an inner element of personal strength. Extracurricular and sports activities of interest were also factors for learning and achievement. Berry (2005) believes that "Participation in an academic co-curricular activity … [and] athletics … [were] contributory factors in

fostering success….Participation in athletics was a motivating factor for maintaining good grades" (p. 59). Therefore, factors that encouraged learning and achievement for the Black male were parental support, a religious base, and participation in a sport or academic co-curricular activity of interest.

In addition to parental support, the Black male needed positive mentoring support to enhance achievement. Studies support the positive effects of mentoring on achievement (Tierney et al., 1995 as cited by Williams, 2003, p. 129). Pollack (1999) believes that elementary boys need male mentors to learn proper male behavior. Research (Gibbs, 1988; Hopkins, 1997; Jones, 1986; Wright, 1992 as cited by Grantham, 2004) indicates "that Black males have been and are consistently feared, threatened, ignored, abused, exploited, and downright hated and slaughtered to the point that many researchers are concerned about their existence in society" (p. 240). Franklin (2006) reports "Professor Melissa Roderick of the University of Chicago notes that Black boys often do not feel cared for in their school or their communities. Polite also noted that the perceived lack of caring was the most devastating factor for African-American boys" (p.2). However, an appropriate mentor may help the Black male to circumvent some of the effects of their negative experiences with society.

Grantham (2004) describes an appropriate Black male mentor as one "who embodies three key attributes: love, commitment, and responsibility" (p. 240). The Call Me Men Instructing Students (Call Me Mister) program trained Black males as elementary teachers. Richard (2005) discusses the benefits of the Call Me Mister program as it prepares young men to serve as "a model of manhood" for many Black boys. A

mentor that cared about the personal and academic needs of the Black male may positively affect achievement.

Variables of Black Male Learning

Learning and achievement are affected by several variables for the Black male: school attendance, rapture with teachers, school climate, and an innate drive to achieve. Research revealed that there was a "shortage of Black teachers in K-12 public schools" (Irvine, 1988; National Education Association, 2001; Recruiting New Teachers, 2002 as cited by Lewis, 2006, p. 224) and "that Black male teachers are on the verge of extinction within the U. S. teaching profession" (Greenlee, 1997, as cited by Lewis, 2006, p. 224). Therefore, the teacher of the Black male was often not a Black or a Black male. The gender differences, cultural/ethnic differences, and class differences between the Black male student and the White female teacher may provide obstacles to understanding and communication. Female teachers (of any race) may not be aware of the hidden male rules which govern the behavior of many boys. Pollack (1999) asserts "The Boy Code is so strong, yet so subtle, in its influence that boys may not even know they are living their lives in accordance with it" (p. 7).

Kunjufu (2005d) agrees "There is a power struggle going on in many schools between Black boys and female teachers… from the fourth grade on as boys become bigger, they become threatening and intimidating" (p.97). Payne (2005) contends "Schools…operate from middle-class norms and use the hidden rules of the middle class. [Furthermore], An individual [teacher, student] brings with him/her the hidden rules of the class in which he/she was raised" (p. 3). Therefore, the hidden rules of the school (represented by the teacher) and the hidden rules of the individual (represented by the

Black male) may not be compatible. The incompatibility of the teacher and the Black male may directly affect the climate of the class. The class climate was the sense of feeling present in the class. Kunjufu (2002) contends "Boys know which teachers are afraid of them, disrespect them, and have low respect for them. They know they can easily manipulate classroom situations with such teachers" (p. 98). A disruptive class climate, which may or may not be indicative of a disruptive school climate, affects learning and achievement.

All too often, these young boys are given up on, and attention to their specific needs and interests is not taken into account, which often leads to a wrongful place in special education programs and teachers focusing on basic skills because of the desire to meet minimum standards requirements (Wood & Jocius, 2013, p. 662). Taylor and Walton (2011) suggest that stereotyped students may experience a form of "double jeopardy" whereby threat interferes with both the acquisition of academic knowledge (in learning environments) and the retrieval of acquired knowledge (in performance environments).

However, researchers (Hoyle et al., 1985, p. 15 as cited by Kelly et al., 2005) agree that "School climate may be one of the most important ingredients of a successful instructional program. Without a climate that created a harmonious and well-functioning school [or class], a high degree of academic achievement was difficult" (p. 3). A communal learning environment was effective for the Black male. Howard (2002) reports: The student interpretations identified three central teaching strategies that had a positive effect on student effort, engagement in class content, and overall achievement… [As] (a) Teachers who establish family, community, and home-like characteristics; (b)

teachers who establish culturally connected caring relationships with students; and (c) the use of certain types of verbal communication and affirmations (p. 425). Gay (2000) indicates that Black students are more comfortable with learning when the school climate resembles "homes away from home" with a caring supportive atmosphere (p. 47).

Additionally, research reveals that "the learning styles of Black males were unique and cooperative learning was the most effective method of teaching these students" (Peterz, 1999 as cited by Wilson-Jones et al., 2004, p. 2). Consequently, an effective learning climate for the Black male had distinct differences from the learning climate of the traditional learning climate of the public schools of America. Few studies had been conducted on the relationship between achievement and personal drive or motivation. Parson and Kritsonis (2006) believe that "Examples of success [of Black males] often are the result of strong, determined personalities" (p. 3). Research indicates that "Self-determination is the glue that has kept all of the pieces together [as] one unusual anomaly that appears to exist in the academic success of the Black males" (Reis, Colbert, & Hebert, 2005 as cited by Parson & Kritsonis, 2006, p. 4). This anomaly was known as the theory of resilience. Parson and Kritsonis (2006) argue that the development and enhancement of this resilience were predicated on the relationship of family, the relationship with other significant individuals, and the experiences of the Black male. Taylor and Graham (2007) believe that motivation encompasses two parts: what one hopes to get out of a situation and the significance of the situation. Hence, a variety of unique variables may affect the learning and achievement of the Black male.

Traditional Public Schools

Traditional public schools acknowledge groups of students differently. Colvin (2003) states "it can be argued that inequality, rather than mediocrity, is the single most distinctive characteristic of education in America" (p. 3). Characteristics portrayed in education were characteristics that identify society. Nieto (1999) states "schools tend to reproduce fairly consistently the inequalities that exist in society" (p. 24). Morefield (2002) believes "there is a long tradition of viewing Black …children as deficient, as opposed to different, from white middle-class children" (p. 10). History confirmed the disparity of treatment of Black students. The Chronology of Black History by Alton Hornsby, Jr. (1991) reported the acts of discrimination, segregation, and racial prejudice Black students had to endure as early as the 1800s. Many legislative battles had been fought to improve the educational plight of minority groups of students. Hornsby (1991) reports "Brown vs. Board of Education of Topeka, Kansas ruled racial segregation in public schools was unconstitutional" (p. 101). For 50 years after the *Brown* ruling, there had been some school improvements, but racial prejudice and discrimination still exist.

Morefield (2002) insists that "our educational system has …inherited classist, racist and sexiest belief systems" (p. 2). Consequently, traditional public schools continued to have a system where one group of students was held in higher regard than other groups of students. The curriculum was an alignment of a set of courses and the order in which they were to be taught in the school. The curriculum may be a reflection of the economic climate or the perceived needs of a nation or a state at a particular period. According to spring (2005), the nation's identified role of education had been a determining factor for curriculum change when Latin and Greek were taught in colonial

grammar schools to preserve economic status; Bible reading and prayer were taken away with a new focus on worldly needs, and environmental education was added with the creation of Earth Day and environmental concerns. Ravitch (2003) believes "Education in America … [can be described as]…cycles of stability and change, periodic crusades, and occasional bouts of zealotry and apostasy" (p. 3).

Hence, the changing concerns of society may dictate the set of courses taught in the schools of that society. Today curricula were geared toward uniformity. Darling-Hammond (1997) contends "Many states and districts…continue to prescribe highly specific standardized curricula [which may include] paced and sequenced daily lesson plans, complete with predetermined assignments, tests, and grading schemes" (p. 49). The No Child Left Behind Act (NCLB) was a promoter of student uniformity. Schools had benchmarks that all students at a particular grade level must attain. However, standardized curricula may not take into consideration the diversity of the students and their different learning styles and needs. Learning Styles Traditional schools view intelligence from a narrow perspective. Gardner (1993) states "In a traditional view, intelligence is defined operationally as the ability to answer items on tests of intelligence" (p. 15). Learning styles that were recognized, based on this narrow definition of intelligence, accommodate one or two basic learning styles: verbal learning and logical mathematics.

Verbal learning included the many verbal lesson presentations presented by teachers, the daily pencil/ paper class work, and the weekly and quarterly paper/pencil tests. Logical mathematics included the constant drill and memorization of math facts and rules. The NCLB legislation also encouraged a narrow perspective of learning as

indicated by the yearly paper and pencil test used to determine student achievement and academic growth. Traditional methods of instruction employed in the public schools of America were incompatible with many of the diverse cultural student population values. Morefield (2002) states "American schools historically are a reflection of the value system of northern European immigrants [English, Dutch, French, and German] a value system that is characterized by a strong belief in competition and rugged individualism" (p. 2). This competitive and individualist system valued a grading procedure that highlighted the highest scores as points of excellence; used mental intelligence testing that awarded the highest scorers with special programs; and employed a standardized test that determined success or failure. The experience and skill proficiency levels of teachers were not the same for all groups of students.

Colvin (2003) contends that "the most advantaged students---those who come to school fit, fed, and with the largest vocabularies and most world experience---are more likely to be taught by the most experienced, best trained and best-paid teachers" (p.3). Heimel (2003) agrees "At the elementary level, fewer than 9 percent of teachers in low-poverty schools have less than three years' experience, compared with more than 13 percent of teachers in high-poverty schools" (p.2). Consequently, the more experienced and best-trained teachers provided an academic advantage for the most advantaged students. Traditional schools may not have equal funding among schools within a district. Colvin (2003) reports "Data from the Conditions [of Education, 2003] report shows that schools with large numbers of disadvantaged children spend about $500 less per pupil than the most affluent school districts" (p. 3). More resources and materials for instruction were available to students at schools with a greater per pupil expenditure than

a school with a smaller per pupil expenditure. Per pupil expenditure among schools was an example of instructional inequalities among schools.

Impact of Traditional Public Schools on Black Males

Traditional schooling approaches of the public school in America were negatively affecting the Black male. Curriculum, instruction, and expectations were geared toward an individualist competitive learner. Research showed many Blacks (Morefield, 2002, p. 3) were inclined to learn better in cooperative learning group settings; and students in general (Gurian, 2001, p. 48) gain advantages from learning in working group settings. Studies indicate: People learn best when they make connections between what they already know and what they are learning when they can draw on their experiences and make greater meaning of them when they can see how ideas relate to one another, and when they can use what they are learning in concrete ways (Brown, 1994; Gardner, 1991; Shulman, 1987; Darling-Hammond, 1993 as cited by Darling-Hammond, 1997, p. 55).

The cultural experiences of the Black male exercised to make connections between what and how he was taught may create an academic disconnection when that learning environment was not conducive to his learning needs. The implication of repeated academic disconnection led to repeated academic failure. The repeated academic failure led to a plethora of negative effects for the Black male. Gurian and Stevens (2005) report “Right now, one out of four Black males is in jail or under court supervision” (p. 254). Kunjufu (2002) agrees “In 1980, there were less than 100,000 Black males incarcerated. In 2002, that number swelled to 1.5 million” (p. 1). The United States Department of Labor reported an unemployment rate of 9.2 % in March 2007 and 8.2 % in April 2007 for African- American males 20 years and older. The unemployment rate

for White males of the same age range was 3.9 % in March 2007 and 3.5 % in April 2007. These alarming statistics suggested a substantial need to identify the stage when the educational disconnection began for the Black male.

Kunjufu (2005a) declares "This destruction can be clearly observed during the fourth grade when many Black boys begin to exhibit signs of intellectual retrogression" (p. v.). What was happening to Black boys at the fourth-grade level in the public schools of America that may lead to such alarming statistics? Black boys at the fourth-grade level were experiencing a period of great change. There was a change from the early childhood stage to the middle childhood stage. There was a change from the primary grades in school to the immediate grades in school. There were physical changes with growth spurts and voice changes. Kunjufu (2005a) refers to this period of change for fourth-grade Black boys as the "Fourth Grade Failure Syndrome." Additionally, Kunjufu (2005a) points out: The factors that contributed to the decline in Black boys' achievement were: (1) a decline in parental involvement, (2) an increase in peer pressure, (3) a decline in nurturance, (4) a decline in teacher expectations, (5) a lack of understanding of learning styles, (6) a lack of male teachers (p. 43). Consequently, there were combinations of significant changes occurring simultaneously in the life of a fourth-grade Black male. It may have been difficult to make adjustments to multiple changes.

In 1965 there were several federal laws enacted by the Higher Education ACT that affected the educational system in all 50 states in the United States. The Elementary and Secondary Act (ESEA) was reauthorized into what we know as the No Child Left Behind Act (NCLB). Signed into law on January 8, 2002, the NCLB (US United States Congress Public Law 107–110) is a reauthorization of ESEA. This is how federal funding

was given to state departments for school operations and administration. No Child Left Behind contains four principles: 1) increased accountability for school districts and schools in terms of meeting state academic standards in math and reading; 2) school choice for parents and students who wish to transfer out of a "failing" school (i.e., a school not reporting adequate yearly progress [AYP] toward meeting the standards); 3) greater flexibility for states, school districts, and schools in deciding how best to use federal education funds awarded for achievement; and 4) federal funds to promote quality reading programs for K-3 students-the President's Reading First initiative (Odland, 2006). Education accountability was forced on schools causing systems to approach curriculum and testing in a different manner. In the past, districts and schools were trusted with the school improvement plans and that was all the accountability that was used.

With NCLB the accountability came with penalties for schools and districts that did not make adequate yearly progress (AYP). Subgroups within the AYP status were influenced by a deficit shown by different groups represented within the schools. The discourse of deficiency focuses on the perceived deficient culture, schooling, and life experiences in general, of African American children. School administrators and teachers who participate in this discourse often claim that the academic achievement of many Black students exists because Black children experience higher rates of poverty, live in high-crime communities, have unstable single parenting, and minimal parental involvement, as well as suffering from the negative effects of slavery, segregation, racism, and discrimination (Stinson, 2006).

On December 10, 2015, President Obama signed the Every Student Succeeds Act (ESSA), legislation to rewrite the Elementary and Secondary Education Act and replace

the No Child Left Behind Act (NCLB). Under the ESSA, the AYP system would be replaced. States would be required to establish long-term goals, including measures of interim progress toward those goals, for performance on the reading and mathematics assessments, high school graduation rates, and the percentage of English learners achieving English language proficiency. States would then be required to annually measure the performance of all students and each subgroup of students in schools based on the aforementioned measures and at least one other measure for elementary and secondary schools that are not high schools and at least one indicator of school quality or student success (Skinner, 2015).

The American educational system is a system of racism (Tatum, 2003). Racism according to Tatum is "like other forms of oppression, is not only a personal ideology based on racial, prejudice but a system involving cultural messages and institutional policies and practices as well as the beliefs and actions of individuals" (p. 7). Additionally, Tatum (2003) insisted that" in the context of the United States, this system clearly operates to the advantage of Whites and to the disadvantage of people of color" (p. 7).

Although we know that Black students have underperformed academically, there has not been sufficient research on factors contributing to their underperformance. There have been many concerns about the underachievement of Black male students. Researchers, school administrators, teachers, and parents have an interest in why Black male students are not performing well in the classroom, on standardized tests, and ultimately post-educational life. Thus, research needs to be done to understand why Black male students underachieve academically.

Lehman (2003) reports in The Black Almanac "Studies show that nearly 40% of adult Black males are functionally illiterate, and the number of Black males incarcerated far outnumbers the number of Black males in college" (p. 706). The achievement difficulties of the Black male had been a persistent fact for many years. Kunjufu (2002) asserts "Governors review fourth-grade reading scores to determine prison growth" (p. 1).

Voices of Black Males: Elementary Level

The voices of Black males at the elementary level were a whisper. Studies indicate "Researchers have examined the educational problems of Black males extensively in recent years (Hopkins, 1997; Hrabowski et al., 1998; Polite & Davis, 1999; Price, 2000 as cited by Berry, 2005, p. 46). However, little research had been conducted on the Black male at the elementary level. The following articles presented the voices of Black boys at the elementary level. The article African American Boys…The Cries of a Crisis by E. Bernard Franklin (2006) provided research findings and other data collected about the problems of the Black male student. Findings indicated that Black boys start to deny learning activities that they view as "what girls do" to conduct that was in line with "what boys do." A significant finding was that Black boys need support; they often believe that no one cares about them. Tyson (2002) indicated a relationship between low achievement and antagonistic attitudes of Black males and acknowledged that a modest amount of research had been conducted on the relationship between achievement and attitude at the elementary level. However, findings supported the creation of an antagonistic attitude toward school for the Black male as he progressed through the grades.

Hearing Footsteps in the Dark: Black Students' Descriptions of Effective Teachers by Tyrone Howard (2002) offered the students' perspective of the learning environment. Howard believed students' perspectives may provide answers to some of the persistent educational concerns. However, little research had been conducted on the student's perspective of the educational environment. Howard (2002) states "Persistent underachievement and social disenfranchisement may very well represent a plea for help or a cry for intervention that has fallen on deaf ears" (p. 427).

The unrelenting achievement gaps of the Black male in the public schools of America were cries for help. When will we listen to their voices and help? Dr. Jawanza Kunjufu had listened to the voices of the elementary Black male as he wrote about the "Fourth Grade Failure Syndrome" in his book entitled Countering the Conspiracy to Destroy Black Boys. Kunjufu (2005a) contends "We don't lose our boys instantaneously; we lose them when they stop growing spiritually when they become cynical…[and] when they begin to lack confidence in their ability to successfully manage school" (pp. 54-55). Therefore, it was essential that parents and educators listened to the spoken words and unspoken cries of negative behaviors and antagonistic attitudes of the Black male to understand his personal and academic needs.

Student Attendance

Attendance included the student's physical presence at school. Roby (2004) reported that there was a positive correlation between the number of times a student was absent and the achievement level. The relationship was made to unexcused absences and academic achievement; illnesses and family deaths were excluded. Unexcused absence included cutting school or class, school expulsions, school suspensions, and

entertainment travel trips. Research indicates "the correlations are considered significant" (Isaac & Michael, 1990 as cited by Roby, 2004) for students in the elementary, middle, and high school levels. Consequently, the number of unexcused school absences, which may include a number of expulsions and suspensions for the Black male student, had the potential to, directly and indirectly, affect achievement. The teacher/student relationship in the public schools of America was an important component of learning for the Black male.

Theoretical Framework

Theories were the beliefs on which a study was based. Several cognitive and behaviorist theories and principles of learning were at the foundation of this study. Ormrod (2004) noted cognitive assumptions that were vital to this study, such as (a) "Individuals are actively involved in the learning process; (b) Knowledge is organized; (and c) Learning is a process of relating new information to previously learned information" (p. 160). Learning was a process that encompassed many aspects of the individual. The learning involved thinking, organizing thoughts, and using one's experiences and perceptions to make sense of thoughts. Learning was growth; it was an active process. The Multiple Intelligences Theory (MI), a cognitive theory, by Howard Gardner is part of the study's foundation. Gardner (1993) presented a "broaden … notion of what can be considered intelligence, in terms of both individual [innate strengths and interest] and cultural components" (p 236-237). Learning took place in different ways and at different rates for different individuals. Learning may be demonstrated in ways other than with a pencil and paper evaluation. The beliefs that support differentiated instruction were similar to MI beliefs. Tomlinson and Allan (2000) contend a belief of

differentiated instruction as "Individuals …differ significantly as learners; these differences matter in the classroom and schools should help us understand and respect the differences" (p. 17). The learning process was a unique process for each individual.

Cultural differences were an essential component of learning. The culturally responsive teaching theory and the principles of multicultural education embraced the impact cultural experiences had on student achievement. The growth of a diverse student population required attention to the effects of the student's culture on the student's achievement progress. Gay (2000), an advocate of culturally responsive teaching contends "Teaching is a contextual and situational process…it is most effective when ecological factors, such as prior experiences, community settings, cultural backgrounds, and ethnic identities of teachers and students, are included in its implementation" (p. 21). Family and culture provided an individual's first learning experiences; new learning experiences create dimension and enhancement of thought for the learner. Segments of the Progressive Educational Theory and Social Cognitive Theory were incorporated to recognize the community relationship of the Black culture. Research confirmed that "collectivism is a cultural value of students of color that emphasizes interdependence" (Williams, 2003, p. 72).

Gutek (2004) confirmed that "working [in] cooperative and collaborative groups" (p. 280) were components of a child-centered approach to learning. Ormrod (2004) states "Social cognitive theory focuses on what and how people learn from one another, encompassing such concepts as observational learning, imitation, and modeling" (p. 105). Working as a group and learning by observing the behavior of others were characteristics of the learning styles of cultures with a history of collectivism. Understanding the natural

guiding forces of the student was central to understanding student behavior. Payne (2005) believed that "Hidden rules exist in poverty, in the middle class, and in wealth, as well as in ethnic groups…Hidden rules are about the salient, unspoken understandings that cue the members of the group that this individual does not fit" (p. 9). The middle-class teacher must become knowledgeable of the hidden rules of students in poverty. Students of poverty must become knowledgeable of the hidden rules of the middle-class teacher. Consequently, communication was needed for an effective teaching and learning environment.

Summary

Generally, literature appears limited and dated regarding the learning and achievement needs of fourth-grade Black males in America. However, the factors affecting those males' learning and achievement in the traditional public schools of America are revived and probed by Milner (2012), addressing opportunity gaps in educational practice, and Simms (2012), addressing the achievement gaps within the targeted population. Furthermore, Henfield (2012) specifically discusses the ten non-negotiables for overall Black male achievement. Finally, the National School Board Association (2020) explored the Black student's conditions in the educational setting, while Tatum, et.al (2021) addressed racism in early childhood education.

Chapter III: Methodology

This quantitative causal-comparative research study examined the problem of the negative achievement gap among fourth-grade Black males in one Central Arkansas school district. Many Black males have continued to experience achievement difficulties in public schools. Theorists, researchers, policymakers, school administration, teachers, and parents have voiced their concerns about the achievement of middle school and high school males, but little has been reported about the problems of the elementary school male (Adams-King, 2016).

The problem of high school dropouts begins in elementary school. It is known that the achievement gap for Black males begins at the third-grade level, which is consistent with renowned French psychologist Jean William Fritz Piaget's assertions in his onset theory of cognitive development's third-stage expectations of free-will manifestations and moral judgment, found in the Concrete operational stage. This is explained in *The Origin of Intelligence in the child* (1977). Recording and measuring these dropout rates does nothing to solve the problem. But at the elementary level, identification and remediation can potentially stem this problem (Simms, 2012).

The purpose of the study was to investigate certain behavioral variables that may impede the learning and achievement of fourth-grade Black males in a school district in Central Arkansas. The study sought to first determine if an achievement gap existed among fourth-grade students by ethnicity and gender in that school district, and if so, the researcher intended to analyze the effect of attendance rates to provide insight into the reasons for the underachievement of Black males and the development of specific

strategies to improve learning and achievement for these students in urban schools in Arkansas.

Research Questions/Hypotheses

The fundamental questions that guided this study were:

1. Is there a difference between the ACT Aspire math test scores of fourth graders in one Central Arkansas school district by ethnicity and gender?

H_o1: There was no difference between the ACT Aspire math test scores of fourth graders in one Central Arkansas school district by ethnicity and gender.

2. Is there a difference between the ACT Aspire reading test scores of fourth graders in one Central Arkansas school district by ethnicity and gender?

H_o2: There was no difference between the ACT Aspire reading test scores of fourth graders in one Central Arkansas school district by ethnicity and gender.

3. Is there a relationship between ACT Aspire math test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender?

H_o3: There was no relationship between ACT Aspire math test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender.

4. Is there a relationship between ACT Aspire reading test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender?

H_o4: There was no relationship between ACT Aspire reading test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender.

The instruments used to collect data necessary to answer the research questions were the ACT Aspire math and reading assessment scores for the fourth-grade students in the participating school district, which served as the dependent variable for this study. In addition, attendance data were collected to represent the independent variable, behavior. A series of statistical analyses were used to analyze the data to answer these questions. Research Questions (RQ) 1 & 2 were analyzed using parametric and non-parametric statistical procedures, *t*-tests, One-Way ANOVAs, and Kruskal-Wallis, while RQ 3 and 4 were analyzed using correlation and multiple regression.

Research Methodology

The purpose of this study was to determine if achievement gaps existed among the various fourth-grade demographic groups in one central Arkansas school district, and if so, to analyze the relationship between certain behavioral variables (independent variables) and test results from ACT Aspire in math and reading (dependent variables) if gaps in achievement were found in the various fourth-grade demographic groups.

Because the data used in this study were archived data, the researcher was not able to manipulate the independent variable. Therefore, the most logical design for this study was a causal-comparative design (Creswell, 2009). This methodology allowed the researcher to compare the results of fourth-grade test results across demographic groups to determine if there were statistically significant differences between the groups. Once differences were discovered, correlation and multiple regression were utilized to determine the effect or strength of the relationship between student behavior and test scores.

Research Design

Causal-comparative research or *ex post facto* research permits the establishment of a quasi-experimental design whereby two or more groups are set up for comparison purposes (Graves, 2021). In the study, groups were established by ethnicity and gender and their test scores on ACT Aspire assessments were statistically analyzed to determine if there were statistically significant differences among these groups. One limitation of the study was the lack of random selection, which is common in causal-comparative research. Ideally, the researcher would create a matched-pair set of groups to make the groups as similar as possible so that the only difference would be the independent variable (behavior). For this study, it was assumed that the groups were similar, and certain statistical checks were employed to gain the most rigorous result.

Quantitative data were analyzed, and the entire population of fourth-grade students in this central Arkansas school district was selected as participants. The data consisted of ACT Aspire test scores in math and reading and attendance records for all fourth-grade students in the participating district.

Setting

XYZ School District (pseudonym) is an urban school district located in Central Arkansas. The district has a student population comprised of 57.1% of students identified as Black. In terms of socioeconomic status (SES), 74% of the students are low-income, as measured by the number of free and reduced lunches. The district has one pre-kindergarten, nine kindergartens through fifth-grade elementary schools, one sixth grade middle school, one seventh and eighth grade middle school, one sixth through twelfth grade alternative school, and one ninth through twelfth grade high school. The district enrollment is reported to be 7,685 students.

Target Population

The target population was the total population of fourth-grade students in the participating urban school district in Central Arkansas. The grade configuration represented in all the participating schools in the district was Pre-K through fifth grade. The student population was predominantly Black (59%), and the participants for this study were all fourth-grade students in the school district during the 2020-21 academic year. Their age range was nine to 10 years.

Table 1

Target Population by Frequency and Percentages by Gender and Ethnicity

	Frequency	Percent
Black Male	158	27.8
Black Female	177	31.2
White Male	80	14.1
White Female	65	11.4
Hisp Male	46	8.1
Hisp Female	30	5.3
Native American Male	5	.9
NA Female	3	.5
Asian Male	2	.4
Asian Female	2	.4
Total	568	100.0

This study included a total of nine elementary schools in a central Arkansas school district during the 2020-2021 school year. Table 1 illustrates the total number of students included by gender and ethnic group. The total number of students tested was 568, with 59% of the total population identifying as Black, followed by 25.5% White, and 13.4% Hispanic. Only 2.2% of the total population was Native American and Asian

combined. Because these two ethnic groups had such small n sizes, they were not included in the analyses to answer the research questions.

Instrumentation

The 2021 ACT Aspire assessment for mathematics and reading scores of all fourth-graders in this central Arkansas school district was collected to serve as the dependent variable in this study. The individual student data compared the composite score among the various demographic groups to determine differences in the scores.

The ACT Aspire end-of-year summative assessment was used to assess all Arkansas public school students in grades three through 12 unless they qualified for an alternate assessment. Each student participated in English, reading, writing, mathematics, and science tests (State of Arkansas, 2021a).

ACT Aspire Fast Facts adopted from the ACT website (ACT Inc, 2021):

- Vertically articulated, a standards-based system of summative assessments
- Aligned to ACT College Readiness Benchmarks and Common Core State Standards
- Anchored by the capstone college readiness assessment, the ACT
- Multiple question types: constructed response, selected response, and technology-enhanced subject areas: English, math, reading, science, and writing for grades 3–10
- Online delivery of assessments with traditional paper-and-pencil option
- Accurately predicts students' future scores on Aspire Summative and the ACT
- Periodic testing administration offered.

The ACT Aspire has four performance-level descriptors which include in need of support, close, proficient, and exceeding. The cut score for the proficient level is based on the ACT Readiness Benchmark at that grade level (ACT, Inc., 2019). If the student's score falls well below the benchmark of the readiness score, they are considered "in need of support." If the score falls below but close to the readiness mean score the student is "close" to being ready for the next level of education. If on or slightly above the readiness score the student is considered "ready" for the next level. If the readiness score is above the ready benchmark score, the student is "exceeding" the expectations of students in their grade level (ACT, Inc., 2019).

Performance level descriptors (PLD) outline the knowledge, skills, and practices that students perform at any given level and what they achieve in each content area at each grade level. PLD indicates if the students are academically prepared to engage successfully in further studies in each content area, the next grade's material, and eventually at the high school level to prove that they are college and career-ready (State of Arkansas, 2021a).

Data Collection

Upon approval by the dissertation committee, an application was submitted to the Arkansas Tech University Institutional Review Board (IRB) seeking approval to conduct this study. Permission from the participating school district was obtained and a request was submitted to receive a file containing the ACT Aspire test scores for all fourth-grade students in the district. The data were identifiable by gender, ethnicity, and school location, but the individual student's identifying markers were excluded. The students were only differentiated by an assigned number by the district.

In addition, the researcher requested attendance data for all students as well. These data were used as the independent variable, behavior, in the data analysis to determine the relationship between the independent and dependent variables.

All data were received in an Excel® spreadsheet and then uploaded into SPSS®25 for data analysis. The data were secured during the data analysis by the researcher and will be deleted at a later date.

Data Analysis

Data analysis was conducted on the collected data using SPSS software. RQ 1 and 2 were analyzed using t-tests, Analysis of Variance (ANOVA), and Kruskal-Wallis to compare the various demographic groups for differences in math and reading test scores. ANCOVA (Analysis of Covariance) was used to compare the various demographic groups for differences in math and reading test scores using total days absent as a covariant to determine. RQ 3 and 4 were analyzed using Spearman correlation and multiple regression to determine the relationship between the independent variable (behavior) and the dependent variable (test scores) to determine if behavior is impacting the academic performance of Black male fourth-grade students in this central Arkansas school district.

Summary

Chapter 3 provides a synopsis of the method used for the study, which included the research questions and hypothesis, research design, setting, population and sampling, and data collection methods. In this chapter, the researcher also describes the instruments used to collect data for the study. In Chapter 4, the researcher reports the results of the

various statistical analyses and answers each RQ. Chapter 5 details the researcher's results, conclusions, and recommendations for future studies.

CHAPTER IV: RESULTS

The purpose of this causal-comparative study was to determine if achievement gaps exist among the various fourth-grade demographic groups in one central Arkansas school district, and if so, to analyze the relationship between certain behavioral variables (student attendance), demographic variables (gender and ethnicity), and results from one administration of the state-mandated ACT Aspire math and reading assessments (dependent variables).

Past research has shown a consistent finding that there are achievement gaps that appear between certain demographic subgroups, particularly Black male students. In general, this gap begins to appear at the third-grade level and predicts future dropout statistics. The present study examined the achievement scores of fourth-grade students in one central Arkansas school district to first determine if any gaps existed among this student population and if found, to determine the effect of certain independent variables that may be exacerbating this gap.

In this chapter, the researcher presents the results of a series of statistical analyses to answer the research questions. To accomplish these analyses, the researcher used archived fourth-grade student data provided by the participating school district. The data included both math and reading ACT Aspire scores from 2020-21 reported by gender and ethnicity, and attendance data for each fourth-grade student in the district. Students that did not take these tests or were not enrolled for the entirety of the 2020-21 school year were excluded.

Permission to use these data was received from the school district and the researcher received approval from the Arkansas Tech University Institutional Review

Board (IRB) prior to collecting the data (Appendix A and B). Once the data were received in an Excel® spreadsheet, they were then uploaded into an SPSS®25 dataset for analysis using descriptive and inferential statistics to determine if achievement gaps existed and to examine the relationship between the identified behavioral and demographic variables.

Research Questions/Hypotheses

1. Is there a difference between the ACT Aspire math test scores of fourth graders in one Central Arkansas school district by ethnicity and gender?

H_o1: There is no difference between the ACT Aspire math test scores of fourth graders in one Central Arkansas school district by ethnicity and gender.

2. Is there a difference between the ACT Aspire reading test scores of fourth graders in one Central Arkansas school district by ethnicity and gender?

H_o2: There is no difference between the ACT Aspire reading test scores of fourth graders in one Central Arkansas school district by ethnicity and gender.

3. Is there a relationship between ACT Aspire math test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender?

H_o3: There is no relationship between ACT Aspire math test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender.

4. Is there a relationship between ACT Aspire reading test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender?

H_o4: There is no relationship between ACT Aspire reading test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender.

Target Population

The target population for this study was all fourth-grade students in one central Arkansas school district. The district has nine elementary schools with a grade configuration of Pre-K through fifth grade, including a fourth grade. Table 2 provides the demographic makeup of the fourth-grade participants who were enrolled in the district for the 2020-21 school year by gender and ethnicity.

Table 2

Crosstab of Target Population by Gender and Ethnicity

			Total					
			Black	White	Hispanic	Native American	Asian	Total
Gender	Male	Count	158	80	46	5	2	291
		% Gender	54.3%	27.5%	15.8%	1.7%	0.7%	100.0%
		% Ethnicity	47.2%	55.2%	60.5%	62.5%	50.0%	51.2%
		% of Total	27.8%	14.1%	8.1%	0.9%	0.4%	51.2%
	Female	Count	177	65	30	3	2	277
		% Gender	63.9%	23.5%	10.8%	1.1%	0.7%	100.0%
		% Ethnicity	52.8%	44.8%	39.5%	37.5%	50.0%	48.8%
		% of Total	31.2%	11.4%	5.3%	0.5%	0.4%	48.8%
Total		Count	335	145	76	8	4	568
		% Gender	59.0%	25.5%	13.4%	1.4%	0.7%	100.0%
		% Ethnicity	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	59.0%	25.5%	13.4%	1.4%	0.7%	100.0%

There is a total of 568 fourth-grade students who make up the target population for this study. By gender, there were 291 (51.2%) males and 277 (48.8%) females. By ethnicity, there are 335 (59%) Black, 145 (25.5%) White, 76 (13.4%) Hispanic, 8 (1.4%) Native American, and 4 (0.7%) Asian students in the target population. Because the cell *n* size for Native American and Asian students was small, those ethnic groups were not

included in the statistical analyses to determine differences and relationships between the independent variables and the dependent variables. In general, this target population can be characterized as diverse ethnically and equally numbered by gender.

In order to determine whether or not there were achievement gaps present among the participating students, the student data were recoded into various subgroups labeled by their gender and ethnicity as provided in Table 3.

Table 3

Demographic Subgroups by Frequency and Percentage

Subgroup	*N*	*%*
Black Males	158	28.4%
Black Females	177	31.8%
White Males	80	14.4%
White Females	65	11.7%
Hispanic Males	46	8.3%
Hispanic Females	30	5.4%
Total	556	100%

The largest subgroup was Black females which comprised 31.8% of the total target population. They were followed by Black males (28.4%), White males (14.4%), White females (11.7%), Hispanic males (8.3%), and finally Hispanic females (5.4%). The deleted student demographic groups each represented less than 1% of the total target population and were not included in the data analyses used to answer the research questions.

Descriptive Statistics

In addition to the demographic variables of gender and ethnicity, as illustrated in Table 3, additional data were collected for the independent variable of student absence and the dependent variables consisting of the 2020-21 ACT Aspire test scores in math and reading. Table 4 provides the descriptive statistics for these variables.

Table 4

Means and Standard Deviations for Days Absent, Math, and Reading ACT Aspire Scores

	Days Absent (IV)	Math (DV1)	Reading (DV2)
N	568	568	568
Mean	16.1356	412.97	413.00
Std. Deviation	12.29797	4.373	6.178

Table 5

ACT Aspire Math: Means, Standard Deviations, and Standard Error by Subgroup

	N	*M*	*SD*	Std. Error
Black Males	158	411.13	3.459	.275
Black Females	177	412.01	3.384	.254
White Males	80	415.93	4.342	.485
White Females	65	416.52	4.978	.617
Hispanic Males	46	412.67	3.989	.588
Hispanic Females	30	413.03	4.627	.845
Total	556	412.96	4.355	.185

The dependent variables in this study consisted of students' scale scores on the ACT Aspire Tests in math and reading from the 2020-21 administration of this state-mandated assessment. Each of the fourth-grade students that participated in this study received a reported score which was analyzed separately to determine if achievement gaps existed among the subgroups. Tables 5 and 6 illustrate the mean test scores in math and reading by subgroup.

Table 6

ACT Aspire Reading: Means, Standard Deviations, and Standard Error by Subgroup

	N	*M*	*SD*	Std. Error
Black Males	158	412.02	5.815	.463
Black Females	177	412.58	5.662	.426
White Males	80	414.63	6.216	.695
White Females	65	414.63	7.197	.893
Hispanic Males	46	413.00	5.899	.870
Hispanic Females	30	413.17	7.037	1.285
Total	556	413.02	6.135	.260

Data Analysis

RQ1. Is there a difference between the ACT Aspire math test scores of fourth graders in one Central Arkansas school district by ethnicity and gender?

H_o1. There is no difference between the ACT Aspire math test scores of fourth graders in one Central Arkansas school district by ethnicity and gender.

RQ1 was analyzed by comparing the mean test scores in math on the ACT Aspire assessment by gender and ethnicity-defined subgroups. Initially, a One-Way ANOVA was used to determine if differences existed between any of the subgroups on the ACT Aspire math assessment.

In order to use ANOVA to compare differences in math scores across three or more groups, three criteria must be met; normality, *n* quota, and homogeneity of variance. The first criterion, normality was met by demonstrating that all subgroups were normally distributed. This was accomplished by running histograms with normal curves included for each subgroup distribution of math scores. It was determined by the researcher that the distributions were all normal.

To determine if the data met the *n* quota criterion, a simple review of the *n* for each subgroup demonstrated that each subgroup met the minimum quota of 30 (See Table 5).

The third criterion can only be determined after running the ANOVA and reviewing the Test of Homogeneity of Variances. In order to determine if an ANOVA is appropriate for this analysis, the resulting Levene's test must show a significance greater than $p = .05$ which indicates no significant differences in the variances between the subgroups. In this analysis, Levene's test was at $p = .001$, which indicated that the variances of the subgroups were significantly different. Because one of the three criteria for using ANOVA was not met, it was determined that a Kruskal-Wallis test was more appropriate.

The results of the Kruskal-Wallis test showed that there were differences in the ranking of mean scores between the subgroups on the math test, $H(5) = 110.24$, $p < .000$. The *n* and mean rank for each subgroup are provided in Table 7.

Table 7

Kruskal-Wallis Test Mean Ranks by Subgroup in Math

Subgroup	*N*	Mean Rank
Black Males	158	209.70
Black Females	177	247.81
White Males	80	382.83
White Females	65	404.91
Hispanic Males	46	275.10
Hispanic Females	30	275.02
Total	556	

These results indicated that there were differences in the mean ranks among the subgroups. As viewed in Table 7, the mean rank for Black males is considerably lower than the other subgroups. Unlike ANOVA, Kruskal-Wallis tests do not report post hoc results. Therefore, the only way to determine which subgroups' mean ranks were significantly different was to run a series of Kruskal-Wallis tests comparing one subgroup against another. In each case, the mean rank of Black males was smaller than the comparison subgroup indicating that the differences are reflected in lower math scores for Black males.

Table 8

Series of Kruskal-Wallis Tests Comparing Black Males with Other Subgroups

Subgroup Pairs	*Kruskal-Wallis Results*
Black Males v. Black Females	$H(1) = 5.99, p < .014$
Black Males v. White Males	$H(1) = 58.27, p < .000$
Black Males v. White Females	$H(1) = 63.31, p < .000$
Black Males v. Hispanic Males	$H(1) = 6.00, p < .014$
Black Males v. Hispanic Females	$H(1) = 4.47, p < .035$

The results shown in Table 8 support previous research indicating that there is an achievement gap between Black males and other subgroups that begins around the third grade. These fourth-grade math test results reflect those previous results. In each pairing, the *p*-value is less than .05 showing a significant difference in the mean ranks of these subgroups. The largest gap is between Black males and White males and females. There is also a significant gap between Black males and Black females which teases out race as an effect on the results. The smallest gap is found between Black males and Hispanic females, but it is still a significant difference.

Therefore, the answer to RQ1 is that there is a significant difference by ethnicity and gender among fourth-grade students on the ACT Aspire math test as administered to students in the participating school district, and the null hypothesis, $H_0 1$ is rejected. The results indicated that there is a significant achievement gap between Black male students and all other subgroups by gender and ethnicity, but that these differences are masked at

the grade level. That is when compared across all ethnicities and both genders the differences in math scores do not appear.

RQ2. Is there a difference between the ACT Aspire reading test scores of fourth graders in one Central Arkansas school district by ethnicity and gender?

H_o2. There is no difference between the ACT Aspire reading test scores of fourth graders in one Central Arkansas school district by ethnicity and gender.

RQ2 was analyzed by comparing the mean test scores in math on the ACT Aspire assessment by gender and ethnicity-defined subgroups. As with the previous research question, a One-Way ANOVA was the preferred method to determine if differences existed between any of the subgroups on the ACT Aspire reading assessment.

In order to use ANOVA to compare differences in reading scores across three or more groups, three criteria must be met; normality, *n* quota, and homogeneity of variance. The first criterion, normality was met by demonstrating that all subgroups were normally distributed. This was accomplished by running histograms with normal curves included for each subgroup distribution of reading scores. It was determined by the researcher that the distributions were all normal.

To determine if the data met the *n* quota criterion, a simple review of the *n* for each subgroup demonstrated that each subgroup met the minimum quota of 30 (See Table 6).

The third criterion can only be determined after running the ANOVA and reviewing the Test of Homogeneity of Variances. In order to determine if an ANOVA is appropriate for this analysis, the resulting Levene's test must show a significance greater than $p = .05$ which indicates no significant differences in the variances between the

subgroups. In this analysis, Levene's test was at $p = .124$, which indicated that the variances of the subgroups were not significantly different. Because all three criteria for using ANOVA were met, it was determined that a One-Way ANOVA test was appropriate to answer this research question.

To answer RQ2, the researcher used One-Way ANOVA to determine if there were any differences in mean scores on the 2020-21 administration of the ACT Aspire Reading assessments of fourth-grade students in the participating school district. The ANOVA compared the effect of the independent variable (gender/ethnicity subgroups) on the dependent variable (mean scores on the ACT Aspire reading test) among the participating students. The ANOVA results revealed that there was a statistically significant difference in the mean reading test scores between the six subgroups analyzed ($F(5, 550) = 3.073$, $p = .010$).

Table 9

ANOVA Results Comparing Scores on ACT Aspire Reading Test by Subgroups

	Sum of Squares	*df*	Mean Square	*F*	Sig.
Between Groups	567.681	5	113.536	3.073	.010
Within Groups	20322.060	550	36.949		
Total	20889.741	555			

To determine which of the subgroups had the differences in mean reading test scores, the researcher ran a Sidak *post hoc* test. This test for multiple comparisons found that the mean value of reading scores was significantly different between Black males and White males ($p = .028$, 95% C.I. = -5.06, -0.15). The *p*-value for the comparison of

Black males and White females was $p = .054$. But since the significance level was set at $p < .05$, this comparison was disregarded. Therefore, the only difference found between mean reading test scores was between Black males and White males. Table 10 provides the results of the Sidak *post hoc* test.

Table 10

Sidak Post Hoc Results from the One-Way ANOVA Analysis of Mean Reading Score Differences by Subgroups

					95% Confidence Interval	
(I) Subgroup	(J) Subgroup	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Black Males	Black Females	-.563	.665	1.000	-2.52	1.39
	White Males	-2.606*	.834	.028	-5.06	-.15
	White Females	-2.612	.896	.054	-5.25	.02
	Hispanic Males	-.981	1.018	.998	-3.98	2.01
	Hispanic Females	-1.148	1.211	.998	-4.71	2.41

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

Based upon these analyses, the answer to RQ2 is that there is a statistically significant difference in mean reading scores among subgroups of fourth-grade students in the participating school district. A *post hoc* analysis of the results revealed that there is a difference between the reading scores of Black males compared to White males.

However, there were no statistically significant differences among any of the other subgroups. Therefore, H_o2 is rejected.

Adding Attendance as a Covariate

The results for RQ 1 and 2 supported previous research that indicates there is an achievement gap that affects Black male students starting around the third grade. It was noted that when comparing math and reading scores at the school level these differences are not apparent, statistically speaking. It requires disaggregation of the data and comparisons of students by demographics before these achievement gaps appear.

To add a covariate into the statistical analysis, the researcher intended to investigate whether using the independent variable, total days absent, as a covariate or confounding variable altered the results reported in any way.

An ANCOVA (Analysis of Covariance) was employed to analyze whether or not there are statistically significant differences in reading and math scale scores on the ACT Aspire test results for these fourth-grade students. Using SPSS®25 the researcher used test scores as the dependent variables and ethnicity as an independent variable. Then added total days absent as the covariate. address the research questions and test the Null hypotheses of this study. The ANCOVA was used to compare the various demographic groups for differences in math and reading test scores when the confounding variable of attendance is present. An alpha level of $p < .05$ was used to identify statistical significance. Table 11 below presents the results.

Table 11

ANCOVA

Dependent Variable:	Type III Sum of Squares	*df*	Mean Square	*F*	sig.
Reading SS					
Total Days Absent	354.204	1	354.204	9.619	.002
Ethnicity	502.934	4	125.734	3.414	.009
Math SS					
Total Days Absent	470.94	1	470.94	26.487	.000
Ethnicity	316.107	4	79.027	4.453	.002

The data in Table 11 shows the *p*-value for the reading scale score (SS) and the total days absent is .002. The $p < .05$ indicates that there is a statistically significant difference when the confounding variable of attendance is present on the ACT Aspire reading test. The *p*-value for reading scale score (SS) and ethnicity is .009. The $p < .05$ indicates that there is a statistically significant difference when the confounding variable of attendance is present on the ACT Aspire reading test.

The data in Table 11 shows the *p*-value for math scale score (SS) and total days absent is .000. The $p < .05$ indicates that there is a statistically significant difference when the confounding variable of attendance is present on the ACT Aspire math test. The *p*-value for math scale score (SS) and ethnicity is .002. The $p < .05$ indicates that there is a statistically significant difference when the confounding variable of attendance is present on the ACT Aspire math test.

For reading, since the significance value of .009 is <.05, we reject the null hypothesis that there is not a significant difference between the mean reading scores and

conclude that there is a significant difference between the ethnicity groups when we control for days absent.

For math, since the significance value of .002 is <.05, we reject the null hypothesis that there is not a significant difference between the mean math scores and conclude that there is a significant difference between the ethnicity groups when we control for days absent.

Basically, the addition of total days absent as a covariant has an effect on the differences in test scores by ethnicity, and is a significant factor in the achievement gap affecting Black male students.

RQ3. Is there a relationship between ACT Aspire math test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender?

H_o3. There is no relationship between ACT Aspire math test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender.

To address RQ3 to determine if there is a relationship between ACT math test scores of fourth graders in the participating school district, the first step was to determine if there was a statistically significant correlation between a student's number of absences and their scale scores on the ACT Aspire math test by subgroups.

In order to use a Pearson correlation, three criteria must be met; normality, linearity, and homoscedasticity. The distribution for the two variables tested was found to be normally distributed, so the test for normality was met. However, using a scatterplot and regression fit line to examine the scatterplot revealed that the regression points were not linear nor of a proper density. When any of the three criteria are not met, the Spearman correlation is appropriate.

The results of the Spearman correlation are provided in Table 12. There was a statistically significant correlation between all three variables. To understand further how the independent variable, total days absent affects the students' math scale scores on the ACT Aspire assessment a multiple regression was run to determine if the achievement gap identified in RQ1 (Black males performing lower on math scale scores compared to other subgroups) is adversely affected by absences.

Table 12

Spearman Correlation Matrix for Total Days Absent, Math Scale Scores, and Subgroups

	Total Days Absent	Math Scale Scores	Subgroups
Total Days Absent	--	-.28**	-.17**
Math Scale Scores	-.28**	--	.33**
Subgroup	-.17**	.33**	--

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

The purpose of running a multiple regression was to determine the predictive ability the independent variable total days absent has on the mean scale scores on the ACT Aspire math assessment mandated by the state. The process consisted of using total days absent, gender, and ethnicity as predictor variables and the ACT Aspire math test scale scores by all fourth-graders in the participating district as the dependent variable. The results of the multiple regression analysis are presented in Table 13.

Multiple linear regression was calculated to predict scores on the ACT Aspire math assessment based on gender, ethnicity, and total days absent during the school year. The model summary for this multiple regression analysis is presented in Table 13. The math scale scores were used as the dependent variable. A series of independent variables starting with total days absent, followed by gender, and then ethnicity were set up using a

stepwise regression procedure. As the results show, as each independent variable is added it calculates the effect that each variable or combination of variables has on the dependent variable. Model 1 with only total days absent as the predictor or independent variable has $R^2 = .053$. This means that 5.3% of the variance in math scores is explained by attendance. The next model adds gender to the total days absent and the $R^2 = .056$. The R^2 change = .002, which means that gender only added .2% in explaining the variance in math scores. The *F* change was not statistically significant a $p = .237$. This result indicates that gender does not play a significant role in the differences in math scores.

Finally, Model 3 adds ethnicity to the two previous predictor variables. The $R^2 = .084$. This means that ethnicity added almost 3% in explaining the variance in math scores. The *F* change was significant at $p = .000$.

In summary, this multiple regression further supports the results of differences in math scores and in particular the achievement gap among Black male students. The percentage of variance explained by total absences and ethnicity demonstrates that not being in school impacts the achievement of Black male students disproportionately than other demographic subgroups. Based on the analyses presented in answering RQ3, the researcher has rejected the $H_0 3$.

Table 13

Model Summary for Multiple Regression

					Change Statistics				
Model	R	R^2	Adj. R^2	Std. Error of the Estimate	R^2 Change	*F* Change	*df*1	*df*2	Sig. *F* Change
1	.231[a]	.053	.052	4.241	.053	31.233	1	554	.000
2	.236[b]	.056	.052	4.240	.002	1.399	1	553	.237
3	.289[c]	.084	.079	4.180	.028	16.890	1	552	.000

a. Predictors: (Constant), Total Days Absent
b. Predictors: (Constant), Total Days Absent, Gender
c. Predictors: (Constant), Total Days Absent, Gender, Ethnicity
d. Dependent Variable: Math SS

RQ4. Is there a relationship between ACT Aspire reading test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender?

H_o4: There is no relationship between ACT Aspire reading test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender.

To address RQ4 to determine if there is a relationship between ACT math test scores of fourth graders in the participating school district, the first step was to determine if there was a statistically significant correlation between a student's number of absences and their scale scores on the ACT Aspire reading test by subgroups.

In order to use a Pearson correlation, three criteria must be met; normality, linearity, and homoscedasticity. The distribution for the two variables tested was found to be normally distributed, so the test for normality was met. However, using a scatterplot and regression fit line to examine the scatterplot revealed that the regression points were not linear nor of a proper density. When any of the three criteria are not met, the Spearman correlation is appropriate.

The results of the Spearman correlation are provided in Table 14. There was a statistically significant correlation between all three variables. To understand further how the independent variable, total days absent affects the students' reading scale scores on the ACT Aspire assessment a multiple regression was run to determine if the achievement gap identified in RQ2 (Black males performing lower on reading scale scores compared to other subgroups) is adversely affected by absences.

Table 14

Spearman Correlation Matrix for Total Days Absent, Reading Scale Scores, and Subgroups

	Total Days Absent	Reading Scale Scores	Subgroups
Total Days Absent	--	-.17**	-.17**
Reading Scale Scores	-.17**	--	.12**
Subgroup	-.17**	.33**	--

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

The purpose of running a multiple regression was to determine the predictive ability the independent variable total days absent has on the mean scale scores on the ACT Aspire reading assessment mandated by the state. The process consisted of using total days absent, gender, and ethnicity as predictor variables and the ACT Aspire reading test scale scores by all fourth-graders in the participating district as the dependent variable.

The results of the multiple regression analysis are presented in Table 15.

Table 15

Model Summary for Multiple Regression, Reading

					Change Statistics				
Model	R	R^2	Adj. R^2	Std. Error of the Estimate	R^2 Change	*F* Change	*df*1	*df*2	Sig. *F* Change
1	.146[a]	.021	.020	6.075	.021	12.048	1	554	.001
2	.147[b]	.022	.018	6.080	.000	.128	1	553	.721
3	.156[c]	.024	.019	6.077	.003	1.544	1	552	.214

a. Predictors: (Constant), Total Days Absent
b. Predictors: (Constant), Total Days Absent, Gender
c. Predictors: (Constant), Total Days Absent, Gender, Ethnicity
d. Dependent Variable: Math SS

Multiple linear regression was calculated to predict scores on the ACT Aspire reading assessment based on gender, ethnicity, and total days absent during the school year. The model summary for this multiple regression analysis is presented in Table 15. The reading scale scores were used as the dependent variable. A series of independent variables starting with total days absent, followed by gender, and then ethnicity was set up using a stepwise regression procedure. As the results show, as each independent variable is added it calculates the effect that each variable or combination of variables has on the dependent variable. Model 1 with only total days absent as the predictor or independent variable has $R^2 = .021$. This means that 2.1% of the variance in reading scores is explained by attendance. The next model adds gender to the total days absent and the $R^2 = .022$. The R^2 change = .001, which means that gender only added .1% in explaining the variance in reading scores. This is a similar finding to the regression results in R3 where it was determined that gender had practically no effect on the variance in math scores. The *F* change was not statistically significant at $p = .721$. This

result indicates that gender does not play a significant role in the differences in reading scores.

Finally, Model 3 adds ethnicity to the two previous predictor variables. The R^2 = .024. This means that ethnicity added only .2% in explaining the variance in reading scores. The *F* change was not significant at $p = .214$.

In summary, this multiple regression does not support the expected results of differences in reading scores by gender and ethnicity and it appears that although there was a statistically significant *F* change in math, it was not apparent for reading. Based on the analyses presented in answering RQ4, the researcher has failed to reject the $H_0$4. There was a statistically significant correlation between total days absent and reading scores, but multiple regression results indicate that total days absent had minimal effect on the variance in reading scores among these fourth-graders.

CHAPTER V: CONCLUSIONS, DISCUSSION, AND RECOMMENDATION

This chapter reviews the results presented in Chapter 4. A brief introduction recaps the purpose of this study, and a discussion and summary of findings and conclusions will be presented. Finally, this chapter offers recommendations for future research.

The purpose of this study was to investigate certain behavioral variables that may impede the learning and achievement of fourth-grade Black males in a school district in Central Arkansas. The study sought to first determine if there exists an achievement gap among fourth-grade students by ethnicity and gender in that school district, and if so, the researcher analyzed the effect of attendance rates to provide insight into the reasons for underachievement of Black males and the development of specific strategies to improve learning and achievement for these students in urban schools in Arkansas.

Many Black males continue to experience achievement difficulties in public schools. Theorists, researchers, policymakers, school administration, teachers, and parents have voiced their concerns about the achievement of middle school and high school males, but little has been reported about the problems of the elementary school male (Adams-King, 2016). The problem of high school dropouts begins in elementary school. It is known that the achievement gap for Black males begins at the third-grade level. Recording and measuring these dropout rates does nothing to solve the problem. At the elementary level, identification and remediation can stem this problem (Simms, 2012).

Research Questions and Answers

The study included all fourth-grade Elementary School students who took the ACT Aspire test during the 2019-2020 school year in one central Arkansas school district. The study investigated the effects of attendance rates on the academic achievement of fourth grade black male students. The research questions were:

1. Is there a difference between the ACT Aspire math test scores of fourth graders in one Central Arkansas school district by ethnicity and gender?
2. Is there a difference between the ACT Aspire reading test scores of fourth graders in one Central Arkansas school district by ethnicity and gender?
3. Is there a relationship between ACT Aspire math test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender?
4. Is there a relationship between ACT Aspire reading test scores of fourth graders and their attendance in one Central Arkansas school district by ethnicity and gender?

For RQ1, the analyses indicated that there were statistically significant differences in math scores among the participating fourth-grade students by ethnicity and gender. Because the criterion for homogeneity of variances was not met in order to run ANOVA, the researcher opted for Kruskal-Wallis. The results of the Kruskal-Wallis test revealed that there were differences in mean rank on the math test scale scores, $H(5) = 110.24$, $p < .000$. Further analysis by running individual Kruskal-Wallis tests on the subgroups by gender and ethnicity revealed that there were statistically significant differences between Black males ($M = 209.7$) and each of the other subgroups: Black females ($M = 247.81$,

$p < .014$); Hispanic females ($M = 275.02$, $p < .035$); Hispanic males ($M = 275.10$, $p < .014$)); White males ($M = 383.83$, $p < .000$); and White females ($M = 404.91$, $p < .000$). The results showed that there were statistically significant differences by ethnicity and gender and the $H_0 1$ was rejected.

For R2, the analyses revealed that there were statistically significant differences in reading scores by gender and ethnicity. The three criteria for running a One-Way ANOVA were all met and the results revealed that comparing reading scores by demographic subgroups revealed that there were statistically significant differences in the reading scores by gender and ethnicity ($F(5, 550), 3.073, p = .010$). A Sidak *post hoc* test revealed that there was only one group difference, Black males and White males. While there were fewer subgroup differences in reading scale scores compared to math scale scores, there were differences found. Therefore, $H_0 2$ was rejected.

For RQ3, the researcher used Spearman correlation and multiple regression to find an answer. Spearman correlation was used instead of Pearson correlation due to the fact that the data failed the criteria for linearity and homoscedasticity. The analysis revealed that all three variables, total days absent, math scale scores, and demographic subgroups, were significantly correlated. Further analysis using multiple regression revealed that the percentage of variance explained by the three variables was roughly 8.4%, with total days absent explaining almost 3% of the variance in math scores. Gender had minimal effect. The answer to RQ3 was that there was a relationship between total days absent and the math scores, contributing to the understanding that days absent adversely affect students, particularly when ethnicity is included in the regression model. Therefore, H*0*3 was rejected.

For RQ4, Spearman correlation was run on the three variables, total days absent, reading scale scores, and demographic subgroups. Again, all three variables were statistically significantly correlated. Multiple regression was run and with all three variables included in a regression model, the R^2 was .024. While total days absent explained about 2% of the variance in the reading scores, when gender and ethnicity were added to the model, it only added about .2% in explaining the variance in reading scores. What these results indicate is that although there were statistically significant differences found between groups based on gender and ethnicity, those differences were not explained by those variables. Therefore, the researcher failed to reject $H_0$4.

The Spearman correlation was run to see if there was a correlation between academic scale scores, ethnicity, gender, and total days absent. The results showed:

1) There was a negative correlation that was not significant between days absent and reading scale scores.
2) There was a positive correlation that was significant between reading scores and ethnicity groups.
3) There was a positive correlation that was not significant between gender and reading scores.
4) There was a negative correlation that was significant between days absent and math scale scores.
5) There was a positive correlation that was significant between math scores and ethnicity groups.
6) There was a positive correlation that was not significant between gender and math scores.

7) There was a negative correlation that was significant between ethnicity and total days absent.
8) There was a positive correlation that was not significant between ethnicity and gender.
9) There was a negative correlation that was not significant between total days absent and gender.

Summary of Results

The researcher summarized the findings that were discussed in Chapter IV. The findings included identifying if there were differences between ACT Aspire math and reading scores of fourth graders in one Central Arkansas school district by ethnicity and gender. The findings of the study also analyzed if there was a relationship between ACT Aspire reading and math test scores and the attendance of fourth graders in one Central Arkansas school district by ethnicity and gender. The researcher continued by providing a discussion of the findings and possible meanings for practitioners. Chapter V included limitations of the study and recommendations for future studies which included replicating this study and adding more districts in Arkansas, along with including more variables that may impede the academic achievement of the fourth-grade black male student, such as basic resources and cultural stigmas.

Conclusions, Interpretations, and Discussions

Many Black males have continued to experience achievement difficulties in public schools. Since the study findings showed significant differences between the Black male fourth graders and the white male and female fourth graders' test scores, *promising* literacy and mathematical practices should be explored and adopted as suggested by

Tatum, et al (2021). Likewise, some of the *hidden* rules and perceptions about education's meaning, discussed by Payne (2005), must be explored, and acknowledged, to aid real understanding of what occurs between third and fourth grade to cause the demise of Black males. In addition, capacity building must be further explored and implemented in impoverished Black communities. Providing discounted or refurbished computers is a small, but necessary, beginning. However, safe, well-equipped resource centers must be established in Black communities, as well. As previously purported by Jensen (2006), "Conditions matter."

This study's findings were not remarkable; however, they did indicate a disparity in achievement, which indicates more research is needed on how to get the African American/Black community to buy into outreach and capacity building. None of these findings were extremely unexpected because an educational disconnect has been documented in the Black community. Thus, Henfield's (2012) assertion that there seems to be a disconnect between Black students' academic achievement supports my findings. Such disconnect can serve as a focal point for dialogue about inclusion and establishing capacity building in often apathetic Black communities.

Implications/Suggestions for Future Research

Overall, in looking at the reading and math mean scores by ethnicity, the black students' mean scores were the lowest among the groups. There was a significant difference between the ethnicity groups when the researcher controlled for days absent in both reading and math. The pairwise comparisons between black and white students in reading were .003 and in math .000. Since the significance values were <.05, we concluded that there were statistically significant differences between the mean reading

and math scores when controlled for days absent by ethnicity. The differences were between the black and white groups. The results showed that white students performed better than black students on math and reading scores.

Limitations of Study

This study was limited to fourth-grade school students in one central Arkansas school district who were assessed with the ACT Aspire test in reading and math during the 2019-2020 school year. In addition, this study was further limited by the investigation of one behavioral variable (attendance).

Recommendations

This study offered the following recommendations for future research:

1) A replication of this study expanded to more school districts in Arkansas, to provide a broader picture of how well students do throughout the state.
2) A study to determine why Black males are losing their motivation for school in the primary grades, probing the factors that affect the academic motivation of the Black male in the elementary grades, because the motivation for school appears to diminish before fourth grade.
3) A study of the district's attendance policies may affect how parents and students view the importance of school presence and provide a better understanding of attendance and how it affects achievement outcomes for students.
4) A study of the elementary Black male perspective on the effects of the learning environment on achievement. Since the achievement problem of Black males starts at the elementary level, a better understanding of the needs and concerns of the Black male would be better voiced by the Black male.

5) A study regarding the effects of self-determination on learning and achievement for the Black male. Knowledge of the value and importance of self-determination for the Black male in public school in America, as it affects achievement, would aid in developing the internal motivation for lifelong learning.
6) What are the unique qualities of the one Central Arkansas school district that positively and negatively affect the learning and achievement of the Black male? This study would identify the strengths and weaknesses of teachers who teach Black males.

This study was limited to one central Arkansas school district and one behavioral variable (attendance). In a future study, a researcher could replicate this study by expanding the study to multiple school districts across Arkansas or other states and using more variables to get more data to process and understand the need of Black male students.

Summary/Conclusion

Many black male students continue to struggle in public school schools across America. The findings in this study were no different. The hope was to keep the focus on how to best help all students achieve at their highest level. By studying the group that is most impacted (black male students) and attempting to find solutions to their needs, all students would benefit. This study was an attempt to understand and address the needs of Black male students.

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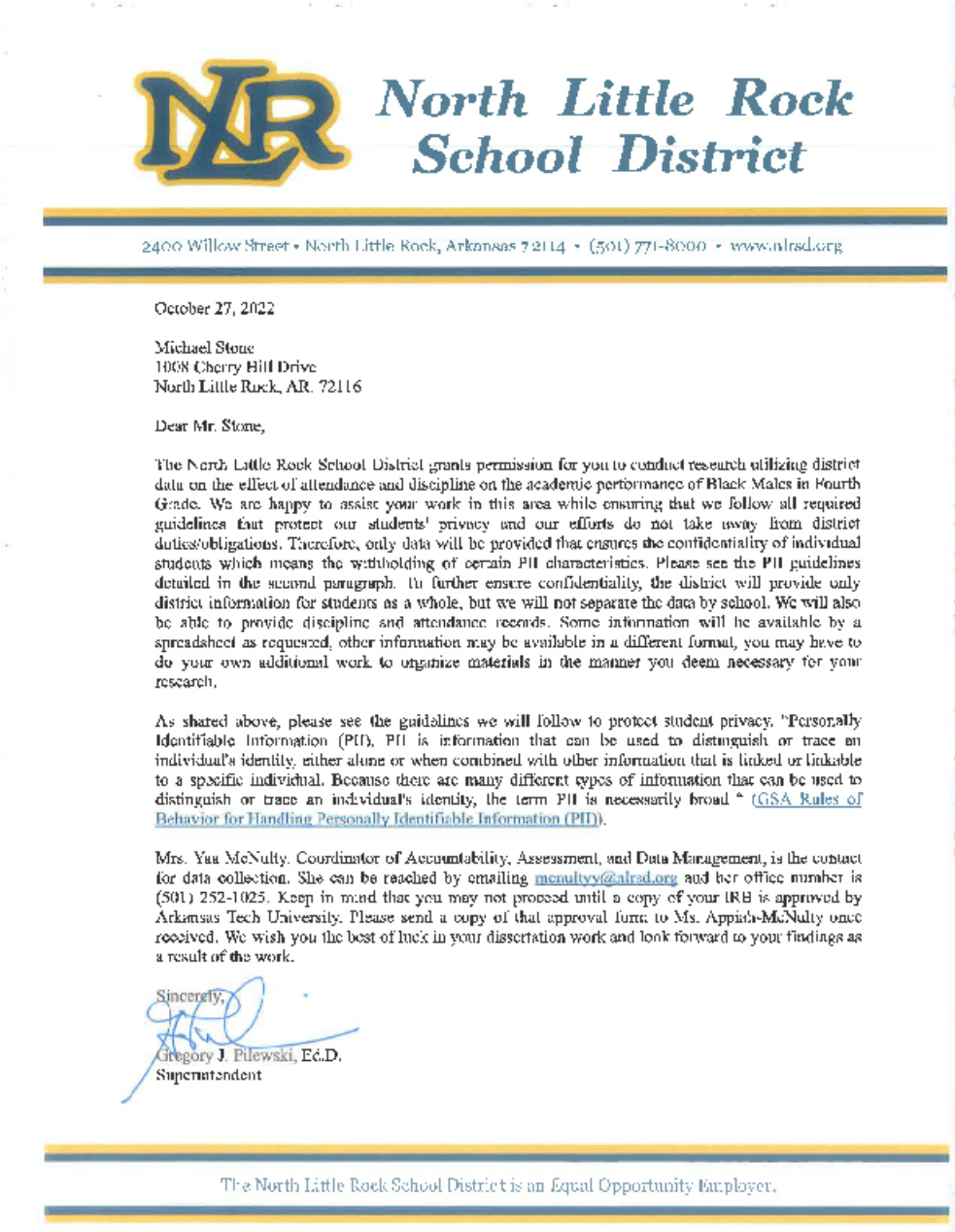
APPENDIX A
DISTRICT PERMISSION TO CONDUCT THE STUDY



North Little Rock School District

2400 Willow Street • North Little Rock, Arkansas 72114 • (501) 771-8000 • www.nlrsd.org

October 27, 2022

Michael Stone
1008 Cherry Hill Drive
North Little Rock, AR. 72116

Dear Mr. Stone,

The North Little Rock School District grants permission for you to conduct research utilizing district data on the effect of attendance and discipline on the academic performance of Black Males in Fourth Grade. We are happy to assist your work in this area while ensuring that we follow all required guidelines that protect our students' privacy and our efforts do not take away from district duties/obligations. Therefore, only data will be provided that ensures the confidentiality of individual students which means the withholding of certain PII characteristics. Please see the PII guidelines detailed in the second paragraph. To further ensure confidentiality, the district will provide only district information for students as a whole, but we will not separate the data by school. We will also be able to provide discipline and attendance records. Some information will be available by a spreadsheet as requested, other information may be available in a different format, you may have to do your own additional work to organize materials in the manner you deem necessary for your research.

As shared above, please see the guidelines we will follow to protect student privacy. "Personally Identifiable Information (PII). PII is information that can be used to distinguish or trace an individual's identity, either alone or when combined with other information that is linked or linkable to a specific individual. Because there are many different types of information that can be used to distinguish or trace an individual's identity, the term PII is necessarily broad." (GSA Rules of Behavior for Handling Personally Identifiable Information (PII)).

Mrs. Yaa McNulty, Coordinator of Accountability, Assessment, and Data Management, is the contact for data collection. She can be reached by emailing mcnultyy@nlrsd.org and her office number is (501) 252-1025. Keep in mind that you may not proceed until a copy of your IRB is approved by Arkansas Tech University. Please send a copy of that approval form to Ms. Appiah-McNulty once received. We wish you the best of luck in your dissertation work and look forward to your findings as a result of the work.

Sincerely,

Gregory J. Pilewski, Ed.D.
Superintendent

The North Little Rock School District is an Equal Opportunity Employer.

APPENDIX B
IRB APPROVAL LETTER

ARKANSAS TECH UNIVERSITY

OFFICE OF RESEARCH AND SPONSORED PROGRAMS

1509 North Boulder Avenue
Administration, Room 207
Russellville, AR 72801

479-880-4327
www.atu.edu

November 10, 2022

To Whom It May Concern:

The Arkansas Tech University Institutional Review Board has deemed the application for Michael Stone's proposed research, entitled "The Effect of Attendance and Discipline on the Academic Performance of Black Male Fourth-Grade Students in one Central Arkansas School District," to be exempt pursuant to federal regulation 45 CFR 46.104 (d)(2)(i)(ii). Please use number E-2022-18 when referencing this study.

Please note that in the event that any of the parameters of the study change, the researcher may be required to submit an amended application.

Please proceed with your research. We wish you success with this endeavor.

Sincerely,

Tennille Lasker-Scott, Ph.D.
Institutional Review Board Chair
Arkansas Tech University