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White and African American Elementary Aged Student Perspectives of School Climate and the Relationship to Academic Achievement

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Abstract

The achievement gap between White and African American students on the Missouri Assessment Program (MAP) is an educational phenomenon that has been around for generations and yet to be fully understood or eliminated. This study investigated the difference in school climate perceptions between African American and Caucasian (sic) elementary school students on a district climate survey and the possible connections to the achievement gap on the MAP tests. The 2015-2016 student perceived school climate survey data from a mid-sized Midwestern urban school district was disaggregated and analyzed to identify specific differences in perception of school climate among the study groups.

MAP test data was retrieved from school records for all third, fourth and fifth grade students enrolled in the district for 2015-16 academic year. The MAP data indicated that there is an achievement gap between White elementary students and AA elementary students within this school district that serves 6000 plus students, K-12.

Statistical measures were then used to identify possible correlations between student climate perceptions and MAP test results for White and African American students. The data sets were compiled and both descriptive statistics and correlation tests were used to analyze the results and identify the relationships between group climate survey answers and group MAP test results. Results indicated that there were not statically relevant relationships between student performance on the MAP test and negative and positive responses on a school climate survey. The slight variances observed between racial groups on certain questions lead to recommendations for school climate improvement and pointed to recommendations for further study.

D**edication**

This paper is dedicated to all the teachers out there who show up day in and day out to provide the best educational experience for every child. This profession is not easy and is complicated by a variety of factors. However, these hardworking individuals come to work every day with the desire to help each child, no matter ethnicity, or gender, to be the best they can be. Thank You

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Second, I would like to acknowledge and thank the UMSL professors and my committee members for their support and guidance in this process. Writing this dissertation was not an easy task for me. Without their guidance and support I would not have made it to the end. Thank you for sharing your knowledge and insight into the research process as you guided me to end. I want to especially thank my advisor and committee chair, Dr. Charles Granger for his support. I am a high needs individual, and he handled it without a complaint.

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Chapter One

Preface

This dissertation, *White and African American elementary aged student perspectives of school climate and the relationship to academic achievement*, was researched and written as a collaborative effort between Jeremy Spoor and Rachel Turney. Spoor's area of focus throughout the dissertation was based on the racial divide of the achievement gap between White and African American students. Spoor sought to understand if there was a perception difference between African American and White students, and if there was a connection between school climate and academic achievement. Turney's focus was on the achievement gap for the lowest performing subgroup of these two races, African American males. Turney's work throughout the dissertation was gender focused. Turney sought to understand if African American males specifically had a different school climate perception than their White and female peers. The data set used was from an inner ring Midwestern school district's school climate survey, which is administered every other year. This data set provided the data from which both researchers could investigate their unique questions. Writing and research was completed together to look at these two separate, but related groups of students in the context of academic achievement and perception of school climate. Results of the investigation allowed both researchers to provide recommendations for improvement within the studied district, based on their own questions.

Introduction

The achievement gap between White and African American students has been a part of the American education system since the first African Americans began to attend

the all-White school system (Condron, Tope, Steidl, & Freeman, 2013). The gap is especially historically significant for African American boys (Ladson-Billing, 2006). School, in its traditional sense, was not designed for the success of African Americans (Eisenhauer, 2007). The current system is not best serving the African American student, and this is evident by low-test scores, dropout rates, behavior referrals, and special education statistics of young African Americans (Whitmire, 2010). The urgency in addressing the needs of African American youth is evident through the costs to society of the repeated failure of the American education system to reach these students. The high drop-out rates, low expectations, and consequences related to the poor education that America is providing African American youth impacts society financially through lost tax revenue and funds appropriated to incarceration and social services (Sum, Khatiwada, McLaighlin, & Palma, 2009). Establishing an equitable education is paramount to the success of the country and *all* of its citizens (Slaughter-Defoe, 2005).

The public school system was designed to provide an education and cultural framework for middle class White males. White men were expected to excel and achieve and it was assumed that their African American counterparts would find a place in blue-collar positions and hard labor (Fordham & Ogbu, 1986). From the origin of the public school, African American students have been relegated to an inferior education to that of White students. These shortcomings and deficits in the education system have left many minorities in unequal education environments compared to the White middle class for whom the school system was originally designed (Fordhan & Ogbu, 1986; Hill, 2011; Ladson-Billings, 2006; Noguera, 2003). This difference between the groups is what is now referred to as the achievement gap.

Problem Statement

The achievement gap is the persistent difference in results on educational measures between a dominant group and a non-dominant group. The gap between White student achievement and achievement of African American students is the area of concern. According to the National Assessment for Educational Progress, in the last twenty years there has been at least a 25 percentage point difference on a one hundred-point scale in reading scores between fourth grade White students and fourth grade African American students (The Nations Report Card, 2015). This gap persists and is again identified at the eighth grade and twelfth grade levels. This disparity is not just found in reading scores, but is also present in math scores for the same age groups. For the last twenty years, there has been a 25 percentage point or greater discrepancy in math scores between the two groups (The Nation's Report Card, 2015).

Although this is national data, the state of Missouri does not represent a more equitable picture. According to the standardized test the Missouri Assessment Program (MAP) in Missouri in 2015, there was at least a 25 percentage point difference between White third through fifth graders and African American third through fifth graders in communication arts and mathematics (DESE, 2015). At the primary school of focus, a first outer ring, suburban kindergarten to fifth grade elementary school, White students in third through fifth grades outperformed African Americans by at least 25 percentage points in communication arts and almost 30 percentage points in mathematics (DESE, 2015). This trend has been consistent at this school for the past decade.

The reasons behind the achievement gap have been debated for generations. Researchers have posited a number of possibilities for its existence. Early researchers

suggested a genetic or biological difference between races caused intelligence differences (Chitty, 2007; Galton, 1869; Gilham, 2001; Morton, 1840; Spencer, 1864). This ideology was revived by more current scholars and still exists today (Hernstein & Murray, 1994; Jensen, 1969; Rushton, 2000). However, this theory has met much resistance (Delpit, 2012; Hill, 2011; Ladson-Billings, 2006), and has caused some scholars to look for other reasons that might explain the gap.

School environmental factors have also been blamed for the existence of the achievement gap. Scholars supporting this ideology theorize that school factors such as: leadership, climate, pedagogy, and teacher quality impact the achievement of African Americans (Brown, 2003; Delpit, 2012; Hill, 2011; Ladson-Billings, 2006; Noguera, 2003). When these aspects of school continually link to negative test scores for one group, institutional racism and oppression are logical possible causes (Massey, Scott, Dornbusch, 1975). The achievement gap implies that many schools are not optimized for African American success. The schools are instead riddled with low expectations and a culture that blames the victim, also known as deficit thinking (Valencia, 2012). These mindsets work against African Americans and reinforce the gap.

Educational debt is another possible cause presented in the research for existence of the achievement gap (Ladson-Billings, 2006). This ideology suggests that the African American experience in the United States was so bleak that the pursuit of equality started from a deficit yet to be overcome by many. Years of slavery, lack of wealth and resources, lack of political power, and subpar educational opportunities in early America left African Americans in the state of inequality seen today.

This history of inequality has led to a variety of non-school factors that have also been investigated. Research in this category explores the impacts of socioeconomic status and socio cultural differences. Findings for these factors conclude that low socioeconomic status can have a negative impact on achievement (Majoribanks, 1996). Since a large number of African Americans live in lower socioeconomic conditions, researchers posited that this is why the achievement gap exists. In addition to socioeconomic differences, researchers found that the existence of power imbalances between a dominant and minority culture in the United States have left African Americans with sociocultural differences that have academic impacts. Stereotype theory, disidentification theory, the idea of "acting white", critical race theory, and deficit thinking theory all stem from the power imbalances that exist in American society (Williamson III, 2011). Each of these theories alludes to potential reasons African Americans are not achieving to the extent of Whites. It is statistically clear that an achievement gap exists (Ladson-Billings, 2006). Determining the reasons why is the first step to providing an equitable education.

Purpose of Study

The achievement gap between African American and White students is a well-documented and researched phenomenon (Hucks, 2014; Jencks & Phillips, 1998; Noguera, 2009). The gap is a multifaceted problem that requires dynamic perspectives to investigate thoroughly. It is imperative to better understand the gap's causes in order to work toward equalizing achievement between White and African American students. There is a test score gap between White and African American students in the studied school district. The district is about 39 percent White and 37 percent African American

(DESE, 2015). This gives the school a fairly equalized demographic spread between White and African American students. African American students at the researched district live in the same community, are about the same socio-economic status, and are taught by the same teachers, with access to the same school resources as the White students. With all of these similarities, a more equalized test performance would be expected, however, this is not the case. When looking at the elementary schools in this district, understanding why it is that the African American students and specifically African American males continue to underachieve is paramount to creating solutions and eventually closing the gap.

Research suggests that tackling the achievement gap is not an easy task (Ladson-Billings, 2006; Noguera, 2003). The gap is a complex problem that is ingrained in society. There are many causal factors that need to be acknowledged and remedied on various fronts for true progress to be made. Acknowledging the problem but continuing the same practices is a disservice to an entire population of students and has negative ramifications for society. A review of current theories behind the achievement gap and utilization of district administered climate survey data to investigate one facet of the problem is a beginning and the intent of this study guided by the following three research questions.

Research Questions

RQ 1. How do perceptions of elementary school climate differ between African American and Caucasian elementary students in the same school district?[1]

[1] The District Climate survey used the term Caucasian as an ethnic identifier. When referring to data from the Climate survey the term Caucasian is used throughout the paper.

RQ 2. How do African American elementary school boys perceive school climate compared to other elementary aged groups in the same school district?

RQ 3. What relationships exist between perceptions of elementary school climate and Missouri Assessment Program test scores?

Theoretical Framework

First introduced by Perry (1908), school climate research has continued to develop over the last 100 years and has been linked to a variety of student outcomes (Anderson, 1982; Brookover, 1979; Cohen, 2006; Frieberg, 1999; Halpin & Croft, 1963; Tagiuri, 1968). Although many factors of school can affect students, research by Cohen (2006), Frieberg (1999), Anderson, (1982), and Brookover, (1977) suggests that studying school climate can give a broader look at a variety of possible connections of these factors to student outcomes. While school climate has been linked to academic achievement there has been less research, historically, linking school climate perception to the achievement gap. Recent research by Voight, Hanson, O'Malley, & Adekayne (2015), establishes a relationship between the academic achievement gap and racial differences in perceived school climate, opening the field for further investigation. The framework for investigation was built with a broad understanding of the achievement gap between African American and White students and investigating a specific facet, perceptions of school climate.

The theoretical framework begins with a wide lens based on the Ecological Systems Theory of Urie Bronfenbrenner (Bronfenbrenner, 1994). An ecological/environmental approach provided a framework to investigate the historical context of the achievement gap as it relates to environmental factors that influence child

development and could impact achievement. The framework was narrowed to study one aspect of Bronfenbrenner's theory at the microsystem level, the school. The investigation of the school is framed by research on school climate through the lens of Abraham Maslow, Edward Deci and Richard Ryan, Gregory Herbert Mead, and Joyce Epstein. These theorists worked in the fields of human development, needs based theories, and/or connectedness. What ties their work together is the theme of relationships.

Environment Based Theory.

Bronfenbrenner (1994) posits that to truly understand a student one must understand the environment which the child experiences. Bronfenbrenner suggested that children are individuals nestled in five ecological environments that are interacting and influencing one another. How the child reacts to these environments combined with his/her own biological characteristics determine how he/she develops and approaches the world. According to Bronfenbrenner (2009) the five ecological environments that influence human development are:

1. Microsystem - the direct environment
2. Mesosystem - links between the microsystem and the self
3. Exosytem - link between context and non-active roles
4. Macrosystem - the culture
5. Chronosystems - the shifts and order of ones life

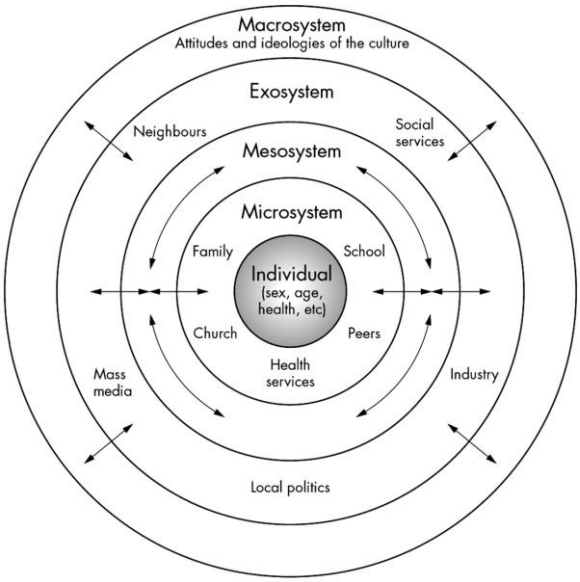

Figure 1.1: Bronfenbrenner's Ecological Model. This model describes the environmental influences on a child from McLaren, L., & Hawe, P. (2005). Ecological perspectives in health research. *Journal of epidemiology and community health*, *59*(1), 6-14.

The microsystem is the most personal and immediate environment. The microsystem usually consists of the family, but can also be broadened to the school or daycare environment. Typically this environment has the most impact and interaction with a child and will be the focus of this investigation. The mesosystem is the linkage between two systems that contains the developing person. How the school and home environments interact with one another in regard to the student is an example of mesosystem. The third environment is the exosystem. This environment is the linkage between two systems where one does not contain the developing person. The relationship between a child and the parent's work place could be part of the exosystem. The fourth environment is the macrosystem. The macrosystem is the overarching interactions between the three previous environments. It is essentially the "societal blueprint for a particular culture or subculture" (Bronfenbrenner, 1994, p. 40). The final environment is the chronosystem. This environment brings in the dimension of time; taking into account how a developing person and their environment

change over time. This environment would be represented by changes in socio-economic status, employment, or school setting as one ages.

Each of these environments plays important roles as a child develops. For the historical understanding of the achievement gap the microsystem, mesosystem, macrosystem, and individual biological make-up are particularly important. Research on the achievement gap has shown that a child's school and family (microsystem), family school interaction (mesosystem), and cultural history and identity (macrosystem) can all have positive or negative impacts (Stewart, 2007).

The relationships a child has at the microsytem environment extend to the mesosystem and shapes a child's development (Bronfenbrenner, 1986). In the environment of the mesosystem, Bronfenbrenner says that if a child had a negative relationship with parents at home this could carry over to the relationship the child has or expects to have with a teacher at school (Bronfenbrenner, 2009; Lynch & Cicchetti, 1998). The extension of the effect of school on the child and the impact school relationships could have on the rest of the systems is why school climate is so important. The school environment is an integral shaper in the early life of a child. The climate of the school and the relationship with the teacher can work at the microsystem and mesosystem level to shape the self in the center of the environmental rings (see figure 1.1).

Students at the same school generally experience a relatively similar outer two rings of Bronfenbrenner's theory, the macrosystem or the cultural element and the events of life in the chronosystem, because they live in the same area in the same time period. These two rings encompass areas like the laws that affect the child, or historical events,

which could shift the culture of a community. The education system alone cannot change or combat negative occurrences or connections in the macrosystem, chronosystem, or exosystem. What teachers and school personnel can do is work towards changing the school environment or perceptions of the school environment at the classroom and school wide level affecting the microsystem and the mesosystem (Cross, & Hong, 2012).

Needs Based Theory.

The relationship between a child and a school is grounded in the roles associated with school, needs within those roles, and the interpretation of relationships. These ideas are rooted in Abraham Maslow's hierarchy of needs, which are foundational to aspects of school climate including safety, education, and relationships. Just as Maslow presented a hierarchy of human needs, students have a hierarchy of needs that must be met in school in order to achieve. Most of these needs are integral parts of what comprise school climate (Wooley & Grogan-Kaylor, 2006). These parallels in human needs and school climate show the importance of the development of a positive school climate on the development of a child. Numerous inventories have been created that focused on meeting student needs at schools, especially for alternative schools and for children in the adolescent years. Many popular school climate surveys are based on needs theory.

The district climate survey used in this research focuses on levels of Maslow's hierarchy (Bosworth, Ford, & Hernandaz, 2011; Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013). The framework for these inventories, surveys, and structures are all based around Abraham Maslow's Hierarchy of Needs published in 1943 in his paper, *A Theory of Human Motivation* (Maslow, 1943). Maslow's hierarchy of needs is paramount to discussing child development and the importance of a positive school

relationship. Maslow's triangle hierarchy places emphasis on many of the same areas as school climate measures (Maslow, 1943; Samdal, Wold, & Bronis, 1999). Maslow proposes five levels of human needs, at the lowest level of his needs pyramid are physiological needs. These are basic functional needs, after which comes safety. According to Maslow safety includes physical safety and health, and also security of resources (Maslow, Frager, Cox, 1970). The top three levels are love and belonging, esteem, and, at the tip, self-actualization. Love and belonging represents the needs for relationships with family and friends and later in life an intimate partner. Esteem relates to respect, achievement, and self-esteem. Self-actualization is the need for morality and creativity. Self-actualization also includes mental ability, for example ability to problem solve or think through and accept facts.

The National School Climate Center proposes four categories of school climate (Cohen, McCabe, Michelli, & Pickeral, 2009).

1. safety - the physical attributes of the school that make it safe as well as a sense of emotional and social safety, and the rules in place to facilitate these aspects of safety
2. teaching and learning - the supports provided for learning and teaching geared towards cognitive, social, and civil achievement
3. interpersonal relationships - respect for differences and diversity and support form teachers, adults, and peers in the school
4. institutional environment - school connectedness and also the adequacies of the facilities in the physical environment

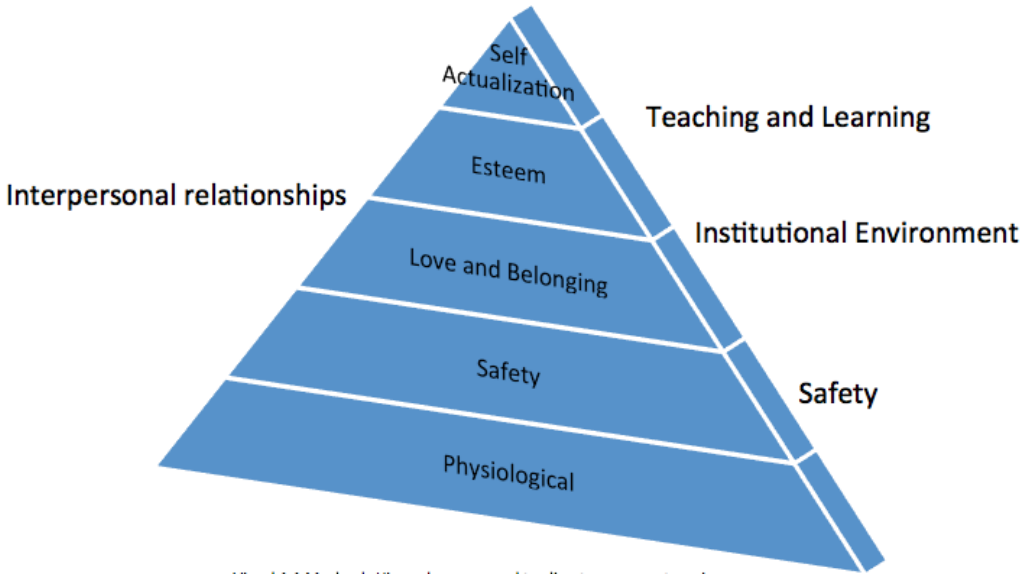

Figure 1.2: Maslow's Hierarchy of Needs as Compared to the Climate Council's Categories of School Climate. This model shows the correlations between Maslow's categories of need and the four categories of school climate adapted from "Maslow's Heirarchy of Needs" by Maslow, A. (1987). Maslow's hierarchy of needs. *Salenger Incorporated*.

Maslow's second category of safety directly aligns with the National School Climate Center's category of the same name. Teaching and learning and interpersonal relationships from The Climate Center go along with Maslow's categories of love and belonging and esteem. The institutional environment, the fourth category of school climate aligns with all of Maslow's categories from basic physiological needs, all the way to the final category of self-actualization.

Self-Determination Based Theory.

Deci and Ryan (1991) in their self-determination theory identified three needs of a person, that if satisfied, result in a one reaching their full potential and appropriate growth (Chirkov, Ryan, Kin, & Kaplan, 2003). These needs are innate and include competence, relatedness and autonomy. To actualize full development of the three needs a person, and more specifically a student, needs help from their social environment including parents,

peers, and teachers. If nurtured a student develops positive motivation through reaching competence. Competence is related to seeking answers and finding mastery in knowledge (White, 1959). Reaching relatedness involves connection to others and experiencing being cared for and also caring for others (Beaumeister & Leary, 1995). Autonomy is fulfilled in finding a harmony with the self within the context of the environment (Deci & Vansteenkiste, 2004).

Relationship Based Theory.

The mind and the self-theory with relationship to society presented by Gregory Herbert Mead (1934) tie into child development and the development of a perception of the world. Mead proposed that the identity of self and the mind are developed through interactions and communications. School and home, where children receive the most communication and interactions with others, generally affect a child's identity (Crichlow, 2013). Mead's theory bases a person's identity on how others perceive them. This is important in the context of how a child develops within the climate of a school. Student perception of self, formed through interactions in combination with teachers' actions and interactions with and around a student, shape the climate of the society of a child. In a Venn diagram many of Mead's ideas would overlap with those of John Dewey, another important figure in education, but much of what is solely Mead's relates to the development of a child based on the perceptions of others.

Mead's (1934) theory is based on others influencing the self during certain times in life. Mead's theory involves children learning about the self through interactions. According to Mead children begin to understand societal expectations through relationship development. In early elementary school children become aware of and

influenced by opinions about them based on how they act and what they say, interactions and reactions of others with and to them, and their actions, especially with the significant people in their lives, the people with whom they have strong relationships.

In Mead's theory of the I and the Me, the Me represents the social self and the I the response to this. Me is how others perceive the individual. The I is the individual responding to these perceptions and expectations. According to Mead (1934) the self is the balance between the I and the Me. Mead's theories show the importance of positive climate at school, which is based largely on relationships among staff, teachers, peers, and the individual student (Libbey, 2004).

Role Based Theory.

Joyce Epstein works with the theory of family and school connectedness. Epstein (1987) theorizes that families and schools interact in three different ways: separate, shared, and sequential responsibilities. Without strong home based standards and unbiased teaching standards the separation of school and home leads to conflict and competition (Parsons & Halsey, 1959). Sequential responsibilities are most effective with a transition from parent to teacher as the primary educator. Without a solid foundation of the meaning of education and learning instilled at home, the transition to school cannot be successful (Bloom, 1964). The second, a shared responsibility, is supported by the work of Bronfenbrenner (1979) who, as noted earlier, emphasizes the complex connections between groups and individuals, as in school climate perceptions. Epstein's theories, grounded in Mead's (1934) work of symbolic interactionism, which results in individuals fulfilling group expectations, represent a major part of a positive school climate. While Epstein's framework is geared more towards parents and families

relating and interacting with school, her role-based theory also speaks to the importance of connectedness to a positive school climate. A child's experience at school is linked to the level of connectedness the child feels (Loukas, Suzuki, & Horton, 2006). Epstein theorizes a model of education where family and school environment connect. She theorizes that time, home experience, and in school experience were the driving factors in the overall perception of school connectedness of a child. Epstein's work shows the importance of the development of a strong positive school climate on student life in and out of school. The more connected a child and a family feels to the school, the more positive were their school experience and outcomes (Epstein, 1987).

Theoretical Framework Summary.

Maslow (1957), Mead (1934), Bronfenbrenner (1961), Deci and Ryan (1991) and Epstein (2001) all focus on the role of relationships in the development of humans. School climate is ultimately the product of how teachers, students, and staff relate to each other (Lippey, 2004). Maslow's work shows the importance of experiencing a positive school climate through the four climate categories as they link to Maslow's five categories of human needs on development. Deci and Ryan, like Maslow, base the fulfillment of self-development on needs met through the social environment. Mead's work expresses the importance of a student finding an identity within school climate. Bronfenbrenner puts significance on the connection between what the child experiences at school within the school climate and their development. Epstein shows the importance of connectedness to a school with a positive school climate. Without positive relationships anchoring school climate students are less likely to achieve in an academic environment (MacNeil, Prater, & Busch, 2009). African American students are

especially vulnerable to negative relationships with peers, staff, and teachers at school (Townsend, 2000).

Significance of Study

The achievement gap continues to be a major focus of scholars, politicians and school leaders. While the achievement gap has been researched from a multitude of angles, the complexities have hindered a complete picture of implications and ramifications of the gap. It is important for scholars to continue to add to the available literature on the racially divided achievement gap. This is accomplished by examining the issues in unique contexts with different focuses. The specific school setting of this study is unique and the framework is one not commonly used. This research benefits not only the stakeholders of the specific school involved, but also the broader context of the racial achievement divide.

Built on the work of Voight, Hanson, O'Malley, & Adekanye (2015) and set in a different context, this investigation will add more to the current bank of information linking school climate perceptions to academic achievement. By utilizing a district that is almost evenly split racially, and where 80 percent of the students qualify for free and reduced lunch, the impact of these variables will be minimized. This research is specifically aimed at the elementary school level. While there is much research on middle school and high school student climate perceptions, research at the elementary level specific to school climate and race is not readily available. If the investigation can identify climate differences at this early age, factors causing these differences can be addressed sooner in a student's life. This could lead to minimization of negative results of lack of connection to school in later schooling such as drop-outs and failing grades.

Finally, this study is significant because of the unique design looking specifically for racial differences in school climate perceptions as they relate to academic achievement. Many climate studies do not separate race but look only at climate rating versus some varied outcome. By investigating how these groups differ in their perceptions of school climate, recommendations for school wide changes can be made that could improve academic achievement for African American students, and especially the boys. Since the subject school is comprised of almost an equal number of White and African American students that are mostly free and reduced lunch and live in the same community, variable effects from issues like school resources and socioeconomic status are minimized.

Definitions

Achievement gap: the disparity of measures between groups of students on educational measurements

Dream Keepers: term for teachers that are successful with African American students, from the book *The Dream Keepers* by Gloria Ladson-Billings

Educational debt: the resources that could have and should have been invested in providing equitable schooling for a group of students (Ladson-Billing, 2006)

Environmental factors: aspects that influence or affect a living thing based on the surroundings and area in which one lives

Equality: having the same rights and opportunities

School Climate: "School climate is based on pattern of people's experiences of school life and reflects norms, experiences of school, values, interpersonal relationships, teaching and learning practices, and organizational structure" (NSCC 2007, p.1)

Chapter Summary

In Chapter one the problems associated with the achievement gap and evidence of the gap in one first outer ring suburban Midwestern school district were presented. The need for this study is evidenced by a persistent gap in White and African American achievement on the standardized test the Missouri Assessment Program. The framework of the study was introduced through the lens of child development and relations as a potential link to the achievement gap. Then terms various terms in the paper were identified. In Chapter two, a historical and broad review of past and current literature about the probable causes and issues related to achievement gap is presented. School climate is dissected and explained as it pertains to the achievement gap.

Chapter Two: Review of Literature

An achievement gap persists between White and African American students in the United States (Ladson-Billings, 2006). Although this gap has fluctuated over the last 50 years, the deficit is still very much a part of society. Educators must find a way to decrease and eventually eliminate this difference with so much at stake for African Americans, other people of color, and society as a whole. To do this, educators must understand the history and complexities of the achievement gap. This review will discuss the following ideologies that research has suggested is responsible for the achievement gap:

1. Genetics, Heredity and Intelligence
2. Test Bias
3. School based factors
4. Non-school based factors

While this is not an all-inclusive list of possible causes, they are some of the most prevalent themes in the achievement gap discussion. After this broad view is explored this chapter will narrow the focus to school climate. This section will explore the various dimensions of school climate and its impact on African American students.

Genetics, Heredity and Intelligence

One of the oldest and most heavily debated achievement gap arguments is based on the idea that intelligence, and potential for academic success, is genetic in nature. This argument states that through the course of evolution and natural selection people groups have evolved differently and their abilities and intelligence differ. This

ideology has been around for centuries, and continues to be debated by scholars (Pearce, 1992).

Even before intelligence tests were created, scientists were interested in understanding why different people groups appeared to have various differences. Although the interest may be centuries old, research became very prominent in late 1800's and early 1900's (Jencks & Phillips, 1998; Morton, 1840; Rushton, 1995). At this time researchers began studying physical differences such as head size and other body part distinctions among racial and ethnic groups (Smedley & Smedley, 2005). Samuel Morton (1840) in his book *Crania Americana*, measured and organized hundreds of skulls from around the world. Morton came to several conclusions through his scientific investigation, the most prominent being that various groups had different evolutionary paths that resulted in different cranial sizes and intellectual capacities. Morton observed that Whites had the largest craniums and Africans the smallest (Morton, 1840).

These investigations by Morton took place around the same time as the release of Charles Darwin's (1859) "Origin of Species," that stated that biological beings evolved over time and went through a process of natural selection that allowed dominant traits to be passed down from generation to generation. The melding of these ideologies pushed researcher Francis Galton to investigate his own curiosities about heredity (Chitty, 2007; Gilham, 2001). From his many years of research, travel and investigations Galton theorized that nature was responsible for a vast amount of human characteristics (Galton, 1869). In addition to Darwin and Galton, Herbert Spencer (1864) was influential in propagating a theory of evolution. Spencer coined the phrase "survival of the fittest" and theorized that biology and race determined knowledge through heredity. These early

theories on genetic differences amongst races spawned debates and controversy through the early and mid-1900's.

As racial undertones in the United States continued and the Civil Rights movement softened attitudes, psychologist and Professor Arthur Jensen (1969) published the article "*How Much can we Boost IQ and Scholastic Achievemen*t?" This article, along with Jensen's future works reignited the ideas about eugenics and heredity in the United States. Through his various research endeavors Jensen concluded that:

1. IQ is real, biological, highly genetic, and not just some statistic or the result of educational, social, economic, or cultural factors;
2. race is a biological reality, not a social construct; and, most controversially of all
3. the cause of the 15-point average IQ difference between African Americans and Whites in the United States is partly genetic (Jensen, 1973; Miele, 2002, pg. X).

Jensen suggested that although environment may account for some minor differences in intelligence, the differences are mostly genetic in nature. Jensen theorized that high and low intellectual abilities are passed down through genetics. Jensen argued that African Americans as a population have a lower intelligence, and educators should not try to improve the difference environmentally, but instead, change how we teach (Jensen, 1969). This viewpoint has held strong among some researchers and psychologists (Hernstein, 1994; Rushton, 1998, 2000; Shockley, 1992). Jensen's work has been revisited by many, and is the basis for ongoing arguments for a genetic view of intelligence.

Following in Jensen's footsteps, researchers such as Phillipe Rushton, Richard Hernstein, Charles Murray, and William Shockley have continued to propagate the belief

that intelligence (IQ) and race have genetic correlation. Rushton (1995) in his book *Race, Evolution and Behavior,* posited that there are too many differences amongst groups to be affected by environment alone. Rushton argues that difference between Asians, Whites, and African Americans in the areas of brain size, intelligence, reproduction, personality, maturation and social organization are better explained by genetic influences (Rushton, 2000). Rushton suggests that his gene based "Life-History Theory" better explains these differences between the three major groups: African Americans, Asians, and Whites (Rushton, 2000). Although Rushton's work is highly disputed, his theories still persist in many parts of the world.

Other recent scholars like Hernstein and Murray (1994) continue the idea that genetics is related to intelligence and race. In their book *The Bell Curve*, they favored the classical psychological views of Jensen, Spearman, and Galton (Hernstein & Murray, 1994). Hernstein and Murray framed their book around six conclusions: first, there is a general factor of intelligence that differs among humans; second, all academic aptitude and achievement measures, measure this factor but IQ tests do it the best; third, IQ scores, align with whatever people refer to as smart; fourth, IQ scores are stable over time; fifth, IQ tests are not biased towards any subgroup; sixth, cognitive ability is highly heritable (Hernstein & Murray, 1994; p. 22-23). Utilizing this framework, Hernstein and Murray implied that the standard deviation in mean differences in IQ between African Americans and Whites is largely genetic in nature. They pointed to a variety of sub tests in intelligence to point out a genetic correlation to the race argument as well. In summary, Hernstein and Murray posited that genetics plays a role in intelligence and educators cannot decrease the educational gap through environmental

interventions. Finally, they concluded that the environmental difference between African Americans and Whites could not be different enough to account for the 15-point difference in IQ scores.

A Non Hereditarian Perspective

Other researchers have argued against or provided alternative theories to the hereditarian line of thinking. Some researchers have written counter-arguments based on environmental differences, while others have focused on discrediting specific research utilized by hereditarian researchers. For example, Stephen Jay Gould is his re-release of *The Mismeasure of Man*, argued against earlier research on intelligence being a primarily genetic trait. Gould first debated the accuracy of Morton's cranial measurements. Gould attempted to recreate some of the original data and concluded that Morton's work portrayed several biases (Gould, 1998). He then attacked Jensen's ideologies that genetics had to be related to race and impacted intelligence. Gould concluded that if people could argue that environment could impact differences among a population, there is no reason it could not impact difference *between* populations (Gould, 1998). Finally, Gould disagreed with Spearman's theory of the "g factor." Spearman theorized that human intelligence can be measured by one general intelligence factor that he called "g" (Spearman, 1904). Gould contested that intelligence is more complicated and could not be calculated just by the "g" factor alone (Gould, 1998). While Gould's work does much to refute hereditarian belief, it is not without its own critics. Jensen (1982), Rushton (1997), Murray (1998) and other researchers (Flynn, 1999; Deary, 2001) have all challenged Gould's work. Even with these critiques, *The Mismeasure of Men*, played an

important role in debating the accuracy of the Hereditarians (Flynn, 2000; Jencks & Phillips, 1998).

Christopher Jencks and Meredith Phillips (1998) provided evidence against the traditional hereditarian view of genetic impacts on intelligence in their book *The Black-White Test Score Gap.* This book included several research studies by Richard Nisbett that concluded environment impacts have a large influence on individuals. He also demonstrated that when looking at blood groups, individuals with more European DNA do not perform statistically better than groups with less European DNA. Finally, he noted a decreasing intellectual gap and rising of overall intellectual scores (Jencks & Phillips, 1998). Phillips and Jencks eluded to traditional environmental factors like family, socioeconomic status and neighborhoods, while adding what they call the "x' factors. The "x" factor represents the idea that genetic traits such as skin color and physical appearances impact the African American population because of prejudices and racial stereotypes. In other words, there might not be a gene that determines cognitive ability, but one determining appearance can have social ramifications impacting intelligence (Jencks & Phillips, 1998).

J.R. Flynn also contested the hereditarian arguments. Flynn developed what has become known as the Flynn Effect. The Flynn Effect is a widely accepted phenomenon that demonstrates that Intelligence Test scores around the world have risen over the last 60 years (Flynn, 2000). Since discovering this, Flynn has been a significant part of the intelligence debate. As he looked to explain the cause of this effect, Flynn provided many arguments against the hereditarian view. Flynn stated that if intelligence is primarily genetic, then there should not be an increase of intelligence scores over time.

The fact the scores have changed should at least make way for the possibility of other factors besides genetics. Flynn also refuted the claims of Jensen, Hernstein and Murray that the environmental differences are not influential enough to account for the 15-point IQ gap that exists between African Americans and Whites (Flynn, 2000).

While the work of many other researchers could be used to continue this debate about genetics, race, and intelligence, the research is still inconclusive. In fact, this debate continues to be controversial, and so far from a definite answer, that the American Association of Physical Anthropologists (AAPA) and the American Psychological Association (APA) have both released formal statements regarding race and race differences. The AAPA has stated that there is no biological merit to different races. Although people groups have evolved differently due to their environments they are all of one common ancestor. Moreover, it states that intellectual ability is key to survival of the species, and although it may differ among individuals, all people across the world have equal biological potential (Thordike, Hagen, & Sattler, 1986).

The APA was so torn by the debate on intelligence, that in 1995 the organization created a taskforce to review the literature and develop a consensus for the association (Neissar, et al., 1996). This task force worked to answer a variety of questions regarding intelligence, race, and group differences and drew several conclusions from their investigation. First, the task force proposed that there seems to be genetic differences among individuals within a group relating to intelligence, but the genetic pathways are unknown. Second, there are environmental factors that affect intelligence, but what they are and their significance are unknown. Third, the role of nutrition and intelligence is still unclear. Fourth, measurements of intellectual processing speeds correlate with

psychometric intelligence. Fifth, mean scores of intelligence are increasing. Sixth, although African American and White average IQ scores are about a standard deviation apart there were no obvious biases within construction or administration of the test, nor does this difference appear to be caused by socioeconomic status or genetics. At this point any one reason is indeterminate. Finally, not all intelligences and abilities can be successfully measured by standardized tests (Neissar, et al., 1996). After their investigation the APA cannot explain the difference between African American and White test scores. Based on their research they concluded that intelligence tests are accurate, and reiterated the fact that individuals in a population vary widely depending upon some genetic and environmental factors, but they still do not know why a gap persists between population groups.

Although this topic is still heavily debated in the literature, it might only be resolved if the gap in intelligence scores/academic achievement is closed. While genetics could have a small degree of impact between individuals, it is not conclusive about population differences. In addition, research suggests that there are other causes that merit investigating. This paper assumes that African Americans and Whites, are cognitively equal at birth [when variables are controlled for] as noted by Lisa Delpit (2012) and Fryer and Levitt (2004). Delpit and Fryer and Levitt found that until age three or four, African Americans and Whites are intellectually equal. This research dictates the importance of the investigation into other causes of the achievement gap.

Test Bias

The concept of test bias is generally accepted as the phenomenon that certain sub groups (race, gender, age) do not perform as well on a test as their dominant counterparts

because the test may be geared towards a certain culture or worldly experience. In other words, tests give different results for one group of people than they do for another. However, test bias cannot be simplified and is actually a quite complicated psychological concept (Berlak, 2001; Flaugher, 1978; Hernstein & Murray, 1994; Jencks and Phillips, 1998; Jensen, 1980). Psychologists agree that test bias is a multifaceted concept and to say that it exists is not an easy conjecture. Test bias research is heavy with proponents and opponents of test biases in both intelligence tests and standardized achievement tests.

The Greenwood Educational Dictionary (Cillins & O'Brien, 2011) describes test bias as:

"Properties of an assessment item that yield significant differences between groups (i.e., sex, race/ethnicity, students with disabilities, limited English proficient students,) that are not due to actual differences in the construct being assessed. Test bias impairs the validity (content, construct, predictive, consequential) and the fairness of the measurement. The differences are systematic and not due to chance. Test bias may result in inappropriate or unwarranted interpretation of a given individual's test score" (p. 463).

This description of test bias best states all the points that are debated in the literature. Although it may be referred to by different names, most scholars describe sources of test bias by: how it was created, what it measures, what it says it measures, whether it favors one group over another, what it predicts, and how results are interpreted. The scholars on either side of this debate argue about how significant each of these elements might be, and to what extent they exist in intelligence and standardized

testing. Most of the hereditarians mentioned previously argued that intelligence tests are accurate and free from test bias (Hernstein & Murray, 1994; Jensen, 1980; Rushton, Ormerod, & Kerby, 2004). They claim that intelligence tests measure what they say they measure, do not favor one group over another, and their interpretations and predictions can hold true across populations. In his book *Bias in Mental Testing*, Arthur Jensen (1980) wrote:

"Currently most widely used standardized tests of mental ability -IQ , scholastic aptitude, and achievement tests—are, by and large, not biased against any of the native-born English-speaking minority groups on which the amount of research evidence is sufficient for an objective determination of bias, if the tests were in fact biased" (p. ix).

Jensen (1980) aims to dispel most of the arguments that test bias is entwined throughout intelligence test and standardized tests. He points to earlier research that favors the validity, constructability and generalizability of these tests. Jensen does not deny that tests can have bias in them, just that current intelligence tests and standardized test have worked out their biases and are statistically sound. Jensen continued this argument with studies confirming the predictability of these tests. Jensen points to research that shows test scores as good predictors of grades, job attainment, and college admission. *Bias in Mental Testing* became influential to the work of other hereditarians including Rushton and Murray.

Rushton, continued research in the late 90's and early 2000's to confirm Jensen's work. In a variety of papers produced by Rushton and various co-authors, Rushton confirmed many of Jensen's earlier findings. Rushton argued that his studies confirm the existence of the "g" factor, and that intelligence tests accurately measure this factor

across populations. In a 2004 study of South African Engineering students, Rushton et al., (2004) found the IQ test known as the Raven Test to be valid and have no obvious biases. Rushton, like Jensen, again pointed to the existence of the "g" factor and the test's ability to measure it. The authors claimed that in South Africa, like in the United States, these intelligence test were free of internal or external biases and that the difference between the scores are based on a difference in "g" factor rather than any environmental impact.

Hernstein and Murray's (1994) book *The Bell Curve* is another work that suggested that intelligence is primarily genetic, is measured accurately in testing and is a great predictor of future success. Although the findings of this book are highly debated, its initial release was well accepted and Henstein and Murray's work has been cited by a variety of researchers. Hernstein and Murray admitted that there may be some environmental impacts on intelligence, but genetics are more dominant. In addition, they stated that intelligence tests accurately measure intelligence across subgroups and that these results are highly predictable. While some scholars accept these initial conclusions, it is Hernstein and Murray's policy recommendations that really ignited criticism (reduction in welfare, reduction in head start programs, curtailing affirmative action programs, reallocating money from slow learners to gifted learners).

As earlier mentioned, it is the release of *The Bell Curve* that caused The American Psychological Association to release "*Intelligence: Knowns and Unknowns."* Although this task force denied the completely genetic view of intelligence, it affirmed the validity and predictability of psychometric tests. First, Neisser et al. (1995) noted the tests have high predictive validity of individual student achievement. In other words, student

outcome on intelligence tests were highly correlated to grades, graduation, and college entrance. Second the authors concluded that the mean intelligence test score difference between African Americans and Whites is not because of test bias in construction or administration (Neisser et al., 1995). This conclusion asserts that psychometric tests are equal among populations and across them and therefore cannot be the reason an achievement gap exists.

Contrary to this research, many social scientists argue that the obvious mean score difference of different groups indicate that these tests are biased in some way. Christopher Jencks (1998) in his book "The Black-White Test Score Gap" provided a framework for understanding the concept of racial bias in testing. Jencks described three types of bias that might occur in the development of test and two that might develop in the interpretation and predictability of tests (p. 55). The first three he labeled as: labeling bias, content bias and methodological bias.

According to Jencks (1998), labeling bias is the idea that test creators say that they are measuring one thing, when in reality they are measuring something else. This bias is evident when a test calls itself an intelligence test or an aptitude test. Test with these labels imply to the average person that they are testing some sort of innate ability. Doing well on this test would indicate one has a natural ability to perform well, and vice versa. However, as Jencks pointed out, many psychologists debate the innateness of intelligence and feel these tests more likely measure a developed intelligence and therefore are mislabeled. Flaugher (1978) also asserted that the differences between achievement and aptitude are highly significant and should be clearly understood, in order to make assertions of the results of either. Jencks concluded

that the only way to eliminate this sort of bias is to change the names of tests so that they do not imply any sort of innate ability (Jencks & Phillips, 1998, p.56).

Although Jencks writes strongly about labeling bias, he argues that content biases or methodological biases are not as prevalent or harmful. Over the years, many issues with racial discrepancies among content have been removed from most achievement tests and standardized tests. However, these biases may still show up in language choices, or in some intelligence tests that do not accept cultural difference in problem solving schema. Jencks pointed to this bias in a block design component of an intelligence test. Although this test should have no cultural significance, African Americans seemed to perform worse than other groups. This may be indicative of cultural differences in problem solving, not of content bias in the test.

While Jencks minimized the extent of test methodology bias, Claude Steele and Joshua Aronson (1995) suggested that as African American individuals take various tests they may suffer from a "stereotype threat." Steele and Aronson theorize this effect adds a stress to African American test takers that may cause them to perform below their actual ability. They found that if African American students felt that a test measured academic or intellectual ability and that they were going to be compared to others, the students tended to perform worse. On the other hand, if African American students did not perceive the test as being associated with intellectual ability, or was not going to be compared to others, the students performed better. Steele and Aronson's research falls under what Jencks called a methodological bias, because the testing methodology/administration led to inaccurate results.

Next, Jencks discussed predictive and selective bias in testing. Jencks puts more emphasis on a selective bias, because many scholars have shown positive correlations between standardized tests and future success. In other words, these test scores tend to be good predictors of future grades, graduation rates, and career success. However, researchers have shown that African Americans compared to Whites with the same test scores actually do worse than the tests would suggest (Jensen, 1980; Hernstein and Murray, 1994). If predictive bias existed then African Americans would perform better than their test scores predict.

Selection bias on the other hand, Jencks argued, is a bigger problem. Selection bias is the idea that organizations use test scores to select applicants instead of performance criteria. Since African Americans and Latinos tend to perform worse on tests, they will not have as much opportunity to be selected. Jencks suggested that since organizations like colleges, businesses and the military often use test scores to recommend admissions African Americans and Latinos are at a disadvantage. This disadvantage is based on the results of a test and not actual performance.

The test bias debate is closely related to the "nature versus nurture" debate. Most empirical research has explained that in the traditional sense, test bias is not a part of well-constructed tests taken by U.S born, English-speaking Americans. However, as long as a mean difference between the groups exists, researchers will question it. Test bias will not be solved by the school system, and while some test bias may exist in some test, it does not likely account for the entire achievement gap. Therefore, other factors should be explored.

School Related Factors Influencing the Achievement Gap

American students spend about seven hours a day or 1,200 hours a year in school. It is expected that they will be given a fair opportunity to learn and to develop into productive members of society. Ideally, if done correctly, schools should successfully educate all students regardless of their backgrounds and/or socio-economic status. However, the continual perpetuation of an achievement gap would indicate that schools are not successfully educating all students. While schools may not be the only reason the achievement gap exists, research suggests it plays a role (Fryer & Levitt, 2004; Hale, 2001; Hill, 2011; Hanushek & Rivkin, 2007; Ladson-Billings, 2009). Literature on the role of school in the perpetuation of the achievement gap indicates that the differences in school resources (Hill, 2011; Ladson, 2006), school culture (MacNeil, Prater, & Busch, 2009; Noguera, 2008), school administration (Barkley, Bottoms, Feagin, & Clark, 2001; Fullan, 2007), teachers (Hale, 2001; Hill, 2011; Jencks & Phillips, 1998; Perry, Steele, & Hilliard, 2004), and pedagogy all play important roles.

School Resources

Throughout the history of formal education in the United States, students of color and students of poverty have had inferior schools when considering resources, teacher experience and per pupil expenditures. Hill (2011) noted several examples of school districts in the south moving money from predominantly African American schools to predominantly White after the passing of Plessy v. Ferguson. Ladson Billings (2006) reported that in several large urban areas with high rates of students of color, the per capita household income levels are as much as half that of nearby affluent suburbs of predominantly White students. Although these are just a couple of examples, researchers throughout history have noticed this inequality (Hale, 2001, Hanushek & Rivkin, 2007;

Hill, 2011; Nisbett, 2009; Noguera, 2008). A difference in resources can have a far-reaching effect. Students at low income schools will most likely experience larger class sizes, less technology, outdated curriculum materials, and less creative teaching pedagogies. Although none of these things may directly impact student achievement, they certainly impact student school experience.

School Culture

According to Deal and Peterson (1999), "School culture is the set of norms, values, and beliefs, rituals and ceremonies, symbols and stories that make up the 'persona' of the school" (quoted in Muhammad & Hollie, 2012, p. 10). When students are at school, they need to feel that they are safe, they are valued and that academic success is important (Hill, 2011; Ladson-Billings, 2005; MacNeil, Prater, & Busch, 2009; Noguera, 2008; Perry, Steele, & Hillard, 2004). A school culture that students can relate to attracts students and encourages them to have regular attendance in addition to having a positive impact on academic achievement (Muhammad & Hollie, 2012). If students regularly miss school, or drop out because they do not relate to what is happening at school, then it is illogical to expect high achievement. Often, in high minority schools and in schools with marginalized minority populations, students feel out of place, not valued, or are not expected to reach for something higher due to racial stereotypes and a culture of indifference. Students in these school environments tend to drop out, lose interest or just go through the motions of school while not reaching their academic potential (Muhammed & Hollie, 2012; Noguera, 2008, Steele; Ogbu & Simmons, 1998; Steele, Spencer, & Aronson, 2002).

School Administration

School administration has been deemed second, only to teachers, as the most important school based factor affecting students (Barkley, Bottoms, Feagin, & Clark, 2001; Fullan, 2007; NASSP, 2013). Effective school leaders for academic success create a clear vision and mission for the school with their teachers. By working with teachers they build trust and improve "buy-in." Effective leaders have high expectations of teachers, students and themselves. They are going to give maximum effort to get maximum effort from their constituents (NASSP, 2013; Barkley, Bottoms, Feagin, & Clark, 2001; Fullan, 2007). For example, in a recent Washington Post article, the Jennings School District superintendent was recognized for going well above the call of duty to turn the school district around. Through her extraordinary efforts she has taken a historically unaccredited poor, African American school in Missouri and regained state accreditation that it had been lacking for more than a decade (Brown, 2015). In addition, effective leaders foster a school culture of academic success that bridges the gap between home, school and community. As mentioned previously, the right school culture can impact student achievement (Fullan, 2007). Finally, school leaders are going to work to support, develop and keep effective teachers, while implementing successful organizational processes (Darling-Hammond et. al., 2007, Hale, 2001). Through these steps, school leaders are the glue that holds it all together. If they are effective at their job, they will create schools where all students can find success. These efforts will have positive impacts on achievement. However, leaders failing to adhere to these steps will not improve achievement and African American students will feel the effects more than their White counterparts.

The Teacher

Lisa Delpit (2012) contends that "nothing makes more of a difference in a child's school experience than a teacher" (p. 71-72). This individual in the classroom interacts with students on a daily basis and can have major influence. A strong argument in this line of thinking is that African American students fall behind because teachers do not challenge them or do not teach them properly (Hale, 2001; Hill, 2011; Jencks & Phillips, 1998; Perry, Steele, & Hilliard, 2004). The plethora of research on teachers indicates that teachers impact student achievement and more specifically minority student achievement in several ways. Depending on beliefs, biases, expectations, characteristics, work ethic and teaching strategies of the teacher, student achievement can be bolstered or hindered (Hale, 2001; Hill, 2011; Jencks & Phillips, 1998; Perry, Steele, & Hilliard, 2004).

Values guide individual decision-making, and determine how they interpret the world and respond to it. This value and belief system follows individuals everywhere. This in turn affects how they teach and how they approach their students (Fullan, 2007; Jencks & Phillips, 1998). Teachers who think that intelligence is innate and determines academic potential, approach teaching and their students differently than those who think all students can learn and just need the right teacher to teach them (Delpit 2012; Hale, 2001; Ladson-Billings, 2006). Many researchers have pointed to examples of teachers raising the achievement of minority students because they had a belief system that valued every student (Delpit, 2012; Ladson-Billings, 2006; Noguera, 2003). This belief system that all students can learn, is best summed up by Ronald Edmonds in, Steele and Hillard's *Young Gifted and Black.* He said, "We can, whenever and wherever, we wish, teach successfully all children whose education is of interest to us. When either we do or do not

do it depends on the final analysis on how we feel about the fact that we have done so thus far" (Perry, Steel, & Hillard, 2004, p. 165).

Not everyone shares Edmonds' enthusiasm, and many teachers allow their beliefs and values to manifest in the classroom through bias and stereotypes. Ladson-Billings (2009), Delpit (2012), Noguera (2009), Phillips and Jencks (1998), Hucks (2014) have all reported stories of obvious bias and stereotypes appearing in the classroom. In his book *New Visions of Collective Achievement: The Cross Generation Schooling Experience of African American Males*, Darrell Cleveland Hucks (2014), provided several stories of African American males school experiences. In many of the stories, the gentleman interviewed, discussed teachers with negative stereotypes and low expectations.

Although researchers have noted negative impacts of teacher bias on student achievement (Borman & Bowling, 2010; Douglas et. al., 2008) others have argued against its impact. For example, Jencks and Phillips noted two studies that deny teacher bias has a strong and lasting impact on students. First, they referenced Jerome Brophy's (1974) work that implied teachers cannot consistently have inaccurate expectations in the face of daily feedback. The authors basically suggested that as teachers realize the abilities of students through classroom work their biases and expectations will change. Second, Jencks and Phillips (1998) referred to work by Emil Haller (1985). Haller's work on ability grouping suggested that race was not a factor for most teachers when selecting groups. While she contends that teacher bias may affect some teachers, to label them all as racist led by their biases is unfounded. In the end, while there might be a few sporadic counter arguments, it appears that beliefs of teachers follow them into the classroom and can have an impact on students.

The beliefs and biases teachers bring into the classroom are known as implicit bias. Implicit bias is the subconscious aversion or preference for a group of people (Van den Bergh, Denessen, Hornstra, Voeten, & Holland, 2010). Implicit bias is thought to predict human behavior more accurately than conscious values (Pronin & Kugler, 2007). Where a teacher may say he/she treats all students equally, he/she may have less patience for a type of student based on implicit bias. Most elementary classrooms in the United States are governed by white, female teachers. In 2012 National Center for Education Statistics showed that students of color accounted for 45% of K-12 student population, while 17.5% of educators identified as non-white (Snyder & Dillow, 2013). One reason for the lack of a diverse teaching force is because of a shortage in positive minority role models in the profession. Minority populations, and men, historically have not had people of similar ethnic and gender backgrounds as their teachers (Irvine, 1989). This scarcity of male and minority teachers means these students are often taught by individuals with a background different then their own filled with a variety of implicit biases.

In addition to teacher beliefs impacting their bias and stereotypes, they also impact their expectations of students. Research in this area has also demonstrated that this is a problem for minority or underprivileged students (Brophy & Good, 1970; McKown & Weinstein, 2008; Rist, 1973; Weinstein & Scrambler 2004;). In their research, McKown and Weinstein (2008) found that ethnicity and social economic status impacted teacher expectations of students. These expectations of students in turn impacted student achievement. The authors suggested three primary reasons for this. First, they noted that students, whose teachers expect them to do better, receive higher levels of instruction and in turn perform better. Second, students perceive this

difference in expectations, internalize it and then act accordingly. Some researchers have referred to this is as expectancy, or a self-fulfilling prophecy. Third, they suggested that students may fear being judged by various racial stereotypes, and therefore perform worse because of stress (McKown &.Weinstein, 2008; Steele,1997). No matter the exact reason for the difference, research clearly states that teacher expectations are strongly correlated with academic success and even stronger correlated with minority academic success.

Certain teacher characteristics have also been shown to have an impact on student achievement. Characteristics such as years of teaching, certification, determination, relatability, content knowledge, adaptability and enthusiasm have been shown to have positive correlations with student achievement. In her book, The Dream Keepers, Ladson-Billings (2009) found that all of the teachers she followed had at least 12 years of experience. This is not to say that new teachers cannot be effective, but that experienced teachers may have a bigger selection of tools for the job. Asa G. Hillard III (Perry, Steele, Hillard, 2004) found that teachers who demonstrated success with minority students were determined and creative. These teachers did not just do what has always been done and accept failure. They changed strategies and tried new things until they had success. Hillard III shared the example of William Johntz, a high school teacher in California. Johntz refused to accept failure, and successfully taught high level math concepts to some of the most impoverished minority students in California (Perry, Steele, Hillard, 2004). Moreover, Thompson, Warren, Foy, & Dickerson (2008) found that African American students particularly preferred teachers to have relational qualities like enthusiasm, humor, and compassion.

Regardless of how the researchers labeled the specific characteristics, the major theme in common is not to accept the status quo, or the idea that certain groups of students cannot perform well. These researchers and many others have all seen examples of African American students achieving higher than expected outcomes because of the efforts of their teachers. Students will work hard and perform their best for teachers that: take a personal interest in them, have high expectations, make content meaningful and relevant, and have an obvious passion for what they do (Gentry, Steenbergen-Hu, Choi, 2011).

Pedagogy

Pedagogy, in its most simplified term, is the method and practice of teaching; the theoretical framework on which they base their instructional strategies (Oxford Dictionaries, 2004). There are a variety of pedagogical techniques teacher can bring to the classroom depending on their goals. Ideally, if pedagogy is effective, students will learn. The problem is determining what pedagogy will be effective for all students. Throughout the years, teachers have utilized teaching strategies like direct instruction, interdisciplinary instruction, discovery learning, cooperative learning, problem based learning etc. (Resources, 2015). While some of these strategies are more effective than others, researchers have argued that they do not fully reach minority students (Delpit, 2006; Hale, 2001; Ladson-Billings, 2009).

The failure of these traditional methods has led researchers like Gloria Ladson-Billings (2009) Lisa Delpit (2012), Geneva Gay (2010), and Sharrocky Hollie (2011) to research, develop, and advocate for a new way of instructing African American students referred to as "culturally relevant teaching." Although some of the researchers

manipulate the name in different ways, the premise is still the same. That is that teachers need to first identify their own culture and biases, and then from there learn about the culture of their students. By learning student culture, teachers can bring that culture into the classroom, and connect more deeply with their students. Although, primarily discussed when talking about minority students, some have described it as "just good teaching" (Ladson-Billings, 1995). Culturally relevant teachers are seen doing activities that maximize student interaction, emphasize culturally relevant materials, maximize questioning, increase engagement, and encourage high level thinking (Delpit, 2012; Gay, 2010; Ladson-Billings, 2009). Culturally relevant teachers also work to validate student identity while bridging the gap between home and school (Hollie, 2011). Most of the research in this area observes teachers utilizing this pedagogy to increase student academic achievement when compared to the average achievement of minorities.

In the end, teachers need to use teaching strategies that will engage students and validate who they are as individuals and as part of a collective. Teachers who have remained with traditional lecture type teaching that use materials centered on mainstream culture are not likely to impact minority groups (Delpit, 2012; Gay, 2010; Ladson-Billings, 2009). Since the majority of teachers are White, they will have to step out of their own comfort zones, to better understand their marginalized students. Although quantitative literature is scarce on how impactful culturally responsive teaching is, qualitative data suggests that it is effective in improving minority student achievement (Delpit, 2012; Gay, 2010; Ladson-Billings, 2009).

School Factors Conclusion

As evident by the research presented in this section, there are a variety of ways in which the school could impact achievement and work towards narrowing the achievement gap. Schools that provide adequate resources to all students would ensure that students have an equal opportunity to learn using current materials, the latest technologies, and pedagogical best practices. Schools that emphasize a climate of academic success for all also help to minimize stereotypes and encourage all students to do their best. Moreover, effective school administrators create a collaborative vision and mission that promotes academic achievement and high expectations for all students. These leaders also create a successful organizational process that supports, develops and maintains quality teachers that utilize culturally relevant pedagogy and have high expectations for all students.

While many researchers argued that with this logic schools can have a substantial impact on the achievement gap. There still exists a mindset that neither school nor education are determining factors in achievement. Russhton and Jensen (2005) and Hernstein and Murray (1998) claim that intelligence is mostly innate, linked to achievement, and investing in schools with a hope of changing these outcomes is ineffective. This reasoning suggests that schools do little to change the gap. Supporters of this theory blame hereditary or various non-school related factors such as a history of turmoil, social-economic status, and/or sociocultural issues.

Non-school Related Issues

If heredity, test bias, and schools are dismissed as the cause of the achievement gap, then a variety of non-school related issues need to be investigated. The research is full of different phenomenon that might impact achievement and the achievement

gap. Research has pointed to factors like: educational debt, socioeconomic status, family dynamics, socio-cultural differences, oppression, racism, decreased family values, and a culture that does not care about schools. While many of these topics have research support, this paper is focused on three major categories that have shown various correlations and cover many of topics in the research; educational debt, socioeconomic status and sociocultural differences. These three categories are closely related and encompass many lesser researched ideologies.

Educational Debt

Once educators decide that the persistent difference between White and African American achievement is more than an innate difference in IQ; they have to look more deeply into the historical background that led to the gap. In her article, "From the achievement gap to the education debt: Understanding achievement in US schools," Gloria Ladson-Billing (2006) suggested that a history filled with strife, has created a debt in education for African Americans and other minorities that is represented by the achievement gap. Ladson-Billings (2006), and Teresa Hill (2011), described a historical context that is relevant to a discussion of the achievement gap. The theory of an educational debt that Ladson-Billing (2006) presented and the historical context that Hill (2011) provided fosters several key points to consider when investigating the achievement gap.

First, educators have to look at a population that was torn from their homes to become slaves and involuntary immigrants. This forced transition left Africans at a disadvantage compared to the European immigrants that came voluntarily. Africans were denied many of the initial privileges and rights of the early settlers (Ladson-Billings,

2006; Hill, 2011). Africans were enslaved and thought of primarily as property, not people in need of education. Hill (2011) quoted Thomas Jefferson as saying: "Comparing them {negros}, by their faculties or memory, or reason, and imagination, it appears to me, that in memory they are equal to the whites; in reason much inferior, as I think one could scarcely be found capable of tracing and comprehending the investigations of Euclid; and in imagination they are dull, tasteless, and anomalous…." (Hill, 2011, p.26). This ideology held by political leaders, White elites, and society led to a devaluation of Africans and the notion that educating them would be pointless. Although this view was prevalent in early America, it was even more significant in the south (Hill, 2011; Ladson-Billing, 2006).

Second, educators must look at several of the early laws our country passed in regards to slaves and African Americans. One law was the "Three Fifths Compromise". This law suggested that African Americans only constituted as three fifths of a person. Other discriminatory laws in the South forbid the teaching of reading and writing to slaves for fear of rebellion. In addition, "The Fugitive Slave Law" and the Dredd Scott Case reconfirmed the idea of slaves as property and less than a citizen of the United States (Hill, 2011; Ladson-Billing, 2006). Another detrimental law or ideology was the ruling that "separate but equal" was acceptable. In this famous case, *Plessy v. Ferguson* the United States Supreme Court upheld state laws that segregated public facilities. This ruling has had a long lasting impact on the educational wealth of African Americans. This ruling allowed for major funding shifts that perpetuated the differences in the quality of education African Americans were able to obtain.

This troubling history differs significantly from the White history and has left African American's deficient in many areas that contribute to Ladson-Billings's educational debt. Ladson-Billings (2006) contended that this educational debt consists of a combination of economic, social-political and moral debts. The underrepresentation of African Americans in the political world is one example of the effects of this divergent history on African Americans. Although African Americans earned the right to vote in the 1870s, many states had voting regulations that made it difficult or impossible for them to cast a ballot. For example, Louisiana and several other southern states enacted "Grandfather Clauses." These laws created high poll taxes, literacy tests, and land requirements that effectively excluded African Americans. The 1965 Voting Rights Act removed many barriers for African Americans but by this time, negative mental biases and cultural traditions had been set in the African American community regarding voting. Without the African American voice being part of the governing of the county for many years, laws and policies were set up and enacted that prevented African Americans from advancing in society. Hill (2011) speculated that this history of exclusions concurs with the idea that African Americans are innately inferior. She posited that these unfair standings in society, at the time of social Darwinism and the creation of intelligence testing, could only lead to a conclusion that African Americans are inferior.

In the end, Ladson-Billings's (2006) and Hill's (2011) historical context described a stage that left African Americans society inferior to their White counterparts. A history so full of oppression would leave any group grasping at straws to rise in the world. To conclude that African Americans are inferior because they may not perform at the same

caliper as Whites, is illogical given their unequal backgrounds. Randall Robinson (2000) may have summarized it best in his book "*The Debt: What America to Blacks."*

> "No nation can enslave a race of people for hundreds of years, set them free bedraggled and penniless, pit them, without assistance in a hostile environment, against privileged victimizers, and then reasonably expect the gap between the heirs of the two groups to narrow. Lines, begun parallel and left alone, can never touch." (p.74)

African American's difficult history in the United States has forced them to forge their own way in a fight for equality. Hill (2011) pointed to many examples of African Americans attempting to move their people forward by whatever means necessary. The ventures of early African American educational pioneers like Fredrick Douglas, Booker T. Washington and W.E.B. Dubois are clearly detailed (Hill, 2011). These individuals, each in their own right, tried to better the educational experiences of African Americans (Hill, 2011).

Although these individuals have fought hard for equality, the African American and White experience has still differed and resulted in inequality. The pervasive inequality continues because the historical issues previously mentioned have only morphed into other complex issues that continue to impact the achievement gap. Many of the school factors mentioned above and the non-school factors mentioned below have been influenced by this history of turmoil.

Socioeconomic Status

Socioeconomic status was the first non-school factor investigated. Researchers have spent years analyzing this topic and have continuously debated what factors should

be considered as socioeconomic indicators (Phillips & Jenckcs, 1998; Sirin, 2005). The American Psychological Association (APA) stated that socioeconomic status is a combination of income, education and occupation that is relevant to all realms of behavioral and social sciences (APA, 2015). A variety of other researchers have broadened the APA's indicators to include: free and reduced lunch status, mom's occupation, mom's education, family income, grandparents' education, grandparents' income, neighborhood, family assets, etc. Even with these broader indicators, the most common indicators used are the occupation, education, income of the mother and free or reduced lunch status (Perry & McConney, 2010; Phillips & Jencks; 1998; Sirin, 2005; White, 1982).

In their factsheet on *Education and Socioeconomic Status* the APA (2015) noted that low socioeconomic status can have a variety of negative effects on people. Specific to education, the APA mentioned the ill effects of low socioeconomic status as: a slower development of academic skills, parents who read less, a higher dropout rate, smaller vocabulary, and less overall learning (APA, 2015). Students with low socioeconomic status were more likely to start with a deficit academically, and carry that deficit with them throughout their educational career (Howard, 2015).

Previous research on socioeconomics has indicated negative effects of socioeconomic status. Meta-analysis by Sirin (2005) and White (1982) indicated that socioeconomic status impacts academic achievement. Although their studies vary a little, they both concluded that there is a correlation between socioeconomic status and student achievement, depending on the factors that were identified. For example, Sirin (2005) concluded that socioeconomic status of the family has a strong impact on academic

achievement when a wider range of variables are used as socioeconomic status indicators. (Sirin, 2005; p. 438). This conclusion is in line with White's (1982) findings. White (1982) found that traditional measures of socioeconomic status at the student level had a minimum impact, but where an aggregated unit of measure was appropriate the correlation, was much more significant (White, 1982; p. 474). In other words, a broader definition of socioeconomic status and a population level analysis was more significant than a restricted view of socioeconomic status and a student level analysis.

In addition to Sirin (2005) and White (1982), Perry and McConney (2010) also found that socioeconomic status correlated with academic achievement. Through their analysis of 2003 Programme for International Student Assessment (PISA) scores in Australia, Perry & McConney noted that although individual socioeconomic status standards impact student achievement, school mean socioeconomic status had an even larger correlation. They concluded that students who attended higher socioeconomic status schools would be more likely to have increased academic success over students at low socioeconomic status schools. This research is concurrent with Sirin (2005) and White (1982). They concluded by arguing that schools that are segregated by socioeconomic status will have adverse effects on students. Students who are poor and attend lower socioeconomic status schools will not perform as well as if they had attended higher socioeconomic status schools (Perry & McConney, 2010).

In the United States, however, socioeconomic status is a difficult factor to evaluate and draw causation conclusions about (Sirin, 2005; White, 1982; Phillips & Jencks, 1998). The fact that socioeconomic status has both direct and indirect impacts makes it difficult for researchers to determine direct effects. For example, Sirin (2005)

noted that a family's socioeconomic status has direct impacts on resources at home to support education, while also having a variety of indirect impacts. Sirin (2005) mentioned that socioeconomic status indirectly effects school choice, neighborhoods, social capital and even potential relationships between parents and school personnel. All of these indirect factors can also impact achievement.

Phillips and Jencks (1998) agreed that socioeconomic status is a very complicated factor to evaluate. Their findings indicated that while the most traditional views of socio economics status (parent [especially mother's] education, occupation and income) might show only minor correlations to academic achievement, the correlation increases as more indirect impacts are considered. Their research indicated that income alone did not have significant predictive factors for student achievement. However, as they broadened their list of family environmental factors, their correlations increased.

Just as research on the impact of socioeconomic status on achievement is complicated, so is determining its relationship to the achievement gap. Hernstein and Murray (1994) indicated that socioeconomic differences between African Americans and Whites only account for a minor difference in the achievement gap. Moreover, they noted that the difference between the two groups was not big enough to be significant. While Hernstein and Murray acknowledged a difference exists, they minimized its importance, and suggested that it is not socio economic status that accounts for the difference, but the innate ability of students.

Phillips and Jencks (1998) agreed with Hernstein and Murray (1994) that income alone might not have a large impact on the achievement gap. However, Phillips and Jencks argued that when socioeconomic status is evaluated as more than just income and

both its direct and indirect effects are considered, it can be more relevant than Hernstein and Murray (1994) noted. Phillips and Jencks concluded that if socioeconomic status is considered in combination with other environmental factors, the difference between African Americans and Whites can easily be big enough to account for the difference in academic achievement scores (Phillips & Jencks, 1998).

In the end, a variety of research has indicated either directly or indirectly socioeconomic status can impact achievement (Phillips & Jencks, 1998; Sirin, 2005; White, 1982). Whether the effect is due to a lack of resources, a lack of quality schools, a poor neighborhood, a lack of social capital or under educated parents, socioeconomic status will hinder academic achievement (Lacour & Tissington, 2011). This impact is not permanent and can be changed as socioeconomic conditions improve. However, the average African American child is statistically on the lower end of socioeconomic status, and starts at a deficit in this area when compared to that average White child (Mishel, 2012). Thus, no matter the size of the impact socioeconomic status has, it needs to be addressed if the achievement gap is to be narrowed (Lacour & Tissington, 2011; Lee & Burkam, 2002; Reardon, 2013).

Social, Cultural Differences

In addition to socioeconomic status, sociocultural differences are discussed broadly as a non-school related cause of the achievement gap. These factors include: family dynamics, systematic oppression, stereotype threat, "acting white," dis-identification, critical race theory and deficit thinking theory. Many of these ideas are closely related and will be explored more thoroughly.

The first sociocultural factor often discussed is the deterioration of the African American family. Researchers and politicians have stated that the breakdown of the African American family and the inability to pick themselves up by the boot straps is the reason for their failures in society (Hill, 2011; Hucks, 2014; Ladson-Billings, 2006). One of the most influential works propagating this ideology was a report written by the assistant Secretary of Labor in 1964 Daniel Patrick Moynihan. His report titled *The Negro Family: The Case for National Action* is better known as the ”Moynihan Report”. This report implied that the African American family consisted of a variety of negative factors that were intertwined and the cause of a variety of African American issues in society. He noted a much higher single parent multiple child birth rate, and high number of single African American mothers as key phenomenon working against African Americans (Moynihan, 1965). Although his report was intended to spur more government action to help poverty and the African American family, it failed in this endeavor. Instead, the report became a highly controversial document that spawned the conservative view of blaming the victim (Acs, 2013; Hucks, 2014; Valbrun, 2013).

If the African American family is as dysfunctional and different from White families as Moynihan suggested, then a difference in academic achievement should be expected. Many researchers have shown correlations between family structure/family involvement and academic achievement (Astone & McLanahan, 1991; Jayness, 2005; Hill, 2011, Huck, 2014; Valbrum, 2013). For example, Astone and McLanahan (1991) found that children from single parent households received less help with school work, lower parental involvement, and lower expectations than intact families. Moreover, Jaynes (2005) found that when gender, race and socioeconomic status were controlled

family structure was the greatest predictor of academic achievement. Ron Haskins, a senior fellow at the Brookings Institute, in an interview with the Washington Post, indicated that there is a plethora of research that children in female single parent households do not fare as well and are more likely to do worse in school (Valbrum, 2013). Research suggests that the achievement gap will exist if African American families continue to live in single parent homes with less parental involvement than Whites.

The argument against the strong impact of family structure and parental involvement on the achievement gap is that White families have also deteriorated over time. Ann Gregory et al. (2013) noted in their report "The Moynihan Report Revisited" that although more Whites are in poverty and are living in single parent homes, they continue to outperform African Americans. If family structure alone was the reason for the achievement gap, then as White families deteriorated there should be a closing of the gap. However, that is not the case; the gap has stayed relatively consistent over the years. Moreover, Gonzales et al. (1996) also found that family status variables were not as predictive of student achievement as other variables researched. It is, therefore, likely that family structure and involvement may have some impact on individual academic achievement, but, is probably not responsible for the entire achievement gap between the groups.

The next social cultural issue after family dynamics is the way African Americans identify with the dominant group. The way African Americans observe and react to the world around them is complex. Several researchers have posited that it is due to these complexities that African Americans are behind. Researchers like John Ogbu (1997),

Jason Osborne (1997), Claude Steele (1997), Richard Valencia (1997), Gloria Ladson-Billings and William Tate (1995), and Pedro Noguera (2003) have all suggested various reasons that the African American experience as a minority has hindered their progress in many aspects of society, including academic success. While these researchers all discussed an unevenness of power, they developed their own unique ideas of how the power struggle manifested itself.

Ogbu along with various colleagues have done substantial research into the African American experience. They found that African American students struggle with the idea of assimilating into the White culture. Ogbu (1998) argued that African Americans have formed a sort of oppositional culture. That is they see that assimilation would cause them to lose their own identity and culture and they therefore act out against it. Ogbu and Simmons (1998) suggested that this desire to keep their own cultural identity stems from the fact that African Americans are involuntary immigrants. This forced migration caused Africans to resent the White culture. Voluntary immigrants see America as a place of opportunity and thus try harder and are not afraid to assimilate as readily. To the contrary, Ogbu and Fordham (1986) noted that African American students who are capable of performing well do not because of the fear of "acting white." They found that in many African American homes it was not acceptable to fit in with the White crowd. In addition, they suggested that many African Americans mentioned the fact that an apparent job ceiling existed, and constant societal portrayal of African Americans being inferior led to "inordinate ambivalence and affective dissonance" (p.177). In other words, African Americans did not see the point of assimilation when there was no obvious benefit to it.

Although Ogbu's research is well accepted, it is not without its critics. He himself suggested that although his ideas may speak true to group observations, there are many individual examples that counter it. In addition, Phillip Cook, and Jens Ludwig in their chapter "The Burden of 'Acting White': Do Black Adolescents Disparage Academic Achievement" of *The Black-White Test Score Gap* argued that their research did not show such an attitude among African Americans (Jencks & Phillips, 1998). In their analysis of the National Educational Longitudinal Study (NELS), Cook and Ludwig found that when they controlled for socioeconomic status, African American students responded very similarly to Whites on questions regarding effort, attendance, graduation and popularity. Cook and Ludwig concluded that African Americans as a group do not have such a fear of "acting white." If this fear existed, then African Americans should have done obviously worse on these responses than Whites. The researchers also questioned the generalizability of Ogbu's research. Cook and Ludwig noted that Ogbu's research took place in a predominantly poor, African American school in the inner city making the generalizations limited. Teresa Perry (Perry, Steele, & Hilliard, 2004) also questioned Ogbu's work. She argued that stereotyping African Americans as a group of people who did not want to succeed, or did not value education was a disservice to the many African Americans who have found success and high achieving. Perry admitted that there might be individuals that fit into Ogbu's labels, but theorized that as a group African Americans wanted to achieve and were not afraid of "acting white." While Ogbu's work has merit and presents a reasonable cause for academic underachievement for some, it clearly does not solely explain the academic achievement gap for all minority students.

In addition to Ogbu's cultural theories, Claude Steele and colleagues presented another social/cultural idea of why African American students might be underperforming. Steele and Aronson (1995) brought the idea of "stereotype threat" into the literature. These individuals were perplexed by African American individuals seemed to underperform in college. They were aware of culture gaps and dis-identification issues, but felt there had to be more to the situation. They conducted a variety of studies based on the idea that African Americans would perform differently, if they perceived their results would lead to stereotypical views. Steele and Aronson found that when academically strong African American students understood a test to measure academic or intellectual merit they would perform worse, than if the test measured other less threatening traits. Moreover, they found that African American students felt more internal stress when taking these types of tests. Their results indicated it was not for a lack of caring or trying, but because African American students tended to overthink things as they aimed to perform their best. (Steele & Aronson, 1995, 1998; Steele, 2003). These results suggest that academically strong African Americans actually care deeply about performing well, and not living up to stereotypes. This contradicts Ogbu's "acting white" ideologies. If African Americans were afraid of performing well for fear of being seen as White, they would not have exhibited the pressure to do well. Therefore, Ogbu's theory could not be applied. However, not all students are impacted by stereotype threat either. In fact, Steele and colleagues found that academically average, or unsuccessful, did not suffer from stereotype threat to the same extent as academically successful African American students (Steele, 2003). This suggests once again that achievement must be influenced by multiple sources.

Many other researchers have applied Steele's theory to other groups (Inzilicht & BenZeev, 2000; Osborne, 2007; Stone et al, 1999). These researchers have linked underperformance to various groups where stereotypes exist. For example, women in mathematics and Whites in sports. Moreover, Desert, Preaux, & Jund, (2009) found that socioeconomic status can also lead to a stereotype threat effect. In their research of elementary school students, they concluded that students of lower socioeconomic status underperform when they sense an assignment is evaluative in nature. Since a large majority of African American students are also poor, they could be impacted by this theory on multiple fronts. This is not to say all African Americans will be affected by stereotype threat, just that this is yet another reason that explains some of the achievement gap existence. Steele and Aronson found that Whites do not succumb to this effect the same way. Since their intelligence is not regularly questioned, Whites do not as readily feel the pressure to perform or prove themselves.

Extending on some of Steele's (1992), and Finn's (1989) earlier work Jason Osborne (1995, 1997, 1999) suggested that African Americans are not achieving because they are dis-identifying with academics and White culture. Osborne found that primarily African American males are losing a connection to academic success and that their self-esteem is no longer associated with academics as they get older. Osborne insinuated that younger African American boys were more connected to education but a steady drop exists between 8th and 12th grade. He suggested this drop occurs because they are finding other areas to identify with, i.e. sports, and popularity, or because they realize the strength of stereotypes and other harsh realities that exist for African American males. In

other words, as African American boys age, they realize their future is historically bleak, and find other areas beside education to focus their attention.

Critical race theory is another socio-cultural ideology that may contribute to the achievement gap. Critical race theory is the theoretical movement that proposes that white supremacy, power, and privilege have intertwined with the law to maintain the current status quo of oppression of people of color (non-whites) (Ladson-Billing & Tate, 1995). The laws governing education, equality, housing, and dispensation of funds affect students at the elementary level. Racism has worked to keep a power imbalance. Critical race theory highlights a possible cause of the achievement gap (Love, 2004). Segregation is the clearest example of critical race theory in how education has been kept unequal by the law and racism coming together to oppress (Dixson & Rousseau, 2005).

The last socio-cultural ideology that is often identified for the achievement gap is the deficit thinking theory (Valencia, 1997, 2012). Deficit thinking combines many of the above ideologies. A history of racism and thoughts that poor and minorities were somehow genetically disadvantaged, mixed with institutional practices that favor the group in power, have led to an ideology of blaming the victim (Valencia, 2012). Valencia argues that as long as schools fail to look within and see what they can fix about themselves, they will continue to blame minorities and the poor for their own failures. Valencia suggested that a democratic educational system where every student is treated equally, curriculum is presented equally and students have an equal say in what effects them will be the only way to minimize the impact of deficit thinking (Valencia, 2012)

Non-School Related Factors Conclusion

In the end, research is abundant in theories and ideologies about what types of phenomenon outside of school might impact African American achievement. The issue is that the problem is so complex, that it is not likely to be just one. A factor like low socioeconomic status could have a negative impact. However, when socioeconomic status is controlled and African American students still perform worse than their White counterparts.

This difference requires a deeper investigation. As researchers have dug deeper, they have developed ideas such as: "acting white," stereotype threat, and dis-identification theory. While these ideas or theories can contribute to some of the academic achievement gap, it is hard to say they account for the whole thing. However, what they all have in common with each other and with other ideas like critical race theory (Ladson-Billings, 1995) and deficit thinking theory (Valencia, 2010) is they are all group responses to a power dynamic in American culture. Rich and middle class White men founded this country and set the norms that all other will be measured against. This would have been fine if those others were given a fair chance from the beginning. This was not the case for African Americans, and this rough start set the course for the many socioeconomic and sociocultural differences that are being dealt with today. As long as African Americans are looked at as less than Whites, institutionalized racism continues to hold them back, and stereotypes oppress their mobility, sociocultural differences will continue to be an area that separate the groups and perpetuate the current gaps.

School Climate and its Four Aspects

The National School Climate Council (2007) defines school climate as: *based on patterns of people's experiences of school life and reflects norms, goals, values,*

interpersonal relationships, teaching and learning practices, and organizational structures." The development of a child as an intellectual individual is best fostered in an environment where that child feels a part of a positive school climate and culture (Ortega, Sanchez, Ortega-Rivera, & Viejo, 2011).

Safety

The National School Climate Center identifies three areas of school safety (Larson, 2014; National School Climate Council, 2007). The first is the clear communication of school rules, expectations, and norms related to physical and emotional well being. The second is the overall sense of physical safety in the building, both by students and adults. The third relates to the emotional security in the building; the student sense that they will not be bullied or emotionally harmed by others. The Climate Center suggests that any school climate improvement plan must first focus on safety and the best way to do so is to connect a student to an adult, develop shared vision of what safety means and how to reach it, and eliminate bullying behaviors.

Safety is a fundamental human need (Maslow, 1943). In Maslow's hierarchy of human needs, safety comes only after basic physiological functions needed to survive. A feeling of safety and support contribute to healthy child development (Devine & Cohen, 2007). In schools lacking a positive school climate students are more likely to be victims of violence and bullying, lower academic achievements, and harsher disciplinary actions (Astor, Guerra, & Van Acker, 2010). Students identified feeling more comfortable seeking help and had a more positive perception of schools where there were more rigid rules that were referred to often (Cornell & Sheras, 2006). School discipline levels and

accessible availability of support staff and teachers are high indicators of a sound school climate that facilitates safety (Gregory et al., 2010).

Student risk behaviors have shown to be lower in schools with a positive climate (Klein, Carneel, & Konald, 2012). This is especially important in low social economic schools where students are already identified as at risk or more likely to fail at school (Obradovic, et al., 2012). While school physical violence is not the norm in American schools, students do experience risks to their social, emotional and intellectual safety (Mayer & Furlog, 2010). Maslow (1934) states that if a person does not feel safe they cannot move on to the phase of feeling love and belonging in life. This is true also for the successful matriculation of a student through school. Bullying is one of the most common safety issues in schools. Both the bully and the child being bullied suffer long-term physiological ramifications if the behavior persists over time (Wolke, Woods, Blomfield, & Karstadt, 2000). Positive school climate is linked to reduced aggression and reduced violence (Gegory et al., 2010). The more connected a student feels to their school, the less likely he or she is to perpetrate aggression or violence and connectedness is directly linked to positive school climate (Wilson, 2004).

The most important aspects related to school safety that affect student perceptions of school are "structure and support" (Gregory et al., 2010). The students' perceptions of school being a fair and just place is under-researched, but uniformity of rules and consequences have been shown to lower the likelihood of negative and unsafe behaviors (Gottfredson et al., 2005). Engineering a strong base of trust and cohesion among staff, teachers, and students creates a school where students identify that they are safe and nurtured and this contributes to a school climate of structure and support.

Teaching and Learning

There are two dimensions of teaching and learning identified by The National School Climate Center: support for learning and social and civic learning.

The foundations of the ability of a child to learn from a teacher come from respect and trust (Ghaith, 2003). Joyce Epstein (2001), in her role-theory, identifies that the building of the teacher-student relationship is a primary indicator of school connectedness. The formation of a positive teacher-student relationship is predictive of behaviors and also related to conducive learning environments (Hamre & Pianta, 2001). Not only can a positive school climate impact immediate learning, but the effects can also follow a student for the rest of his or her life. A school with a positive teaching and learning climate includes high levels of student participation, a level of teacher understanding about the needs of students, cooperative learning, the ability of the student group to influence the behavior and success of their peers, and mutual respect and trust throughout the school (Finnan, Schnepel, & Anderson, 2003).

Mead's (1934) theory of the self and the mind or the "Me" and the "I" is foundational to a child's ability to learn. The "Me" of a child is developed through interactions. In Mead's theory, a child who interacts negatively or in a bias way with a teacher will develop an internalized concept of the "Me" that is inferior (Paredes, 2014). This "Me" is the construction a child makes of who he or she is based on interactions with others. Without a positive "Me" built on confidence and esteem, learning is unlikely to take place. Outside of the family, an elementary teacher and other staff in the school building are powerful players in developing a sense of self and especially a self that is ready to learn.

Interpersonal Relationships

Respect for diversity and social support from adults and peers, are the dimensions of interpersonal relationships as defined by The National School Climate Center. Students need to be accepted for who they are and be supported by and involved with positive interactions with adults and peers to flourish. Diversity refers to more than just physical differences, but also broadens to the unique identify of each child.

The school contributes to the sense of relatedness of the students, but it is the homeroom teacher at the elementary level and the relationship with the individual student that has the most impact on the behavioral, emotional, and intellectual development of a child as compared to other school based relationships (Hamre & Pianta, 2001; Skinner & Belmont, 1993). Positivity of teacher toward student interaction and student ability is a key determiner of students feeling positively about school. A positive school climate in early years helps a child make a favorable attachment to school that can last through graduation (Osterman, 2000).

While the "Me" is developed through external cues, Mead (1934) theorizes that the "I" is a creative internal process. This is where the child will 'try out' their personality and gauge reactions to bring together a fusion of the "Me" and the "I". A positive school climate, based on the connection with staff and peers, allows a child individuality and creativity within a safe and supportive environment. Maslow places love and belonging in the center of his pyramid of hierarchal needs. He theorized that before a person develops their esteem and becomes self-actualized the relationships he or she builds affect these processes. A positive school climate of love and acceptance from staff and teachers provides the foundation needed for the most positive development of a

person. Bronfenbrenner (1986) also emphasized the importance and foundational nature of connections between the individual and the school.

Institutional Environment

This National School Climate Center category refers to not just the physical environment, but also student connectedness and engagement in and with school. Bronfenbrenner (1986) bases human development on interactions between a person and their environment, giving great importance to the overall institutional environment and the climate of a school. The interactions between the students and other individuals at the school, including adults and peers, and the interactions that take place connecting school to home and the community are all within the first and second rung or the microsystem and mesosystem of Bronfenbrenner's Ecological Systems Theory of human development (Bronfenbrenner, 1979) (see Figure 1.1).

School connectedness is defined by The Center of Disease Control and Prevention (2009, p.1) as "the belief by students that adults and peers in the school care about their learning as well as about them as individuals". To build a positive institutional environment a school must provide a platform for students to develop these feeling in order to connect them to the school itself. Students' satisfaction of school is related to the degree to which they feel connected (Loukas, Suzuki, & Horton, 2006). Connection comes through feeling safe, feeling included, a feeling that basic, interpersonal and academic needs are being met, and that relationships are built on trust and respect. These factors are some of the strongest indicators of a positive school climate.

School Climate, Achievement, and the "Gender Gap"

Students' school education not only consists of lessons and content taught, but also the attitudes and actions of their peers and the staff (McCabe, Dragowski, & Rubinson, 2013). The student experience of the explicit and implicit atmosphere affects their perceptions of school. These experiences differ among racial group and gender groups. A further determiner of student outcome, founded in Deci and Ryan's Self-Determination Theory, is self-concept. Self-concept in academic abilities between White and Black students is a predictive factor of both school climate perceptions and academic achievement (Taylor et al., 2014). This self-concept is influenced by school and interactions with teachers and peers.

Voight, Hanson, O'Malley, Adekanye (2015) found that where racial gaps in school climate perceptions are largest so too is the racial achievement gap. This suggests that climate and achievement are linked when it comes to the experience of African American and White students. Their study showed that African American and Hispanic students had the worst perceptions of school climate and also the highest achievement gap when compared to White students. When these perceptions were slightly more positive, the achievement gap was also slightly smaller.

In the body of school climate research minority students (Battistich, Solomon, Kim, & Watson, 1995; Koth, Bradshaw, & Leaf, 2008; McNeely, Nonnemaker, & Blum, 2002) and male students (Griffith, 1999; Verkuyten & Thus, 2002) are consistently identified as having the least favorable view of school climate. Risk factors for academic failure also include minority groups and male students (Rouse & Fantuzzo, 2009; Rumberger, 1995). At this intersection of high risk of academic failure and likelihood of a negative school perception is the African American boy.

Low test-scores, high dropout rates, behavior referrals and special education statistics are risk factors for young African American men (Whitmore, 2010). Roughly half of African American male students complete high school (Noguera, 2009). African American boys are suspended twice as often as other students (Noguera, 2009). Just 14 percent of African American eighth graders are considered proficient in all subject areas (Tatus, 2005). Male students are twice as likely as females to be diagnosed with a learning disability (Bloom, Cohen, Vickerie, & Wondimu, 2003). Boys are three times as likely to be diagnosed with behavior disorders like Attention Deficit Disorder (Bloom, Cohen, Vickerie, & Wondimu, 2003).

Minority male students are most at risk for less positive relationships with their teachers especially in the areas of feeling supported by teachers (Milam, 2014). Females typically identify more problems with their peers and better relationships with their teachers (Milam, 2014). Girls outperform male students in academic achievement (Holmlund & Sund, 2008). The "gender gap" is most commonly associated with female positive perceptions of school, enjoyment of reading, compliant behavior, and time spent studying (Houtte, 2004). Girls earn better grades early in school, which builds a culture of academic confidence in females that often carries them through high school (Freudenthaler, Spinath, Neubauer, 2008).

The African American Male Student School Experience

The experience that a child has in school is extremely important not only to academic growth, but also to general development. The school day provides a core foundation to children socially, intellectually, and academically. The school experience can be very different among varying schools and among different cultural, ethnic, racial,

socioeconomic status, and gender groups. Some of the most negative or distrustful feelings about school are seen in the African American community, often based on perceived or real biased treatment (Haynes, Emmons, & Ben-Avie, 1997). There are many reasons for this, but focused just on climate there are areas specific to African American students that can be addressed and identified.

African American student satisfaction of school directly relates to identification of a positive perception of school as a caring and supportive environment (Baker, 1998). In early adolescence a positive school climate is predictive of better psychological well-being (Shochet et al., 2006; Virtanen et al., 2009). A positive perception of school and a school environment conducive to learning can even overcome the barriers often associated with lower socioeconomic levels (Astor, Benbenisty, & Estrada, 2010). When students perceive their school as having a positive climate there are fewer incidences of students aggression and violence (Gregory et al., 2010). A good school climate is like a buffer against negative factors often associated with schools, especially in low socioeconomic schools (Ortega, Sanchez, Ortega-Rivera, & Viejo, 2011).

Studies have shown that many of the factors affecting the African American community have an impact on how a student perceives school climate (Heynes, Emmons, & Ben-Avie, 1997). Behavior consequences, being behind a grade level in academic achievement and/or being held back a grade, having just one parent at home, and parents having a low level of academic achievement, all affect how a student perceives the school (Fan, Williams, & Corkin, 2011). The perceived racial climate of a school has also shown to impact student achievement (Matison & Aber, 2007).

African American Boys and the Achievement Gap

When improving school equity in test scores and closing the achievement gap there is one specific population most at risk, the young African American male student. The greatest overall achievement gap is found in African American male achievement. (Matthews et al., 2010). African American males are already academically behind on the first day of school as compared to their White peers (Coley, 2011). This deficit continues through their education and by the fourth grade these public school students are scoring at an average of 28 percentage points below White boys in reading and math; this is almost a full point of standard deviation difference (NCES, 2009).

African American male students tend to view school as a hostile place from which they want to escape as compared to their peers (Kozol, 2012; Missouri Department of Education, 1978). At school, children are often lumped into a category by the way they appear, generally by race, and expectations are delved out accordingly (Missouri Department of Education 1978; Sorhagen, 2013). This causes African American boys and other neglected students to come to an impasse with the school system at some point, typically fairly early on, even at the elementary level (Missouri Department of Education, 1978; Sorhagen, 2013).

Most of the curriculum used today is still based on monocultural material, which is non-reflective of the deep heterogeneity of American urban and suburban schools (McIntosh, 2010). Effective curriculum is based on student experience, and the experience that many African American boys are having in school is less than positive or productive (Missouri Department of Education, 1978). High stakes test scores and the stress to move children forward who often enter school over a year behind (Phillips, Crouse, & Ralph, 1998) creates an environment of anxiety and dissatisfaction. Feelings

of anxiety and lack of control affect the male African American student and the school system to a disruptive degree. Minority students are given the lowest expectations (Kozol 2012; Persell, 1977), and the experiences of students are articulated by the low expectations placed on them (Ladd, 2012; Payne, 1984). African American male students get a sense that they are powerless in their environments, and their feelings of alienation come from their inability to effectively change their environment (Payne, 1984).

Chapter Summary

Chapter Two set out to explain the achievement gap and the various reasons researchers have posited that it exists. Many researchers agreed that African Americans as a group have not performed equally to Whites for centuries. However, these same researchers have debated the cause of these differences for a long time. The theories are broad and wide and spread across many fields of science. From biology to anthropology to psychology, researchers in these fields have debated about what the cause might be.

First, there were the early debates regarding genetic difference between races. These early researchers argued that the various races were biologically different, and therefore, the intelligence gap was innate and could not be changed by environmental factors. This ideology led to the eugenics movement and various other political movements throughout the years. Although this mindset does not leave one with hope, and was still rearing its head as recently as 1994 with the release of Hernstein and Murrays *The Bell Curve*, many have discredited these ideologies and have suggested other causes.

Next, the idea of test bias was discussed. Although many researchers have claimed that test bias no longer exists in most standardized tests, Jencks and Phillips (1998) and others argued that while some aspects of test bias have disappeared, others are still present. This debate tends to have the same poles as the genetics debate. Many hereditarians believe IQ tests and standardized test are completely free of bias and are valid (Jenson, 1980). Non-hereditarians argue that test biases show up in how tests are labeled, how they are used, or even how they might be administered (Jencks & Phillips 1998, Steele & Arronson 1995). Either way, many researchers no longer give a lot of credit to test bias being the primary cause of the achievement gap.

After heredity and test bias the discussion moved to a more in-depth focus on the school environment. Factors such as: school resources, school culture, school administration, the teacher, and pedagogy were taken into account. Research showed that teacher expectations and school administration could strongly effect academic achievement for African Americans. If school administration could create an environment where high achievement was expected and culture differences were valued, African Americans would be more likely to achieve. In addition, the research showed achievement was possible if teachers did not let their own personal biases get in the way, set high expectations for all students, and used culturally relevant pedagogy that bridged the gap between school and home.

After school factors, non-school factors including a history of turmoil and strife was presented. This discourse began by outlining a history of factors that left African Americans in a large educational debt (Ladson Billings, 2006). A long history of slavery, and inequality in this country caused African Americans to be behind when it came to

wealth, political power, and equal opportunities in society. Although this history of inequality is well documented, people tend to dismiss it, and expect that African Americans should be on an equal playing field, performing equally. This is just not the case; they have been playing catch up historically and many have not made it to equality.

Non-school related factors concluded with an explanation of the impact of social economic status and various social cultural theories. There is a plethora of research that connected socioeconomic status to student achievement. Most research shows that collectively low socioeconomic students perform worse than higher socioeconomic status students. Moreover, being in a low economic school environment also hindered academic achievement. Although this is true for White students and African American students, it appeared to be more prevalent with African Americans.
Socioeconomic status was not the only non-school factor discovered. When researchers control for socioeconomic status a large achievement between African Americans and Whites still exists. Researchers have suggested this is due to social and cultural differences between the two groups. Researchers such as John Ogbu, Claude Steele, Jason Osborne and many others have theorized that the difference in societal and cultural norms combined with continued stereotypes and power struggles have caused African Americans to internalize the stress and even rebel against it. This increased stress and rebellion has led to instances of underperforming, disidentifying, and a fear of "acting white".

While the achievement gap is a multifaceted problem that has existed for centuries, the research is not all bad. Many of the researchers cited wrote of successful students. All around the country there are teachers who are closing the gap and helping

African American students perform to their best ability. Surely, as Teresa Hill (2011) points out, hope is not lost and African Americans are still fighting for their chance at equality. Just as their history is filled with strife and turmoil, it is also sprinkled with stories of individuals taking charge of their own destiny and finding success no matter the cost.

By understanding the various layers of this problem, and recognizing when and where success has occurred, teachers and researchers will be able to better support African American students in their educational endeavors. That is why this research aims to investigate one key factor that might influence the achievement gap. Being educators, the researchers chose to focus on a school related factor. School climate is often mentioned as a factor that influences the achievement gap and is of interest to the researchers. Therefore, the researchers set out to investigate the potential relationship of the perception of school climate and the achievement gap, with an aim to add to the current research about the topic. Until the achievement gap is successfully closed scholars must continue to investigate every avenue looking for a solution.

Chapter 3: Methodology

Introduction

Chapter Three presents the methodology used to investigate if school climate perceptions differ between African American and White students and how those differences relate to academic achievement measured by the MAP test. In the district of this study 60 percent of White student are performing at proficient or advanced while only 38 percent of African American students are achieving at the same level (DESE, 2016). Research design, population and sample, sampling procedures, instrumentation, data collection, data analysis, and hypothesis testing are discussed.

Research Design

The research design was based on a non-experimental quantitative investigation. A causal comparative design was used to examine the relationship between the independent variable, student perception, as measured by the District Climate Survey, and the dependent variable, academic achievement as measured by the Missouri Assessment Program test (MAP). A causal comparison method was used because multiple groups were investigated. Creswell and Clark (2015) suggested that when categorical variables are used, this method should be applied. A copy of the survey is Appendix A. The MAP data were gathered through the Missouri Department of Education website. MAP and survey data were obtained with permission from the administration office of the school district.

Population and Sample

The sample is defined as Missouri elementary third through fifth grades students in an inner-ring suburban school district in the Saint Louis area during the 2015-2016 academic school year. The school district consisted of approximately 6000 students pre-

kindergarten through twelfth grade. Approximately 1500 students were enrolled in the third through fifth grades across the six elementary schools. 1053 students of the 1500 (70%) completed the District Climate Survey and 1,496 of the 1502 (99.6%) completed the MAP test.

The 1053 respondent surveys were filtered down to 558 students by selecting respondents to those who identified as African American or Caucasian male and females. Students selecting racial categories of other, Asian, Hispanic or multicultural were not used in this analysis. This data set of 558 students was 39 percent White, 61 percent African American, 52 percent male and 48 percent female. The percentage of free and reduced lunch within the district was about 79 percent.

Building Demographics				
Building	3-5 Population Number, Percent	African American	White	Free and Reduced Lunch
School 1	254	98, 39%	79, 31%	72%
3rd	97, 38%	39, 40%	30, 31%	67, 69%
4th	80, 32%	30, 38%	24, 30%	62, 78%
5th	77, 30%	29, 38%	25, 32%	55, 71%
School 2	253	36%	37%	72%
3rd	96, 38%	41, 43%	31, 32%	70, 73%
4th	85, 34%,	27, 32%	36, 42%	62, 73%
5th	72, 28%	23, 32%	27, 38%	50, 69%
School 3	269	45%	23%	100%
3rd	92, 34%	37, 40%	21, 23%	92, 100%
4th	93, 35%	41, 44%	19, 20%	93, 100%
5th	84, 31%	42, 50%	22, 26%	84, 100%
School 4	233	33%	35%	85%
3rd	91, 39%	30, 33%	29, 32%	76, 84%
4th	77, 33%	29, 38%	22, 29%	65, 84%
5th	65, 28%	19, 29%	30, 46%	55, 85%
School 5	250	40%	31%	77%
3rd	81, 32%	35, 43%	23, 28%	59, 73%
4th	89, 36%	29, 33%	37, 42%	68, 76%
5th	77, 31%	35, 45%	18, 23%	65, 84%
School 6	243	38%	40%	71%
3rd	81, 33%	28, 35%	40, 49%	58, 72%
4th	88, 36%	36, 41%	26, 29%	62, 70%
5th	74, 30%	28, 38%	32, 43%	52, 70%

Table 3.1: Building Demographics. The number represents the total number of students, and the percentage represents the percentage that group is of the whole.

The study used a purposeful and convenient sampling method (Clark & Creswell, 2015). That is, the district and students used had significant meaning to the researchers. First, one researcher worked in the researched school district. Second, both researchers had specific interests in understanding why African American students in the district were not performing as well as the White students. Finally, the researchers were interested in this specific age group.

Instrumentation

There were two instruments utilized in this study. First was the District School Climate Student Survey. Second was the MAP test (Communication Arts and Mathematics). These two instruments are described in the following subsections.

District School Climate Survey.

The District School Climate survey is administered biennially to all third through twelfth grade students. The survey is completed on a voluntary basis but class time is given to complete it. The survey is designed after the Missouri Advanced Questionnaire (AQ) that is administered by the Missouri Department of Education during the Missouri School Improvement Program (MSIP) review. According to Dr. Keith Jamtgaard, from the University of Missouri, Columbia, the AQ was developed by a group of professionals as a tool to identify which school process variables have the strongest correlation with student achievement (K. Jamtgaard, personal communication, Oct. 2016). The AQ was first administered in 1990 and has undergone many revisions since then. In its current form it is heavily based on the works of Marzano, Pickering and Pollock (K. Jamtgaard, personal communication, Oct. 2016). Julie Hahn the school district's assessment

coordinator said the district already had to complete this survey for their review so they adopted it as an internal instrument to use regularly (J. Hahn, personal communication, Aug. 2016).

The District Climate Survey has an elementary, middle and high school version, as well as a teacher version, and parent version. The survey asks some demographic information and then a variety of Likert scale responses regarding various aspects of school climate. The elementary school version consists of 31 Likert scale questions with 5 responses ranging from strongly agree to strongly disagree. One question was omitted because it was asked in reverse and it did not test as reliable. Students, parents, and teachers complete the survey electronically.

The District Climate Survey items were categorized into one of the four National School Climate Centers' four dimensions: safety (1), teaching and learning (12), interpersonal relationships (9), and institutional environment (8) (National School Climate Council, 2007). After the items were categorized, responses from each category were tabulated. Responses were assigned a numerical representation. The numbers were 1-5, 1 for a strong negative answer 2 for a negative answer, 3 for a neutral answer, 4 for a positive answer and 5 for a strong positive answer. Individual responses were totaled for each category and group means were established for each category. See table 3.5 for questions and which category they were assigned. See Appendix A for actual survey

District Climate Survey Prompts	Category	CronBach's Alpha
I like this school In my school all students are given a chance to succeed I know what I am supposed to be learning in my classes The community is proud of this school I feel very good work is expected at my school Discipline is handled fairly in my school I am proud to go to school in *this district* I have been encouraged to think about career or educational goals at school	Institutional	.86
When I am at school, I feel I belong My teachers treat me with respect Teachers in my school really care about me If I have a personal problem, I can talk to the counselor Students are treated fairly by teachers Students at my school treat me with respect Students at my school are friendly I have support for learning at home My family believes I can do well in school	Interpersonal	.82
When I am at school, I feel I have fun learning I enjoy reading I learn a lot in this school When I am at school, I feel I have choices in what I learn My teachers think I will be successful I set goals in school My teacher is a good teacher My teacher believes I can learn The work I do in class makes me think I can do well in school My counselor makes visits to the classroom to teach about careers I use technology in the classroom	Teaching	.84
When I am at school, I feel I am safe	Safety	NA

Table 3.2: Reliability Measurements. Cronbach Alpha score for each group

Missouri Assessment Program Test.

The second instrument utilized was the MAP test. The MAP test is a standardized, criterion-referenced test administered annually to all third through twelfth grade public school students. The MAP test is administered in the spring of every school year. It consists of a communication arts component, mathematics component and science component. However, since third and fourth grade students do not take the science portion, it was not utilized in this study. The test is comprised of multiple testing formats including: selected response, constructed response, and performance events. School districts are given a four-week window to administer all sections of the test. Each subject test is graded and marked as either below basic, basic, proficient, or advanced. Students receiving a score of proficient or advanced are considered to be at or above grade level expectations.

These results were utilized to establish group mean scores for each of the various groups. First, individual grade level means were calculated for third through fifth grade students at each building and as a whole district. Second, racial group means were calculated by building, district, and grade level.

Reliability and Validity.

Validity, in terms of an assessment, refers to the degree to which the assessment actually measures what it is designed to measure (Newton, 2012). In an effort to make the MAP test valid, creators worked by grade level and completed field tests per each question. Based on the results of field tests, the questions on the MAP were kept, altered, or discarded. The creating company, McGraw-Hill, recognizes in their annual technical report that any influence of bias based on culture, race, gender, ethnicity and socio-

economic status must be eliminated (McGraw-Hill, 2015). There should be minimal bias for or against any group in the test question. Very few questions on final versions of the MAP have been found to give an unfair bias toward a cultural group through differential item functioning tests, and none of the questions were altered after being reviewed by McGraw-Hill (Schafer, 2002). The final area of validity is based on how the results are interpreted, which is up to each district, teacher, and parent (Elder, 1997). One independent evaluator found the MAP validity to be both "reasonable" and "appropriate" when compared to the field of assessment programs (Schafer, 2002, p. 14). According to the 2015 MAP technical report, the 20014-2015 MAP test was found to be both valid and reliable (McGraw-Hill, 2015). Utilizing a variety of statistical measures the evaluators found high construct validity and reliability scores on all sections of the test. In fact, Cronbach Alpha scores ranged from .87 to .91 throughout the ELA and Math sections (McGraw-Hill, 2015).

The Missouri AQ has also been found to be reliable and valid. The survey has gone through many transformations over the years. Along the way many experts have come together to evaluate each question. In addition, it has been field tested many times and each variation has passed validation and reliability tests (K. Jantaard personal communication, Oct. 2016). The questions were grouped together and put through a reliability test. Three of the categories (institutional, interpersonal, teaching and learning) were all found to have a Cronbach Alpha score of .82 or better, see table 3.5. This means that the questions in each category are statistically related and have good reliability. The fourth category of safety only had one question and therefore could not be tested.

However, the question used has been shown to be reliable and valid by the Office of Social and Economic Data Analysis. (K. Jamtgaard personal communication, Oct. 2016). In addition, Dr. Jamtgaard stated that a variety of experts have been used over the years to insure content validity of this questionnaire.

Data Collection

Data collection started with a proposal for study submitted to the University of Missouri St. Louis's Institutional Review Board. An expedited review was requested because the data was previously collected and no identifiable data was utilized. Once the University of Missouri St. Louis's Institutional Review Board approved the proposal, data collection began.

The process started by contacting the administration team of the district. The data coordinator assisted in the acquisition of data files related to the School Climate Survey data for third through fifth grade students for the 2015-2016 school year. The survey was administered electronically in October 2015 and was voluntary. Students were given class time to complete the survey. The district data coordinator sent out email reminders until she had a large enough sample completed for each building. The district stored all the results on the district server. Once the files were obtained the data was disaggregated and analyzed to answer the research questions. Next the data coordinator granted access to the MAP data. This data was also disaggregated and analyzed to answer the research questions. Finally, relationships between the two instruments were analyzed.

	Survey Respondents				
School	Total completed and total for study	African American Males	African American Females	Caucasian Males	Caucasian Females
School 1	143/ 69	28	20	14	7
School 2	185/ 87	30	35	8	14
School 3	115/ 72	26	30	10	6
School 4	166/ 87	21	25	25	16
School 5	213/ 85	24	25	17	19
School 6	231/ 158	47	32	40	39
Total	1053/ 558	176	167	114	101

Table 3.3: Survey Respondents. This table shows the total number of respondents for each building and the total number of African American and Caucasian students by gender.

Data Analysis

A causal comparison method was used in order to investigate group differences and relationships between school climate and student achievement. To answer the research questions a variety of tests were used. An ANOVA, a MANOVA a T-test, a percentile comparison analysis and a linear regression test were all used to evaluate the data.

RQ 1. How do perceptions of elementary school climate differ between African American and Caucasian elementary students in the same school district?

H 1. There will be no statistically significant difference in perception of school climate between surveyed African American and Caucasian elementary students.

To test this hypothesis, a T test, an ANOVA test, and a percentile comparison analysis was used to compare the results of African American perception data and White perception data. The climate data was analyzed at the district and school levels. Also, the climate data was analyzed as a total score, and scores for each of the four sub categories to identify where and significant differences might exist. The MANOVA was used when the four sub categories of climate were used as four different variables

RQ 2. How do African American elementary school boys perceive school climate compared to other elementary aged groups in the same school district?

H 2 There will be no significant difference in school climate perception between African American elementary school boys and other elementary aged student groups within the same school district.

To investigate this question a MANOVA, T-tests and percentile comparison tests were used to compare African American boys to the rest of the sampled population and to both White male and female elementary students. These tests evaluated the aspects from a variety of angles.

RQ 3. What relationships exist between perceptions of elementary school climate and Missouri Assessment Program test scores?

H 3. There will be no significant relationship between perception of school climate as calculated by the district climate survey and academic achievement as calculated by the MAP test scores.

To investigate the relationship between school climate and academic achievement a linear regression test was calculated between the mean results of each school climate survey by race and each of the MAP subject tests.

Limitations

In every study there are elements of the investigation that the researcher cannot control (Lunnenberg & Irgby, 2008; Clark & Creswell, 2015). The following limitations were identified in this study:

1. The sample size was small
2. The sample was convenient and not random so generalizability is limited

3. Survey data was self-reported and trusted to be accurate
4. The researcher did not control the test taking or survey environments
5. Individuals categorized themselves by race
6. The utilization of mean group scores cannot be generalized to an individual
7. This quantitative methodology cannot control all variables.
8. Correlation studies do not show causation
9. Survey respondents were not racially reflective of the district. The respondents were heavily African American even though the district is not.
10. Elementary students did not recognize the word Caucasian as meaning White.

Chapter Summary

The aim of this research was to gain an increased understanding of the achievement gap between African American and White students. First prominent theories of the achievement gap were explored. Then the research was narrowed to focus on school climate perception and its relationship to academic achievement. To investigate this relationship a causal comparative design was used. A causal comparative design was used because the investigation required the comparison of two groups.

In order to make this comparison a district provided climate survey was analyzed. This survey is based on the Missouri AQ climate survey. This Missouri AQ has been given for years as part of the MSIP review process. The survey has been found to be reliable and valid. Results from this survey were disaggregated by race and gender. A T-test, a MANOVA test and percentile comparisons were used to find if significant or notable differences existed between various groups.

Finally, linear regression tests were used to see if there was a relationship between perceptions of school climate and academic performance. The MAP test was used to assess academic performance. Therefore, group mean scores of MAP data and climate data were analyzed using a linear regression test.

Chapter Four

The last three chapters presented the problem, detailed the research questions, reviewed the existing literature about the causes of the achievement gap, identified the methodology of this research and outlined the statistical analysis used to address the research questions. Chapter Four presents the results for each of the approaches used to investigate the research questions. First, the various tests and investigation techniques are summarized. Next, each question is presented and the corresponding test results are discussed. The chapter concludes with a summary of the major findings presented in this chapter.

Research Questions

RQ 1. How do perceptions of elementary school climate differ between African American and Caucasian elementary students in the same school district?

H 1. There will be no statistically significant difference in perception of school climate between surveyed African American and Caucasian elementary students.

RQ 2. How do African American elementary school boys perceive school climate compared to other elementary aged groups in the same school district?

H 2. There will be no significant difference in school climate perception between African American elementary school boys and other elementary aged student groups within the same school district.

RQ 3. What relationships exist between perceptions of elementary school climate and Missouri Assessment Program test scores?

H 3. There will be no significant relationship between perception of school climate as calculated by the district climate survey and academic achievement as calculated by the MAP test scores.

Data Analysis

In order to investigate each question different tests were utilized. To answer Question One and Question Two, a combination of significance tests, i.e., ANOVA, MANOVA and T-test, and percentile comparison tests were used to determine if there was a difference in ethnic perceptions of school climate. Perceptions were evaluated by climate totals, category totals, and by independent questions. Questions three was answered by using a linear regression test to evaluate if any relationship existed between school climate and MAP test results.

Significance Tests

For question one, an ANOVA, a MANOVA and unpaired T-Tests were used to determine if there were statistical differences between various groups. A Univariate ANOVA test was used to determine if there were significant variations between the dependent variable (DV) total climate score and the independent variables (IV) of building, gender, and ethnicity. This test looked for both main effects and interactive effects. The test was conducted using the total climate score calculated for each respondent.

A MANOVA was used to determine if there were any significant differences between multiple DV's and IV's. For the MANOVA total climate was broken down into four climate categories, Institutional Environment, Interpersonal Relationships, Safety, and Teaching and Learning and these categories were used as dependent variables

(DV). The independent variables (IV) were again gender, building, and ethnicity. This test was conducted using the categorical average score for each respondent for each of the four categories of school climate.

Because the ANOVA showed significant differences existed with certain combinations of DV and IV's, T-tests were used to analyze ethnicity differences at the building level. African American and Caucasian climate sub category scale averages were compared at the building level for each respondent. The combination of these three statistical analyses provided a thorough picture to interpret how ethnic perceptions of school climate might differ within the school district.

In order to answer Research Question Two, a T-test was performed to see if African American Male climate scores differed significantly from the rest of the surveyed population. This test along with the gender results from the MANOVA and Univariate ANOVA provided the evidence needed to determine if there was a significant difference in school climate perceptions among African American males and the rest of the respondent population.

Percentile Comparison

One group of numbers examined for this research was a percentile comparison of student responses to the climate survey divided between students who identified as African American and those who identified as Caucasian. The responses were also divided by gender and examined. This allowed for African American males to be specifically compared to African American female and both genders of Caucasian students. This was done to give very clear delineation between identified races. In calculating percentages of positive and negative responses to the prompts, the neutral

category was removed leaving the responses of agree, strongly agree, disagree, and strongly disagree to be scored. Studies around Likert Scales suggest that students who really do feel neutral should have access to the neutral category (Schuman & Presser, 1981). However, since it cannot be known why students chose the neutral category, it has not been categorized as positive or negative, which were the parameters of the percentiles for this analysis. Some research has shown that responders of neutral do not have a strong positive or negative feeling about a question or prompt (Weijters, Cabooter, & Schillewaert, 2010). In this case the neutral was removed as this portion of the study looks to identify the negative and the positive and not a neutral stance to the prompts.

For this analysis, certain parameters were established to identify areas worth discussing. First, prompts that resulted in under a 70 percent positive response rate were noted. Second, prompts that elicited a negative response above 10 percent were noted. Finally, questions where the various groups differed by 10 percentage points were discussed. Though these findings do not show statistical significance, they highlight trends in variances that could lead to further research on climate perceptions.

Regression

For Question Three, a linear regression test was used to examine the relationship between school climate and MAP test results. Climate data was analyzed against Math MAP and ELA MAP results. The regression analysis was completed first utilizing the overall climate score for each grade level at each building to see if a significant relationship existed with either MAP test. Then, each categorical average for each grade level at each building was used to identify if any category had a significant relationship to either MAP test.

Climate Perceptions

RQ 1. How do perceptions of elementary school climate differ between African American and Caucasian elementary students in the same school district?

Answering research question one began by evaluating the total school climate data with a Univariate ANOVA. This was done by importing mean total climate data for each respondent from Excel into SPSS. Next, a Univariate test was selected. Total school climate was entered as the dependent variable (DV) and gender, building and ethnicity were all entered as independent variables (IV). The test was looked for both main effects and interaction effects on the dependent variable. Table 4.1 displays the number of survey respondents by building, gender and ethnicity.

Survey Respondent Breakdown

		Value Label	N
Building	1	Building 1	69
	2	Building 2	87
	3	Building 3	72
	4	Building 4	87
	5	Building 5	85
	6	Building 6	158
Ethnicity	1	African-American	343
	2	Caucasian	215
Gender	1	Female	268
	2	Male	290

Table 4.1 Shows the demographic breakdown of the survey respondents used to determine climate differences between African American and Caucasian students.

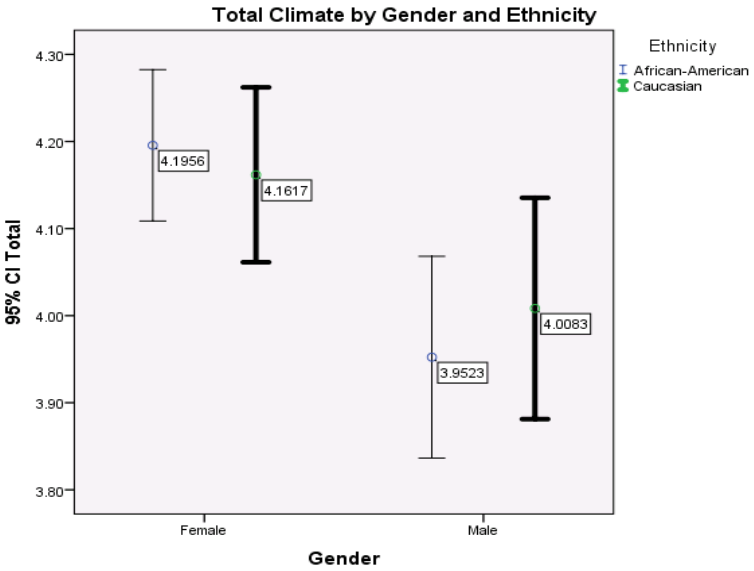

Figure 4.1: This graph shows the difference in total climate means by gender and ethnicity

Table 4.2 shows, SPSS calculated a significant difference with an alpha of .05 for the main effect of building (P=.001), gender

(P=.002), and for an interaction effect of building and ethnicity (P=.035). In other words, the answers varied enough in these categories to be considered significantly different. The main effect of ethnicity was not significant (P=.564) nor were any of the other interaction effects.

The presence of significant findings indicated the need for deeper analysis of the data. Therefore, the building, gender and building with ethnicity effects were evaluated further. This evaluation showed that the mean scores of the building total climate ranged from 3.90 (building 5) to 4.29 (building 2). It also showed that gender total climate scores ranged from 3.99 (male) to 4.19 (female). Finally, it showed that all the ethnicity scores vary within each building, with building 5 having a significant difference between the two ethnicities.

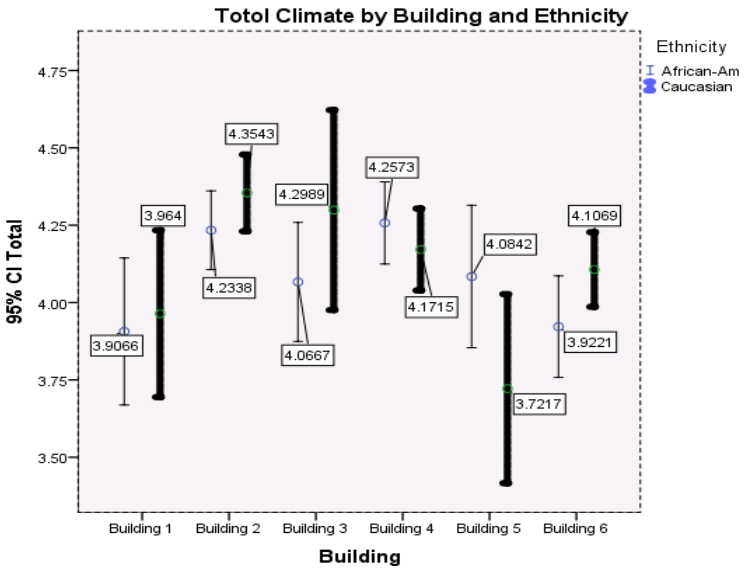

Figure 4.2: Building break down of total climate by ethnicity.

The Univariate ANOVA confirmed that there were some significant differences in climate perceptions when the dependent variable of total climate was compared to the independent variables of building, gender, and ethnicity within buildings. Although not statistically significant, the data also showed that African American perception tended to be more negative on average across the district.

Tests of Between-Subjects Effects

Dependent Variable: Total Climate

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	24.620[a]	23	1.070	2.594	.000	.101	59.673	1.000
Intercept	6982.108	1	6982.108	16922.783	.000	.969	16922.783	1.000
Buildingrecode	8.896	5	1.779	4.312	.001	.039	21.562	.965
EthnicityRecode	.137	1	.137	.333	.564	.001	.333	.089
Genderrecode	4.036	1	4.036	9.781	.002	.018	9.781	.877
Buildingrecode * EthnicityRecode	4.976	5	.995	2.412	.035	.022	12.060	.766
Buildingrecode * Genderrecode	2.057	5	.411	.997	.419	.009	4.986	.358
EthnicityRecode * Genderrecode	.020	1	.020	.048	.827	.000	.048	.055
Buildingrecode * EthnicityRecode * Genderrecode	2.015	5	.403	.977	.431	.009	4.885	.351
Error	220.321	534	.413					
Total	9508.354	558						
Corrected Total	244.941	557						

a. R Squared = .101 (Adjusted R Squared = .062) b. Computed using alpha = .05

Table 4.2 shows the statistical results for all main and integration effects on the total climate

After analyzing the total climate data with the Univariate ANOVA, a MANOVA was used to compare the dependent variables (DV) of Institutional Environment, Interpersonal Relationships, Safety, and Teaching and Learning with the independent variables (IV) of building, gender, and ethnicity. The test was performed to evaluate if there were any significant differences between the various climate categories and the different independent variables. To perform the test, the DV data and IV data were put into SPSS. A multivariate analysis test was chosen and pairwise comparisons were added along with various plots and post hoc tests. Wilks' Lambda test was used to test for significance.

The initial multivariate test indicated significance for one main effect and variations worth investigating for one main effect and one interaction effect. First Wilks' Lambda showed a significance score of (P=.002) across the four dependent variables for building differences. This indicates that perception scores across the buildings differ significantly in regards to the four dependent variables. Next, the main effect of gender was calculated at P=.063 by the Wilks' Lambda test. Although this result is not statistically significant at an alpha of .05 the results indicate that the question is worth investigating further with a larger sample size. The main effect of ethnicity was not considered significant (P=.875). However, the interaction effect of building with ethnicity had a Wilks' Lambda score of (P=.065) and although not statistically significant warrant further investigation due to the small sample size. Table 4.3 shows the multivariate results for all the main and interaction effects.

Multivariate Results

Effect	Test	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[d]
Building	Wilks' Lambda	.922	2.184	20.000	1758.761	.002	.020	36.136	.979
Ethnicity	Wilks' Lambda	.998	.305[b]	4.000	530.000	.875	.002	1.219	.118
Gender	Wilks' Lambda	.983	2.242[b]	4.000	530.000	.063	.017	8.967	.657
Building* Ethnicity	Wilks' Lambda	.945	1.520	20.000	1758.761	.065	.014	25.163	.882
Building* Gender	Wilks' Lambda	.971	.797	20.000	1758.761	.720	.007	13.205	.535
Ethnicity* Gender	Wilks' Lambda	.991	1.206[b]	4.000	530.000	.307	.009	4.822	.380
Building* Ethnicity* Gender	Wilks' Lambda	.963	1.007	20.000	1758.761	.451	.009	16.676	.667

Table 4.3: Wilk's Lambda results for the various effects tested

After the overview of the multivariate tests, SPSS provided a breakdown of the between subjects tests which provided more information about various relationships between the independent variables and the dependent variables. These tests showed various situations where individual climate categories or dependent variables had significant variation levels pertaining to certain independent variables or combination of independent variables. Table 4.4 provides the results of the between subject tests and indicates the need to look deeper into the dependent variables. Each of the climate category results will be discussed in its own section.

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[e]
Buildingrecode	Institutional	10.006	5	2.001	3.670	.003	.033	18.352	.929
	Interpersonal	13.038	5	2.608	5.301	.000	.047	26.503	.989
	Safety	23.678	5	4.736	3.439	.005	.031	17.196	.911
	Teaching	6.351	5	1.270	3.028	.010	.028	15.142	.866
EthnicityRecode	Institutional	.024	1	.024	.045	.833	.000	.045	.055
	Interpersonal	.242	1	.242	.492	.483	.001	.492	.108
	Safety	.593	1	.593	.431	.512	.001	.431	.100
	Teaching	.014	1	.014	.034	.854	.000	.034	.054
Genderrecode	Institutional	4.769	1	4.769	8.747	.003	.016	8.747	.839
	Interpersonal	3.118	1	3.118	6.337	.012	.012	6.337	.710
	Safety	3.181	1	3.181	2.310	.129	.004	2.310	.329
	Teaching	3.083	1	3.083	7.350	.007	.014	7.350	.772
Buildingrecode * EthnicityRecode	Institutional	7.574	5	1.515	2.779	.017	.025	13.893	.831
	Interpersonal	7.524	5	1.505	3.059	.010	.028	15.295	.870
	Safety	10.329	5	2.066	1.500	.188	.014	7.501	.528
	Teaching	5.208	5	1.042	2.483	.031	.023	12.417	.780
Buildingrecode * Genderrecode	Institutional	1.427	5	.285	.524	.759	.005	2.618	.195
	Interpersonal	3.109	5	.622	1.264	.278	.012	6.320	.450
	Safety	.991	5	.198	.144	.982	.001	.720	.083
	Teaching	1.741	5	.348	.830	.529	.008	4.151	.299
EthnicityRecode * Genderrecode	Institutional	.002	1	.002	.004	.951	.000	.004	.050
	Interpersonal	.048	1	.048	.097	.756	.000	.097	.061
	Safety	3.667	1	3.667	2.663	.103	.005	2.663	.370
	Teaching	.003	1	.003	.008	.928	.000	.008	.051
Buildingrecode * EthnicityRecode * Genderrecode	Institutional	1.875	5	.375	.688	.633	.006	3.439	.250
	Interpersonal	1.950	5	.390	.793	.555	.007	3.964	.286
	Safety	3.397	5	.679	.493	.781	.005	2.467	.185
	Teaching	3.012	5	.602	1.436	.210	.013	7.180	.508

a. R Squared = .087 (Adjusted R Squared = .047) b. R Squared = .100 (Adjusted R Squared = .061)

c. R Squared = .062 (Adjusted R Squared = .021) d. R Squared = .096 (Adjusted R Squared = .057)

e. Computed using alpha = .05

Table 4.4: This table shows the significance of various interaction effects

Climate Categories

Since the MANOVA demonstrated that the different climate categories responses were statistically different across various independent variables, they will each be discussed independently. Each category discussion will highlight significant results as well as discuss the building level t-tests and percentage comparison analysis that was conducted concerning each category. The categories will be discussed in alphabetical order starting with institutional environment and ending with teaching and learning.

Institutional Environment.

The first category analyzed thoroughly was Institutional Environment. Starting with the main effect of building this category had a significance value of P=.003. This indicates that there was a significant variation of institutional environment scores across the six buildings. The mean scores ranged from 3.95 (building 5) to 4.33 (building 2). While some buildings were more similar and others more different, across the district they were considered significantly different. Refer to Appendix B for building level comparisons across the four categories.

When looking at the whole district, as noted earlier the main effect of ethnicity did not have a significant difference. The mean score for African Americans was 4.15 and the mean score for Caucasians was 4.16. The African American group scored one hundredth of a point lower which was not a significant difference (P=.833). See Appendix C for ethnicity pairwise comparisons across climate categories. While ethnicity did not matter at the district level for this category, there were some significant findings at the building level. These findings will be discussed later.

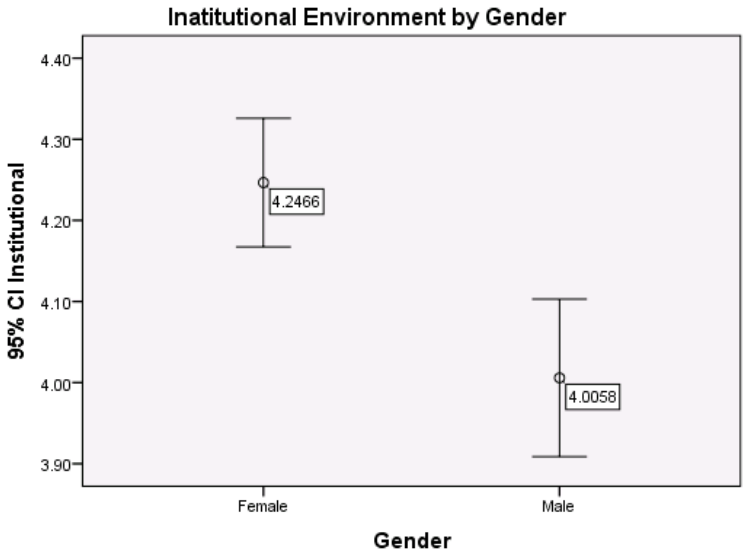

Figure 4.3: Institutional Mean difference across the district

Next the main effect of gender was evaluated. Gender across the four dependent variables had no significant difference with a P value of .063. However, when looking at just the institutional environment category the gender difference is considered significant with a score of P=.003. The female mean score was 4.26 and the male mean score was 4.05. This indicates that males across the district responded more negative in this category than females.

After each main effect was considered, interaction effects were evaluated. The first of these was the interaction effect of building and ethnicity. When evaluating across all four dependent variables the interaction effect was considered not significant with a score of P=.065. However, when looking at just the institutional environment category, there were different effects at the building level when considering ethnicity. Across the six buildings African American mean scores ranged from 3.96 (building

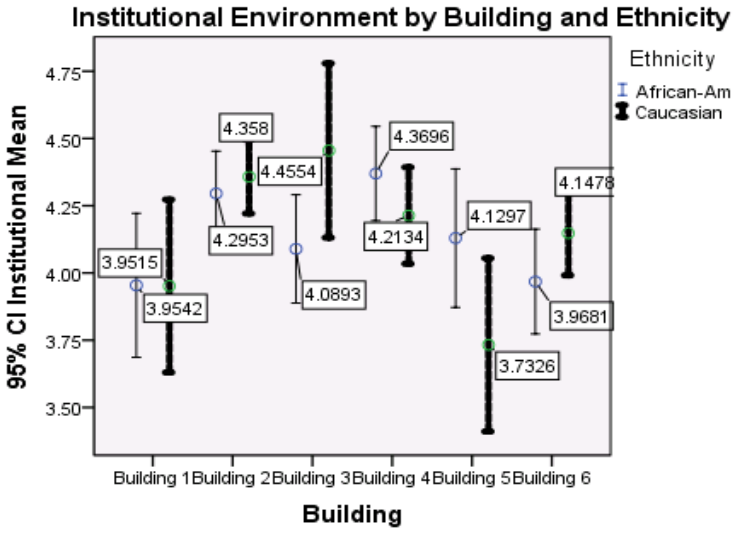

Figure 4.4: Shows the 95 percent confidence interval fir each ethnicity at each building

1) to 4.37 (building 4). White mean scores ranged from 3.72 (building 5) to 4.46 (building 3). Within this category buildings one, two, four and six did not have significant difference between ethnicities. Although building three did not have a significant difference, its P value of .074 was worth noting. Building five had a significant difference with a value of P=.004. Building three's difference was because Whites had a .385 higher mean score. Building five's significant difference was based on African American students having a .467 higher mean score. This demonstrates that although there is not a significant difference regarding ethnicity at the district level, each building has its own unique student perception of climate.

The combination of building and gender was evaluated next. It was noted that there is a significant difference between males and females across the district when looking at the institutional environment category. This test indicates any significant interaction effects between the building and gender. In all buildings, females answered more positively than males. There was a range of mean differences from .052 at building two to .429 at building five. Building five's difference was considered significant for an interaction effect with a P value of .009. Therefore, while most of the buildings did not impact the gender effect, building five did. Refer to building by gender pairwise comparison in Appendix D for specific results.

Next, the interaction effect of gender and ethnicity was evaluated. The earlier tests already reported that gender had a significant effect and that ethnicity did not. This test examined if the combination of the two have a different effect. The test indicated that African American female mean score for this category was 4.25 and African American Male mean score was 4.04. Similarly, Caucasian female mean score was 4.27

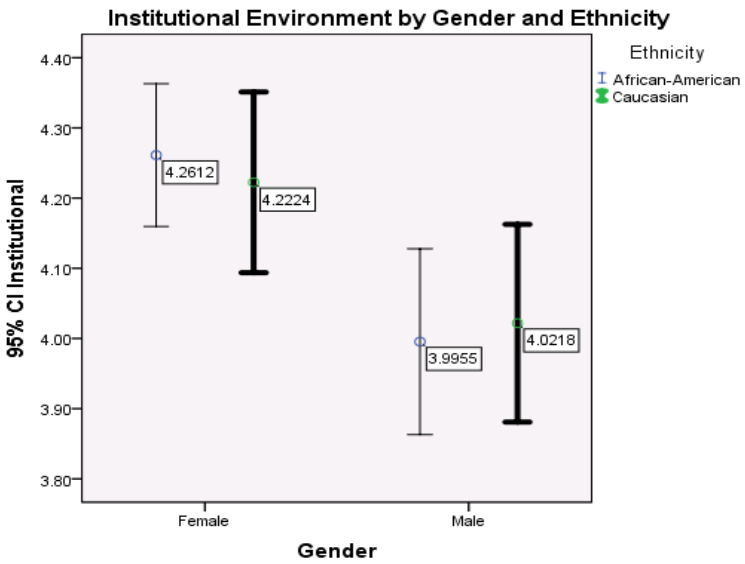

Figure 4.5: Shows the 95 percent confidence interval comparisons for gender by ethnicity

and their male mean score was 4.05. There was a -.20 mean difference between African American females and Caucasian females that was statistically not significant (P=.853). Likewise, African American males only differed from Caucasian males by -.011 and this difference also was not statistically significant (P=.912). Therefore, ethnicity did not appear to compound the already stated gender difference.

The last interaction effect output examined the combination of building, gender, and ethnicity. Independently building and gender had significant effects. When combined together there were three combinations that had significant effects. The first was the combination of building 3, males, and ethnicity. This interaction was significant at P=.043. The next was the combination of building 5, females, and ethnicity with a significance score of P= .50. Lastly, the combination of building 5, males, and ethnicity was also significant with a score of P=.038. This indicates that for these three occurrences ethnicity impacted the gender results at the building level for the institutional environment category.

In addition to the MANOVA, independent T-tests were run to see if there were significant differences between African American students and Caucasian students at the building level for each climate category. For the category of institutional environment

there were only two incidences that were worth discussing. First, building three had a mean difference of .366 leading to a value of P= .078. In addition to building three, building 5 has an almost significant result with a mean difference of .397 and a value of P= .053. These results are inline with the MANOVA.

Finally, to complete the analysis of the institutional environment, the percentile comparison procedure was performed. This analysis found that African American and Caucasian students were fairly equal in their responses. African Americans responses were positive 78 percent of the time, while Caucasian responses were positive 76 percent of the time. Also, African American responses were negative nine percent of the time compared to Caucasian responses that were negative eight percent of the time.

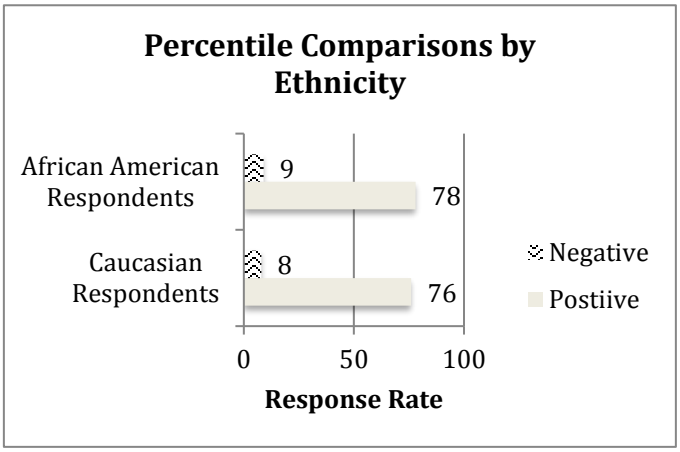

Figure 4.6: Percent of African American and Caucasian students who responded positively and negatively in the institutional environment category.

Institutional Prompt Responses by Ethnicity				
	African American Positive	African American Negative	Caucasian Positive	Caucasian Negative
I like this school	76%	13%	76%	8%
In my school all students are given a chance to succeed	82%	9%	80%	7%
I know what I am supposed to be learning in my classes	83%	5%	82%	3%
The community is proud of this school	71%	8%	72%	7%
I feel very good work is expected at my school	82%	7%	78%	8%
*****Discipline is handled fairly	65%	15%	63%	17%
I am proud to go to school	80%	7%	78%	8%
I have been encouraged to think about career or educational goals at school	81%	6%	77%	8%

Table 4.5: School Climate questions in the category of institutional environment as answered positively and negatively by each demographic.

* Categories met requirement as interesting finding and will be discussed in Chapter Five.

Interpersonal Relationships

The next subcategory evaluated was the category of Interpersonal Relationships. Starting with the main effect of buildings, this category had a significance of P=.000. This indicates that there was a significant variation of interpersonal relationship scores across the six buildings. The mean scores ranged from 3.81 (building 5) to 4.29 (building 2). While some buildings were more similar and others more different, they collectively were considered significantly different. Refer to Appendix B for building level comparisons across the four categories.

When looking at the whole district, as noted earlier, the main effect of ethnicity did not have a significant difference. The mean score for African Americans was 4.04 and the mean score for Caucasians was 4.09. The African American group scored only five hundredths of a point lower, which was not a significant difference (P=.483). See Appendix C for ethnicity pairwise comparisons across climate categories. While ethnicity did not matter at the district level for this category, there were some significant findings at the building level. These findings will be discussed later.

Next, the main effect of gender was evaluated. Gender across the four dependent variables had a difference of P= .063. However,

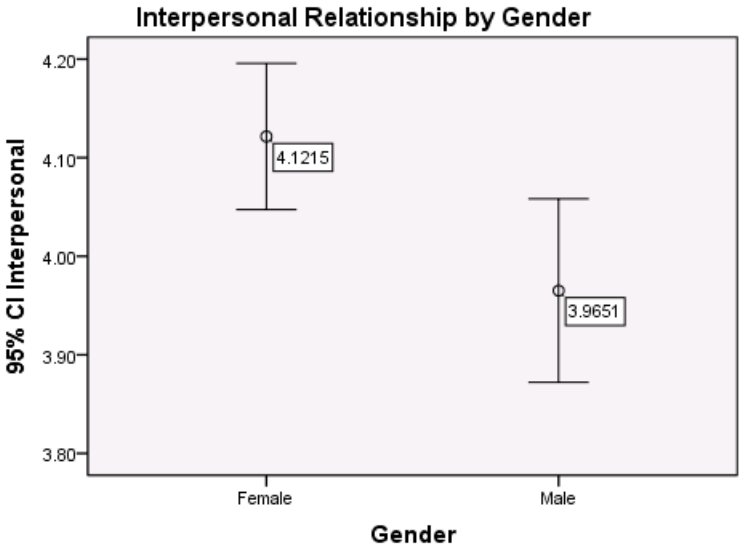

Figure 4.7: Ninety-five percent confidence interval for interpersonal relationship by gender

when looking at just the interpersonal relationship category the gender difference is considered significant with a score of P=.012. The female mean score was 4.15 and the male mean score was 3.98. This indicates that males across the district responded more negative in this category than females.

After each main effect was considered, interaction effects were evaluated. The first of these was the interaction effect of building and ethnicity. When evaluating across all four dependent variables the interaction effect was considered not significant with a score of .065. However, when looking at just the interpersonal relationships category, there were different effects at the building level when considering ethnicity. Across the six buildings African American mean scores ranged from 3.83 (building 6) to 4.21 (building 4). Caucasian mean scores ranged from 3.57 (building 5) to 4.38 (building 2). Within this category buildings one, two, three, and four did not have significant difference between ethnicities. However, buildings five and six recorded significant differences between the two groups. Building five's significant (P=.002) difference was because African Americans had a .473 higher mean score. Building six's significant (P=.038) difference was based on African American students having a .234 lower mean score. This demonstrates that although

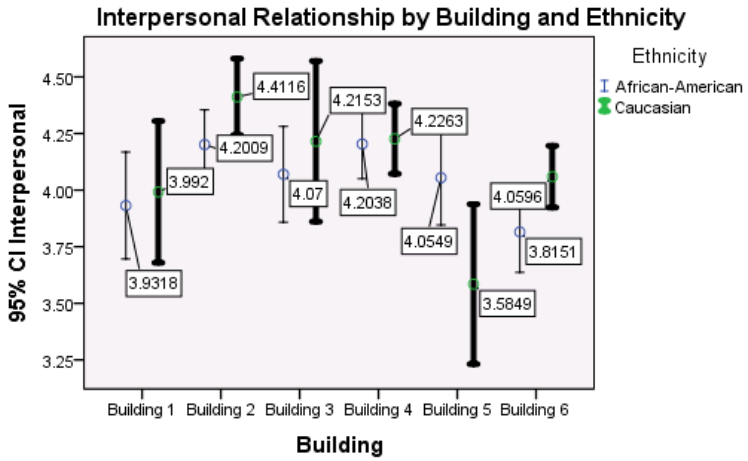

Figure 4.8: Ninety-five percent Confidence interval for interpersonal relationships by building and ethnicity.

there is not a significant difference regarding ethnicity at the district level, each building has its own unique climate.

The combination of building and gender was evaluated next. It was already noted that there is a significant difference between males and females across the district when looking at the interpersonal relationship category. This test investigated if there were any significant interaction effects between the building and gender. In all but one building, females answered more positively than males (building 4). There was a range of mean differences from .004 at building four to .428 at building five. Building five's difference was considered significant for an interaction effect with a P value of .006. Therefore, while most of the buildings did not impact the gender effect, building five did. Refer to building by gender pairwise comparison in Appendix D for specific results.

Next, the interaction effect of gender and ethnicity was evaluated. The earlier tests already reported that gender had a significant effect and that ethnicity did not. This test examined if the combination of the two have a different effect. The test indicated that African American female mean score for this category was 4.12 and African American Male mean score was 3.97. Similarly, Caucasian female mean score was 4.19 and their male mean score was 3.99. There was a -.07 mean difference between

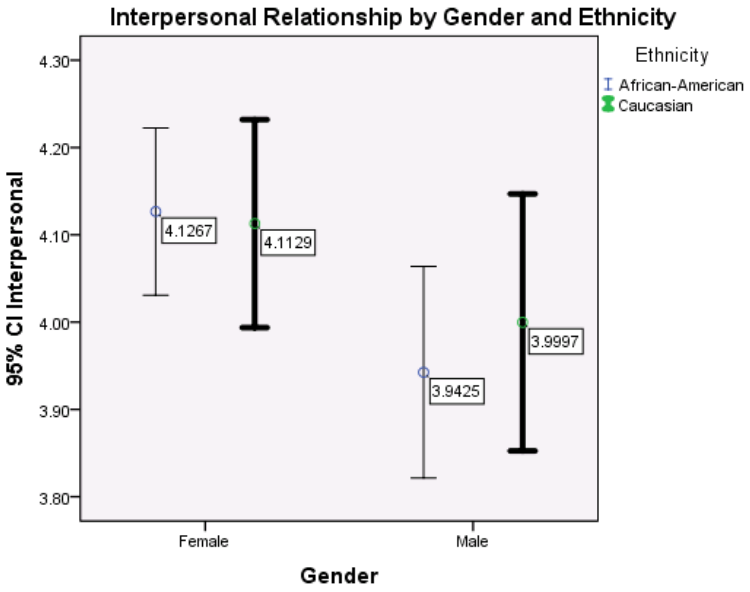

Figure 4.9: Ninety-five percent confidence interval for interpersonal relationships by ethnicity and gender.

African American females and Caucasian females that was considered insignificant (P=.490). Likewise, African American males only differed from Caucasian males by -.027 and this difference was also considered insignificant (P=.774). Therefore, ethnicity did not appear to compound the stated gender difference.

The last interaction effect output examined was the combination of building, gender, and ethnicity. Independently building and gender had significant effects and ethnicity did not. When combined together there were three combinations that had significant differences. The first was the combination of building 5, females, and ethnicity. This interaction was significant at P=.029. The next was the combination of building 5, males, and ethnicity with a P Value of .033. Lastly the combination of building 6, males, and ethnicity was also significant with a score of P=.031. This indicates that for these three occurrences ethnicity impacted the gender results at the building level for the interpersonal relationships category.

After the MANOVA was completed, T-Tests were run. For the category of interpersonal relationships there were only two incidences that were scored at significant. First, building five had a mean difference of .471 leading to a significant difference with a P value of .017. In addition to building five, building six had a significant result with a mean difference of .245 and a P value of .031. These results were inline with the MANOVA. As noted earlier, the MANOVA calculated both buildings with a significant difference.

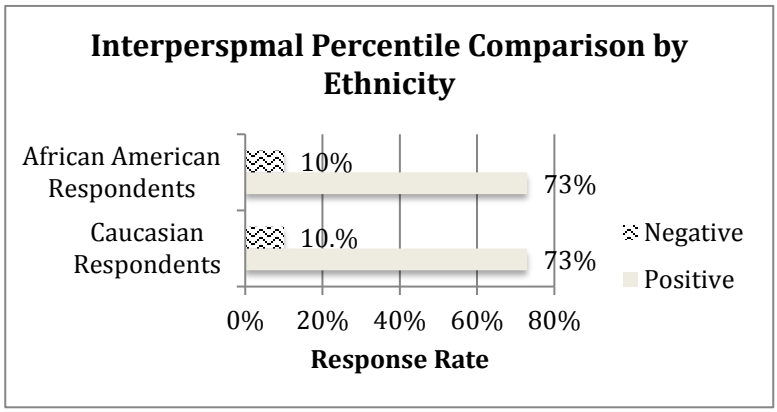

Figure 4.10: Percent of African American and Caucasian students responded positively and negatively in the school climate survey category of interpersonal relationships.

Finally to complete the analysis of the interpersonal relationship, the percentile comparison procedure was performed. This analysis found that African American and Caucasian students were nearly equal in their overall responses to this category. Both ethnicities' responses were positive 73 percent of the time and 10 percent negative.

Interpersonal Relationship Prompt Responses by Ethnicity				
	African American Positive	African American Negative	Caucasian Positive	Caucasian Negative
When I am at school, I feel I belong	73%	9%	70%	10%
My teachers treat me with respect	80%	9%	88%	4%
Teachers in my school really care about me	77%	7%	86%	6%
*If I have a personal problem I can talk to the counselor	65%	18%	64%	21%
*Students are treated fairly	74%	14%	76%	9%
*Students at my school treat me with respect	57%	16%	54%	16%
*Students at my school are friendly	55%	13%	47%	11%
I have support for learning at home	82%	5%	78%	8%
My family believes I can do well in school	93%	2%	93%	2%

Table 4.6: School Climate questions in the category of interpersonal relationships as answered positively and negatively by each demographic.
* Categories met requirement as interesting finding and will be discussed in Chapter Five.

Safety

The next subcategory evaluated was the category of safety. Starting with the main effect of building, safety had a significance of P=.005. This indicates that there was a significant variation of safety scores across the six buildings. The mean scores ranged from 3.72 (building 1) to 4.41 (building 4). While some buildings were more similar and

others more different, they were significantly different across the district. Refer to Appendix B for building level comparisons across the four categories.

Next, the main category of ethnicity was evaluated. The mean score for African Americans was 4.03 and the mean score for Caucasians was 4.10. The African American group scored only seven hundredths of a point lower, which was not a significant difference (P=.512). See Appendix C for ethnicity pairwise comparisons across climate categories. While ethnicity did not matter at the district level for this category, there were some significant findings at the building level. These findings will be discussed later.

Next, the main effect of gender was evaluated. Gender across the four dependent variables had a difference of P= .063. However, when looking at just the safety category the gender difference was not considered significant with a score of P=.129. The female mean score was 4.15 and the male mean score was 3.98. Although the males scored slightly lower, the difference was not considered significant.

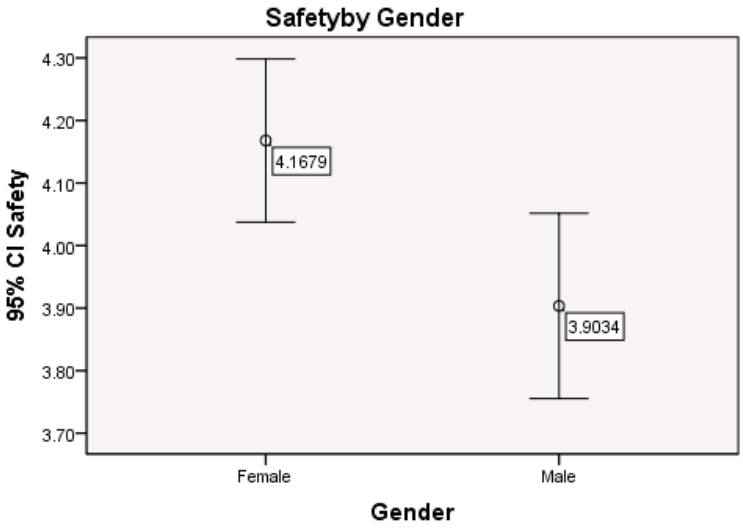

Figure 4.11 Ninety-five percent confidence interval for safety

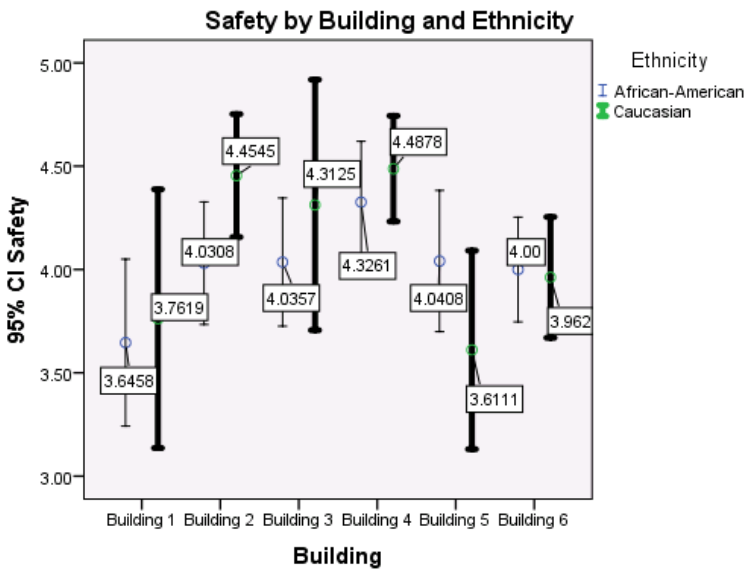

Figure 4.12: Ninety-five percent confidence interval for safety by building and ethnicity

The first interaction effect examined was building and ethnicity. When evaluating across all four dependent variables the interaction effect was P=.065. However, when looking at just the safety category, there were different effects at the building level when considering ethnicity. Across the six buildings African American mean scores ranged from 3.68 (building 1) to 4.35 (building 4). Caucasian mean scores ranged from 3.61 (building 5) to 4.51 (building 4). Within this category building five had a difference of .053 and a mean difference of .503. While not significant at Alpha of .05, this is a notable finding within the parameters of this study. None of the other buildings had significant findings in this category.

Next, interaction effects between building and gender were examined for the category of safety. In all but one building, females answered more positively than males (building 4). There was a range of mean differences from .013 at building two to .309 at building five. However, none of these differences were considered statistically significant. Therefore, buildings did not impact the gender effect noted before. Refer to building by gender pairwise comparison in the Appendix D for specific results.

After this test, the interaction effect of gender and ethnicity was evaluated. The earlier tests already showed that gender had a significant effect and that ethnicity did not. This test examined if the combination of the two have a different effect. Comparing ethnicity and gender within the category of safety indicated that the African American female mean score was 4.21 and African American Male mean score was 3.85. Caucasians female mean score was 4.10 and their male mean score was 4.12. There was a .112 mean difference between African American females and Caucasian females that was considered insignificant (P=.506). African American males differed from Caucasian males by -.263 resulting in a P value of (.093). Therefore, ethnicity did not appear to significantly compound the already stated gender difference but African American males had a lower mean score than their female counterparts and both Caucasian groups.

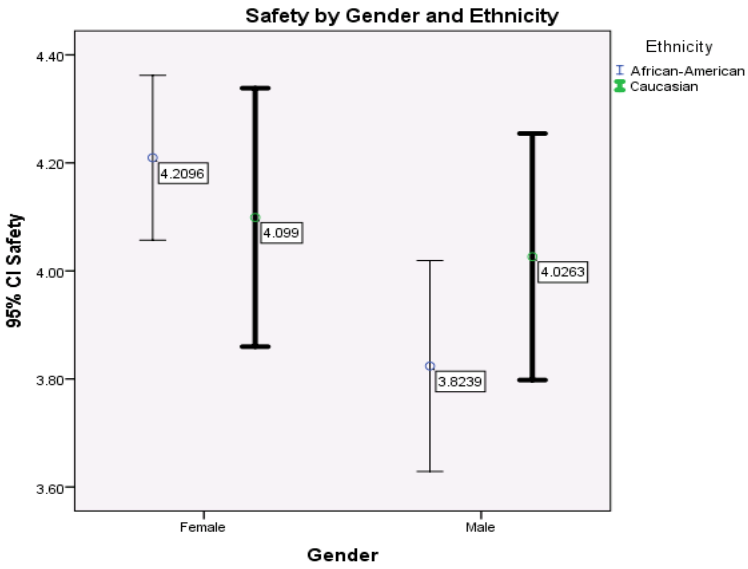

Figure 4.13: Ninety-five percent confidence interval for safety by gender and ethnicity.

The last interaction effect output examined was the combination of building, gender, and ethnicity. Independently, building and gender had significant effects and ethnicity did not. When combined together, there was only one combination that had a significant effect. The combination of building 5, females, and ethnicity was significant at P=.032. The mean difference between African American females and Caucasian

females was .768. This indicates that for this occurrence ethnicity impacted the gender results at the building level for the safety category.

After the MANOVA was completed, T-Tests were run for the safety category. For this category there were no significant or almost significant findings. These results are in line with the MANOVA. As noted earlier, the MANOA had calculated only one almost significant result at building five.

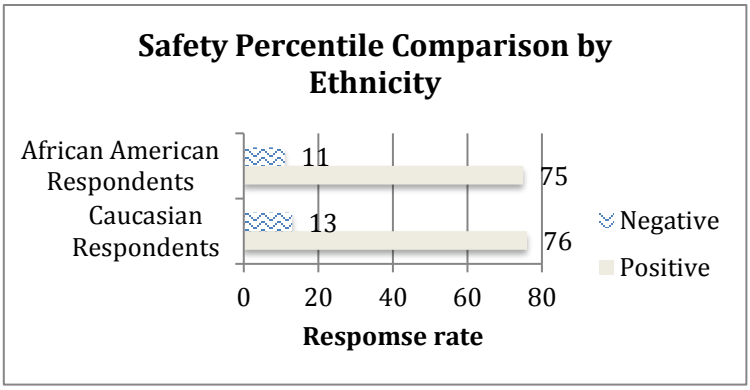

Figure 4.14: Percent of African American and Caucasian students (by gender) who responded positively and negatively in the school climate survey category of safety.

Finally, to complete the analysis of safety, the percentile comparison procedure was performed. This analysis found that African American and Caucasian students were basically equal in their responses to this category.

African Americans responded 75 percent positive and 11 percent negative, while Caucasians responded 76 percent positive and 13 percent negative. The only prompt in this category was "When I am at school, I feel I am safe." The two groups answered similarly.

Safety Prompt Responses by Ethnicity				
	African American Positive	African American Negative	Caucasian Positive	Caucasian Negative
*When I am at school, I feel I am safe	75%	11%	76%	13%

Table 4.7: School Climate question(s) in the category of safety as answered positively and negatively by each demographic.
* Categories met requirement as interesting finding and will be discussed in Chapter Five

Teaching and Learning

The last subcategory evaluated was Teaching and Learning. Starting with the main effect of building, this category had a significance value of P=.010. This indicates that there was a significant variation of teaching and learning scores across the six buildings. The mean scores ranged from 3.99 (building 1) to 4.35 (building 2). While some buildings were more similar and others more different, scores were considered significantly different when looking across all six. Refer to Appendix B for building level comparisons across the four categories.

Next, the main category of ethnicity was evaluated. The mean score for African Americans was 4.16 and the mean score for Caucasians was 4.17. The African American group scored only one hundredth of a point lower, which was not a significant difference (P=.854). See Appendix C for ethnicity pairwise comparisons across climate categories. While ethnicity did not matter at the district level for this category, there were some significant findings at the building level. These findings will be discussed later.

Next, the main effect of gender was evaluated. When looking at just the teaching and learning category the gender difference was considered significant with a score of P=.007. The female mean score was 4.25 and the male mean score was 4.08. Although the males

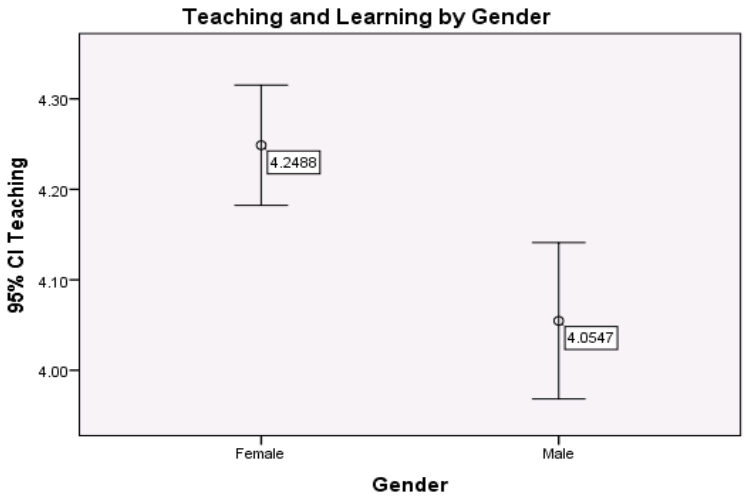

Figure 4.15: Ninety-five percent confidence interval for teaching and learning by gender

scored only .172 points lower, the difference was considered significant in the teaching and learning category.

The first interaction effect examined was building and ethnicity. When evaluating across all four dependent variables the interaction effect was P=.065. However, when looking at just the teaching and learning category, there were different effects at the building level when considering ethnicity. Across the six buildings African American mean scores ranged from 3.93 (building 1) to 4.35 (building 4). Caucasian mean scores ranged from 3.85 (building 5) to 4.38 (building 2). Within this category building 5 had the only significant difference with a P value of .011 and African American mean score .365 higher than Caucasians.

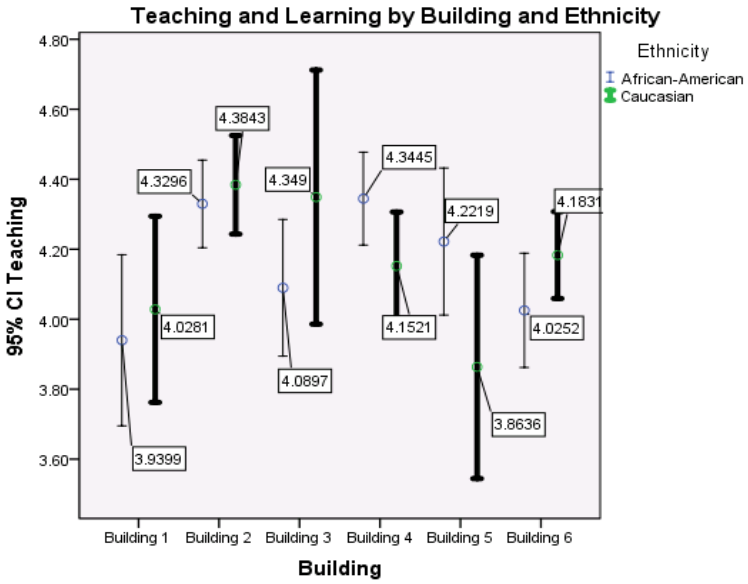

Figure 4.16: 95 percent confidence interval for teaching and learning by building and gender.

Next, interaction effects between building and gender were examined for the category of teaching and learning. In all the buildings, females answered more positively than males. There was a range of mean differences from .052 at building one to .388 at building 5. Building 5's difference was on the only one considered significant with a P value of .007. Therefore, in only one instance did building impact the gender effect

previously noted. Refer to building by gender pairwise comparison in the Appendix D for specific results.

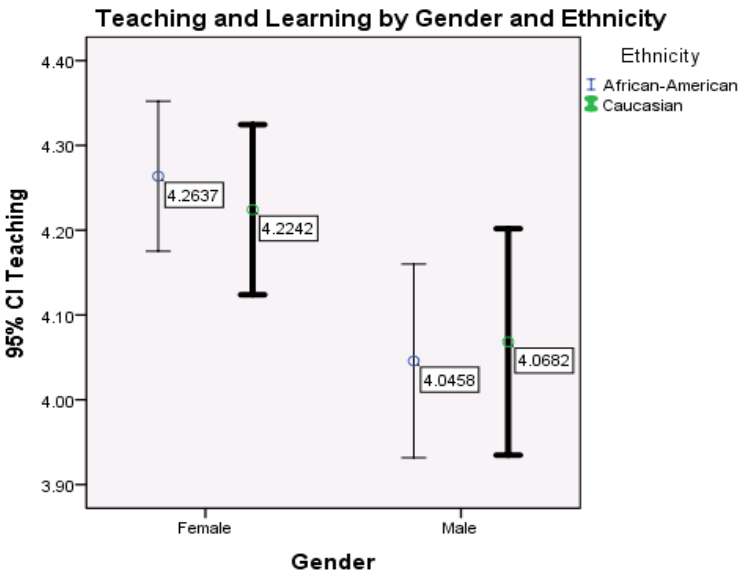

Figure 4.17: Ninety-five percent confidence interval for teaching and learning by gender and ethnicity.

After this test, the interaction effect of gender and ethnicity was evaluated. This test examines if the combination of the two have a different effect. Comparing ethnicity and gender within the category of teaching and learning indicated that the African American female mean score was 4.24 and African American Male mean score was 4.07. Caucasians female mean score was 4.25 and their male mean score was 4.08. There was a .01 mean difference between African American females and Caucasian females that was considered insignificant (P=.949). Also, African American males only differed from Caucasian males by -.017 and this difference was not significant (P=.840). Therefore, ethnicity did not appear to significantly compound the already stated gender difference in the teaching and learning category.

The last interaction effect output examined was the combination of building, gender, and ethnicity. Independently, building and gender had significant effects but ethnicity did not. When combined together, there were three combinations that had significant effects. First, the combination of building 3, males, and ethnicity was significant at P=.043. The mean difference between African American males and

Caucasian males was -.558. This indicates that for this occurrence ethnicity impacted the gender results at the building level for the teaching and learning category. Next, the combinations of building five, females and ethnicity was also significant. There was a mean difference between African American females and Caucasian females of .441 resulting in a P value of .050. This indicates that the two female groups differ significantly at the building level for the teaching and learning category. Finally, the combination of building five, males, and ethnicity was also considered significant. The African American mean score was .492 higher than the Caucasian mean score, which resulted in a P value of .038. This indicates that the combination of building, gender, and ethnicity was significant for this occurrence.

After the MANOVA was completed, T-Tests were run for the teaching and learning category. For this category there were two significant or almost significant findings. First, building 4 had a .19 mean difference between the two groups and this was considered interesting with a significance of P= .058. In addition, building 5 had a mean difference of .38 between the groups and this was also interesting with a significance of P= .052. These results were slightly different than the MANOVA. The MANOVA noted a significant result at building 5.

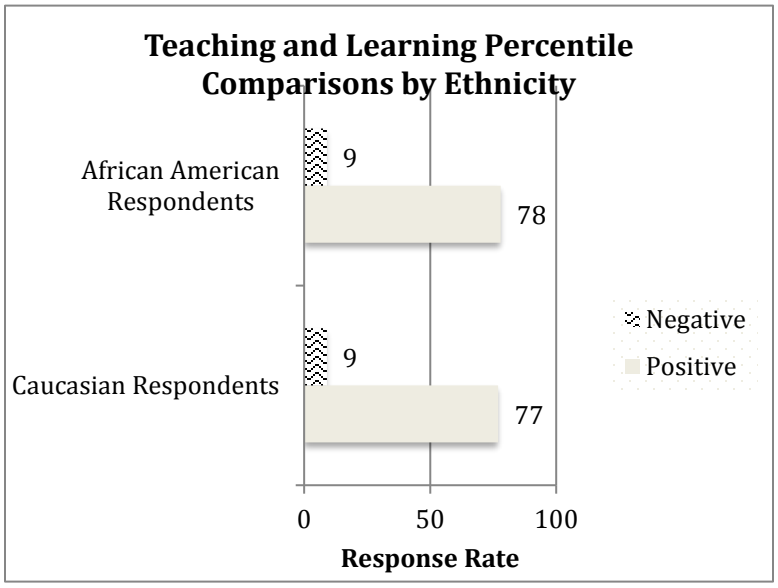

Figure 4.18: Percent of African American and Caucasian students who responded positively and negatively in the teaching and learning category.

Finally, to complete the analysis of the teaching and learning category, the percentile comparison procedure was performed. This analysis found that African American and Caucasian students were basically equal in their overall responses to this category. African Americans responded positively 78 percent of the time and negatively nine percent of the time, while Caucasians responded positively 77 percent of the time and negatively nine percent of the time.

Teaching and Learning Prompt Responses by Ethnicity				
	African American Positive	African American Negative	Caucasian Positive	Caucasian Negative
*When I am at school I have fun learning	71%	11%	63%	14%
*I enjoy reading	73%	11%	71%	13%
I learn a lot in this school	82%	6%	85%	4%
*When I am at school, I feel I have choices in what I learn	56%	20%	46%	27%
My teachers think I will be successful	82%	7%	89%	4%
I set goals in school	81%	5%	76%	9%
My teacher is a good teacher	86%	7%	89%	3%
My teacher believes I can learn	89%	4%	92%	5%
The work I do in class makes me think	79%	5%	78%	7%
I can do well in school	87%	5%	90%	3%
*My counselor makes visits to teach us about careers	68%	12%	64%	15%
I use technology in the classroom	76%	9%	78%	8%

Table 4.8: School Climate question(s) in the category of teaching and learning as answered positively and negatively by each demographic.
* Categories met requirement as interesting finding and will be discussed in Chapter Five.

African American Boys and School Climate

RQ 2. How do African American elementary school boys perceive school climate compared to other elementary aged groups in the same school district?

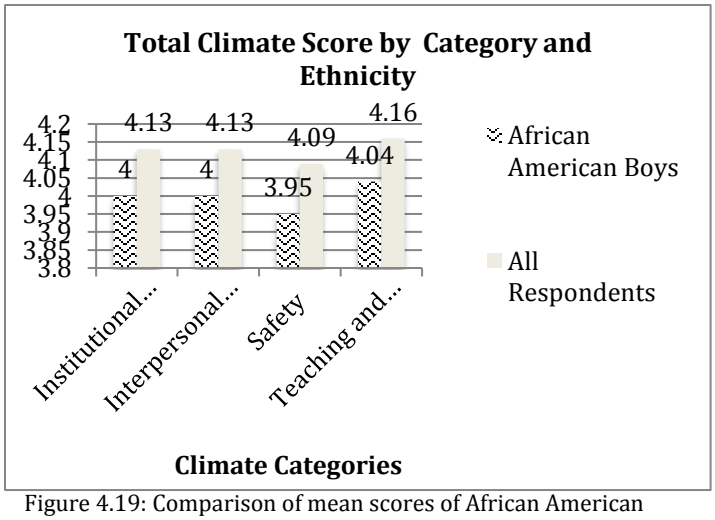

Figure 4.19: Comparison of mean scores of African American boys and all other respondents in each category of the school climate survey.

To fully examine this question the data was first evaluated by total climate score. Then it was sorted by the four climate categories identified by

the National School Climate Council tests were used to compare Likert scored responses to the climate prompts between African American male students and the rest of the surveyed population.

Compared to all of the respondents of any race and gender who completed the climate survey there was a statistically significant difference between how African American boys grade 3-5 in the district who took the school climate survey (177) (M= 3.95, SD= 0.78), and the other participating students in the district (765) (M=4.09, SD= 0.70) that responded to school climate prompts.

African American Male T-Test Results			
Total School Climate P value:0.0163	Population Size	Mean	Standard Deviation
African American boys	177	3.95	0.78
All other races and genders	765	4.09	0.64

Table 4.9: T-Tests results for African American males compared to all other respondents.

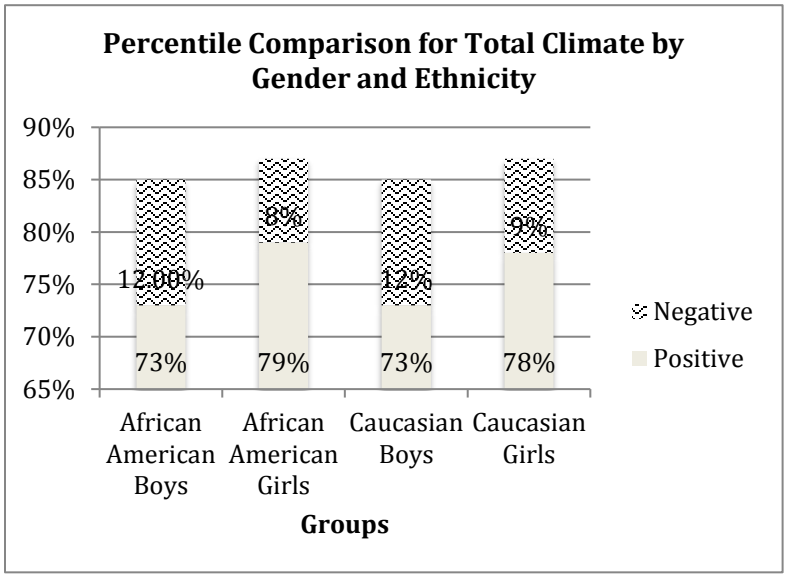

Figure 4.20: Percent of African American and Caucasian students (by gender) who responded positively and negatively on the four climate categories on the school climate survey.

African American boys identified at 73 percent positive rate in total climate perception and a negative rate of 12 percent. Similarly, Caucasians boys responded with a 73 percent positive rate and a negative rate of 12 percent, Caucasian girls were slightly more positive with a positivity rate of 78 percent and negativity rate of nine percent. In addition, African Americans girls had a 79

percent positive rate, and a negativity rate of eight percent. Comparing the different groups with one another, showed African American boys and Caucasian boys responded similarly per question and category on a percentage basis. In addition, both female groups were typically more positive and less negative. Compared to the females in the data set, African American boys were more negative 90 percent of the time and less positive 80 percent of the time. Though African American boys answered most questions differently than the Caucasian boys, overall the males showed the exact same average of positive responses (73 percent) and negative responses (12 percent).

Institutional Environment.

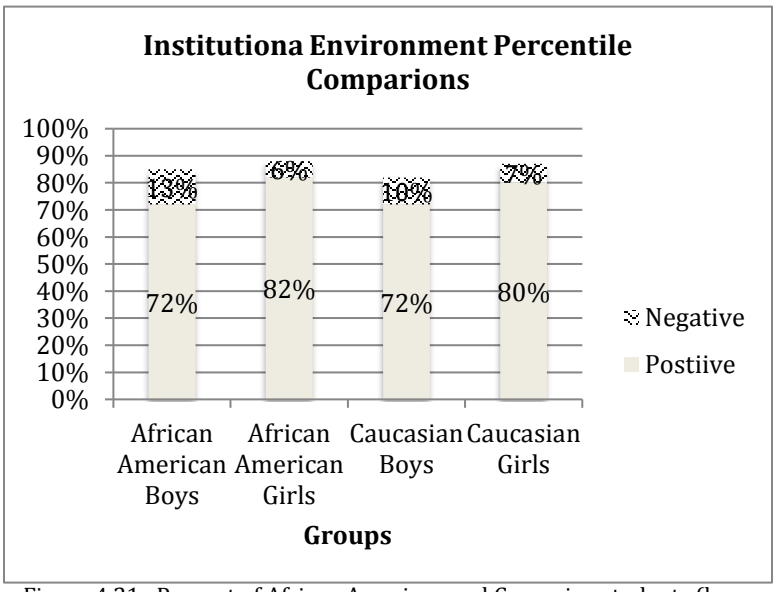

Figure 4.21: Percent of African American and Caucasian students (by gender) who responded positively and negatively in the institutional environment category.

In the category of institutional environment African American boys were more negative than Caucasians of both genders and African American girls. African American boys identified a 73 percent overall positivity in this category and a negativity rate of 13 percent. Comparatively, Caucasians boys had a positivity rate of 72 percent and a negativity rate of 10 percent, while Caucasian girls had a positivity rate of 80 percent and negativity rate of seven percent. Finally, African Americans girls had a positivity rate of 82 percent and negativity rate of six percent.

Institutional Environment Prompt Responses by Ethnicity and Gender								
	AA BOYS Positive	AA BOYS Negative	AA GIRLS Positive	AA GIRLS Negative	Caucasian BOYS Positive	Caucasian BOYS Negative	Caucasian GIRLS Positive	Caucasian GIRLS Negative
*I like this school	70%	16%	83%	8%	72%	11%	80%	5%
*In my school all students are given a chance to succeed	78%	11%	85%	7%	74%	9%	86%	4%
*I know what I am supposed to be learning in my classes	78%	11%	87%	2%	80%	3%	86%	3%
*The community is proud of this school	65%	11%	78%	5%	68%	7%	76%	8%
*I feel very good work is expected at my school	78%	8%	86%	5%	69%	12%	88%	3%
*I have been encouraged to think about career or educational goals at school	78%	11%	84%	2%	73%	9%	82%	8%
*I am proud to go to school	73%	12%	82%	5%	76%	12%	82%	7%
*Discipline is handled fairly	63%	20%	68%	10%	63%	18%	63%	16%

Table 4.10: School Climate questions in the category of institutional environment as answered positively and negatively by each demographic.
* Categories met requirement as interesting finding and will be discussed in Chapter Five.

After the percentile comparison test was completed. A T-test was performed comparing African American boys against the rest of the survey respondents. The T-Test showed that there was a significant difference (P=.04) between the 3-5 grade African American boys and everyone one else in the institutional environment category.

African American Male Institutional Environment T-Test Results			
Institutional Environment P value:0.0418	Population Size	Mean	Standard Deviation
African American boys	177	3.99	0.88
All other races and genders	764	4.12	0.75

Table 4.11: T Test results for institutional environment of African American males compares to all other respondents

Interpersonal Relationships.

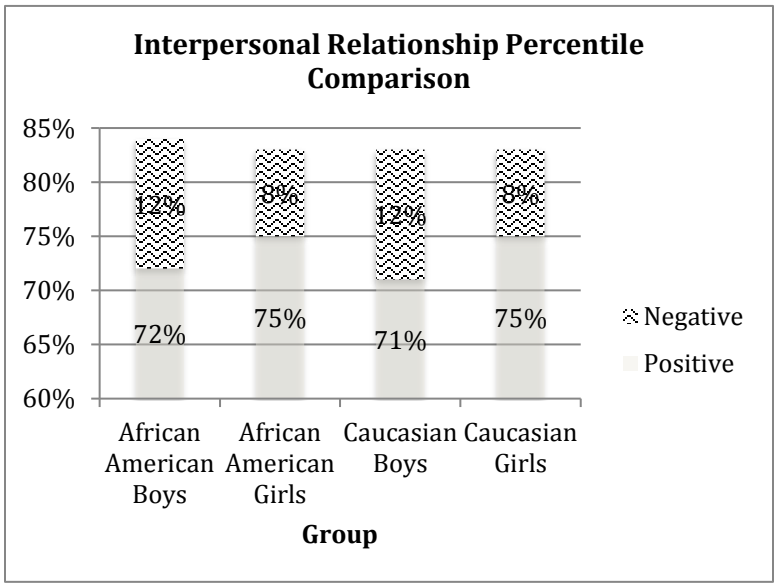

Figure 4.22: Percent of African American and Caucasian students (by gender) who responded positively and negatively in the school climate survey category of interpersonal relationships.

In the category of interpersonal relationships African American boys were equally negative as Caucasian boys and more negative than the girls of either races. African American boys had a 72 percent overall positive rate in this category and a negativity rate of 12 percent. This compared to Caucasians boys with a positivity rate of 71 percent and a negativity rate of 12 percent, Caucasian girls with a positivity rate of 75 percent and negativity rate of eight percent, and African Americans girls with a positivity rate of 75 percent and negativity rate of eight percent.

After the percentile comparison test, a T-Test was performed to compare the difference between African American boys and the rest of the surveyed population. The results indicated there was a near significant statistical difference between the two groups with a P score of .051 for the interpersonal relationships category.

African American Male Interpersonal Relationship T-Test Results			
Interpersonal Relationships P value:0.0516	Population Size	Mean	Standard Deviation
African American boys	176	3.94	0.81
All other races and genders	764	4.05	0.70

Table 4.12: Interpersonal T Test results for African American males compared to all other respondents.

Interpersonal Relationship Prompt Responses by Ethnicity and Gender								
	AA BOYS Positive	AA BOYS Negative	AA GIRLS Positive	AA GIRLS Negative	Caucasian BOYS Positive	Caucasian BOYS Negative	Caucasian GIRLS Positive	Caucasian GIRLS Negative
My teachers treat me with respect	80%	10%	86%	5%	84%	7%	92%	1%
Teachers in my school really care about me	76%	10%	78%	4%	81%	9%	91%	2%
*When I am at school, I feel I belong	70%	11%	77%	6%	67%	12%	73%	8%
*If I have a personal problem I can talk to the counselor	60%	21%	71%	13%	60%	21%	66%	22%
*Students are treated fairly	73%	16%	76%	11%	72%	10%	81%	9%
*Students at my school treat me with respect	58%	17%	56%	14%	53%	18%	55%	14%
*Students at my school are friendly	59%	14%	51%	11%	57%	14%	35%	8%
I have support for learning at home	78%	9%	84%	3%	73%	10%	83%	5%
My family believes I can do well in school	91%	3%	96%	2%	88%	3%	98%	1%

Table 4.13: School Climate questions in the category of interpersonal relationships as answered positively and negatively by each demographic.
* Categories met requirement as interesting finding and will be discussed in Chapter Five.

Safety

In the area of safety, African American boys identified at a 70 percent overall positive rate and had a negative rate of 13 percent. Caucasian boys

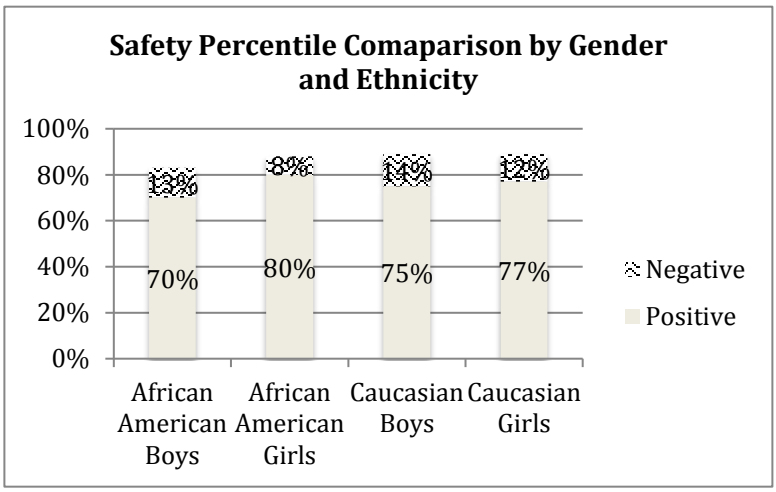

Figure 4.23: Percent of African American and Caucasian students (by gender) who responded positively and negatively in the school climate survey in the category of safety.

however, had a positive rate of 75 percent and a negative rate of 14 percent, while Caucasian girls had positive rate of 77 percent and negative rate of 12 percent. In addition, African Americans girls had a positive rate of 80 percent and negative rate of eight percent. This indicated that African boys responded less positively than the other groups.

Safety Prompt Responses by Ethnicity and Gender								
	AA BOYS Positive	AA BOYS Negative	AA GIRLS Positive	AA GIRLS Negative	Caucasian BOYS Positive	Caucasian BOYS Negative	Caucasian GIRLS Positive	Caucasian GIRLS Negative
*When I am at school, I feel I am safe	70%	13%	80%	8%	75%	14%	77%	12%

Table 4.14: School Climate question(s) in the category of safety as answered positively and negatively by each demographic.
* Categories met requirement as interesting finding and will be discussed in Chapter Five.

Once again a T-test was run after the percentile comparison test was complete. This T-Test indicated that there was a statistical significant difference between African American boys and the rest of the survey respondents. The T-Test calculated a P value of .0417 indicating a significant difference in the category of safety between the two groups.

African American Male Safety T-Test results			
Safety P value:0.0417	Population Size	Mean	Standard Deviation
African American boys	177	3.82	1.31
All other races and genders	765	4.03	1.18

Table 4.15: T-Test results for African American Males compared to all other respondents in the safety category.

Teaching and Learning.

In the area of teaching and learning, African American boys were more negative and less positive than African American and Caucasian girls, but were similar to Caucasian boys. African American boys identified a 75 percent positive rate in this category and a negativity rate of 11 percent. This compared to Caucasian boys with a positive rate of 74 percent and a negative rate of 11 percent. On the other hand,

Caucasian girls had a positive rate of 80 percent and negative rate of seven percent, which was comparable to the African American girls, who had a positive rate of 80 percent and negative rate of eight percent.

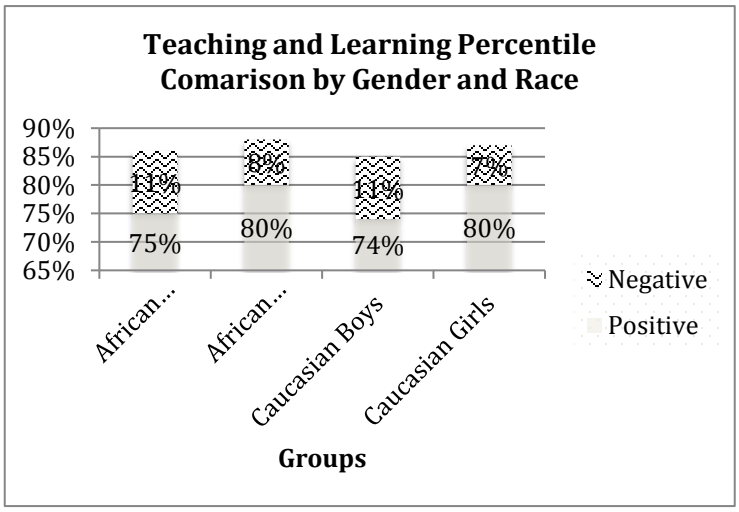

Figure 4.24: Percent of African American and Caucasian students (by gender) who responded positively and negatively in the school climate survey category of teaching and learning.

Finally, a T-Test was used to compare the African American boys to the rest of the survey respondents for the Teaching and Learning category. The T-Test calculated a significant difference between the two groups with a P value of .0395. African American boys responded significantly more negative than the rest of the sampled population.

African American Male Teaching and Learning T-Test Results			
Teaching and Learning P value:0.0395	Population Size	Mean	Standard Deviation
African American boys	177	4.04	0.76
All other races and genders	765	4.15	0.64

Table 4.16: T Test results of African American males compared to everyone else for the teaching and learning category.

Teaching and Learning Prompt Results by Ethnicity and Gender								
	AA BOYS Positive	AA BOYS Negative	AA GIRLS Positive	AA GIRLS Negative	Caucasian BOYS Positive	Caucasian BOYS Negative	Caucasian GIRLS Positive	Caucasian GIRLS Negative
*I enjoy reading	71%	13%	74%	9%	69%	15%	72%	11%
I learn a lot in this school	81%	9%	84%	2%	81%	4%	89%	4%
*When I am at school, I feel I have choices in what I learn	53%	26%	60%	14%	44%	28%	49%	27%
My teachers think I will be successful	80%	10%	84%	4%	87%	6%	92%	2%
*I set goals in school	79%	7%	84%	2%	75%	11%	77%	7%
My teacher is a good teacher	84%	10%	88%	4%	87%	4%	92%	1%
My teacher believes I can learn	88%	6%	90%	2%	89%	7%	94%	3%
The work I do in class makes me think	80%	6%	79%	4%	75%	10%	81%	4%
I can do well in school	84%	6%	90%	3%	86%	5%	94%	1%
*My counselor makes visits to teach us about careers	60%	15%	75%	8%	65%	17%	62%	13%
*I use technology in the classroom	73%	12%	78%	5%	71%	12%	87%	4%
*When I am at school I have fun learning	69%	15%	72%	7%	59%	18%	68%	9%

Table 4.17: School Climate questions in the category of teaching and learning as answered positively and negatively by each demographic.
* Categories met requirement as interesting finding and will be discussed in Chapter Five.

Climate's Relationship to the Map Test

RQ 3. What relationships exist between perceptions of elementary school climate and Missouri Assessment Program test scores?

In order to evaluate the relationship between school climate and the MAP test linear regressions were performed. First, grade level climate scores were calculated. Climate scores for each grade level at each building were calculated. Then, independent

climate category scores were calculated for each grade level at each building. These grade level averages were all entered into SPSS. This procedure created 18 data points for each climate category and the overall climate total. Next, MAP score data was gathered from the Missouri Department of Elementary and Secondary Education. Since this data could not be obtained at the student level, it was gathered at the grade level by building for both the math test and the English language arts test. This method also resulted in 18 mean scores for each test. These numbers were all entered into SPSS and then linear regression tests were used to investigate if any relationships exist

English Language Arts

The first test evaluated was the English Language Arts test. The 18 mean MAP test scores were first compared to the 18 total climate mean scores. The mean of the ELA test scores was 464.58, and the mean of the total climate scores was 4.10. In addition, this data had a Pearson R of .219 and was not considered significant (P=.191). Finally, an R square value of .048 was calculated. This indicates a slight but insignificant positive relationship between total climate mean scores and mean ELA test results.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.219[a]	.048	-.011	19.40397	.048	.808	1	16	.382

Model Summary results for Total climate scores and ELA map test

a. Predictors: (Constant), Total Climate

b. Dependent Variable: Total ELA

Table 4.18: Regression analysis for total climate and ELA MAP

Next, each individual climate category was evaluated with the ELA test scores. Institutional Environment was compared first. The mean Institutional Environment score was 4.11 and as mentioned earlier the mean ELA score was 464.58. The Pearson R value

for this comparison was .082 and was not significant with a P value of .373. In addition, this regression resulted in an R squared value of .007. This again indicates a minimal positive, but statistically insignificant relationship.

Next, the category of Interpersonal Relationships was evaluated. The mean of this category was 4.07. When compared with the ELA test scores Interpersonal Relationships had a Pearson R of .170 and an R squared value of .029. These values again indicate a very weak and statistically insignificant positive relationship.

After Interpersonal Relationships, the category of Safety was analyzed. The safety category had a mean score of 4.02. It also had a Pearson R of .215 and a R squared value of .046. This again indicated that this category had an insignificant minimally positive relationship. Finally, the Teaching and Learning category was analyzed. The mean score of this category was 4.15. Teaching and Learning had a Pearson R of .234 which was not considered significant (p=.175). This category had a R squared value of .055. Therefore, it also had only a minimally positive relationship.

Math

After the ELA data were analyzed the same processes were used to analyze the relationship between the math test and the various climate results. The first comparison run was between the 18 math mean scores and the 18 climate total mean scores. The math mean score was 463.04 and the mean total climate score was 4.10. These totals resulted in a Pearson R of .152 and were not considered significant (P=.2740). Finally, an R square value of .023 was recorded. This indicates a very slight but insignificant positive relationship.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.152[a]	.023	-.038	26.29395	.023	.378	1	16	.547

a. Predictors: (Constant), Total Climate

b. Dependent Variable: Total Math

Table 4.19: Regression analysis for Total climate and Math MAP test.

After the total climate data was evaluated, each of the four sub categories were analyzed. The first category was institutional environment. This category had a mean score of 4.11 and resulted in a Pearson R of .079. This correlation was considered insignificant with a P value of .378. In addition, an R squared score of .006 was calculated. Therefore, this relationship was insignificant and minimally positive. Second, the interpersonal relationship category was examined. This category had a mean score of 4.07. When compared with the math MAP it had a Pearson R of .113 and the two were not considered significantly correlated (P=.328). Also, this comparison resulted in a R squared value of .013. Again, indicating a minimally small positive but insignificant relationship. Next, the category of safety was analyzed. Safety had a mean score of 4.02 and a Pearson R score of .261. This indicates an insignificant minimal correlation with a P value of .147. In addition, an R squared value of .068 was calculated. In other words, the category of safety also had a minimally positive but insignificant effect on math scores. Finally, the Teaching and Learning category was evaluated. This category had a mean score of 4.15 and a Pearson R score of .158. This correlation was considered not significant with a P Value of .265. Moreover, this

relationship had a R squared value of .025 and therefore it had only a minimal insignificant positive relationship.

Chapter Summary

Chapter Four explained the various analyses that were used to answer the three research questions and presented the results. First, an ANOVA was used to compare African American and Caucasian student total climate scores. This analysis indicated that there was a statistically significant difference within the main effect of building, the main effect of gender and the interactive effect of building and ethnicity. These statistical significant findings indicated the need for deeper investigation.

Next a MANOVA was used to investigate how the various dependent variables and independent variables interacted. The dependent variables were the climate categories and the independent variables were building, gender, and ethnicity. This test showed that the main effect of buildings was significant and that the main effect of gender was nearly significant. In addition, it indicated that the interactive effect of ethnicity and building was nearly significant. These findings, led to additional tests to investigate the differences.

After the MANOVA various T-tests and percentile comparison tests were used to further investigate the various differences among the groups. These tests also indicated that there were some differences between the different ethnicities and genders. They all pointed towards a trend of African American males responding more negatively. For this reason, the tests were followed up with additional percentile comparisons and T-Tests exploring how African American boys specifically compared to various groups.

Finally, linear regression tests were used to evaluate how school climate relates to the MAP tests. First, overall climate scores were compared with the ELA test and then the math test. Results indicated that there was only a minor positive relationship between overall climate scores and either of the MAP tests. Then, each of the climate categories were compared with the MAP tests. Again, results indicated that although each category had a slight positive relationship to each test, none of them were considered statistically significant.

Chapter Five

Overview of the Problem

For decades now, African American students have not been performing as well as their White counterparts on a variety of academic measures. This phenomenon has become known as the achievement gap. White students are continually out performing African American students on state and national standardized tests (Beglau, 2005; National Center for Education Statistics, 2015; Missouri Department of Elementary and Secondary Education, 2015). Researchers have speculated a variety of reasons for this gap but have failed to eliminate it. Reasons such as: genetic differences, test bias, educational debt, school based factors, and non-school based factors have all been postulated and explored over the years. However, none of these ideas have stood alone as the primary reason for this issue. Therefore, researchers must continue to be vigilant in their exploration of this gap.

Purpose Statement and Research Questions

Research suggests that tackling the achievement gap is not an easy endeavor (Ladson-Billings, 2006; Noguera, 2003). The gap is a complex problem that should be investigated from a variety of angles to come up with possible causes and solutions. We expanded on the current research by adding a study that examined one specific school factor, school climate. The school district population studied is approximately equally split by African American and White students, is contained in a small geographical region and students are of similar financial backgrounds, these factors help minimize outside variables. By exploring both how student perceptions of climate differed and the

relationship between school climate data and MAP tests results, new perspectives on the achievement gap were explored. The following three questions guided the investigation:

RQ 1. How do perceptions of elementary school climate differ between African American and Caucasian elementary students in the same school district?

RQ 2. How do African American elementary school boys perceive school climate compared to other elementary aged groups in the same school district?

RQ 3. What relationship exists between perceptions of elementary school climate and Missouri Assessment Program test scores?

Review of Methodology

This causal comparative study was a non-experimental quantitative investigation that used a purposeful and convenient sample. The study utilized two instruments for data collection. The first was the district's annual climate survey, which consisted of several Likert Scale questions. These questions were then categorized into the four climate categories of the National School Climate Council. Second, MAP test data for the ELA and Math MAP tests for the corresponding school year was used as a correlate. Survey results were collected early in the 2015-2016 school year and the MAP test was taken late in the same academic year. The data was then entered into SPSS and Excel.

To analyze the data a variety of tests and analytical methods were utilized. First, to evaluate if differences existed between the various groups an ANOVA, a MANOVA, and a variety of T-Tests were applied to the data. In addition, a researcher created percentile comparison was used. Then linear regression tests were run to evaluate the relationship between school climate and the MAP tests.

Limitations and Delimitations

This study takes place in one small suburban school district. The study has a small sample size and may not be generalizable. Also, the time frame of the study is short, so data collection techniques may be limited. Only third through fifth students were used. The time frame studied may not be typical of annual observations. Specific racial groups were used. The district climate survey was only instrument used to measure climate. The MAP test was the only instrument used to measure achievement. The study is only quantitative.

Areas for Improvement

Various problems within the study were discovered and suggestions for improvement would strengthen the results. Three areas pertaining to the survey and one area regarding the regression analysis were noted.

First, the climate survey data used to analyze the three research questions had room for improvement. After analyzing the data it became apparent that there were problems with the structure, format, and wording of the climate survey. The first problem discovered was the use of the word Caucasian instead of the word White. The Caucasian research pool was significantly smaller (n=239) than the African American pool although the district has a fairly even amount of African American and White students. It is unknown why so many more self-reported African American respondents (n=379) completed the survey. One hypothesis is that White students were not familiar with the word Caucasian. These students may have left the ethnicity identifier blank or selected a different ethnicity. The US Census uses the word White with a sub descriptor of various European countries (Lee, 1993). These definitions could be helpful for children, though children in elementary school may not be aware of their origin of

ancestry or able to identify with one ethnic category. In future research, replacing the word Caucasian with the word White might increase the number of self-reported White students. This could have combatted a further deficit of the research related to the disproportionate size of the ethnic respondent pools. Conducting the same research with altered ethnic categories and an equalized demographic could be valuable in combating this limitation.

The second problem with the survey is a possible issue with the Likert Scale categories that were used (strongly agree, agree, neutral, disagree, and strongly disagree). Researchers have found that when given the category of neutral responders are more likely to chose neutral than disclose their actual opinion (Johns, 2005; Krosnick et al., 2002; Nowlis, Kahn, & Dhar, 2002). When reporting on attitudes, participants must first remember a time when the prompt applied to them and then consider and apply the prompt to past circumstances. Recalling and comparing individual prompts to memories is an involved process and often leads to participants selecting neutral in order to avoid the intellectual task or avoid response (Krosnick et al., 2002). In this survey each of the five choices were labeled. Labeling all points rather than just labeling a positive and negative category tends to lead to higher positives (Krosnick, 1991). Research has also shown that the more Likert options given the less extreme the findings (Weijters, Cabooter, & Schillewaert, 2010).

Other studies have shown that though someone feels negative, people are generally negative avoidant and will chose neutral to appease themselves on an issue (Bishop, 1987; Krosnick et al., 2002). Neutral is also chosen when a responder feels their opinion is undesirable (Krosnick et al., 2002). In this research it is not known what the

exact survey conditions were: how much time the students had, how much motivation surrounded the survey, or how private the responses. There is also the issue that a child may not understand the word neutral or the implications of the choice of neutral.

Based on research and the participants in this survey, it is possible that neutral responses were a result of cognitive laziness or negativity with an unwillingness to express negativity. The structure of the Likert Scale should be considered in future research, especially when working with children. A two point system of agree or disagree may be the best way to facilitate clear responses from participants (Hartley, 2014) The study environment was also not controlled. The conditions under which the respondents took the climate survey are unknown. Issues like noise level, teacher proximity, and motivation surrounding the survey could affect responses. The conditions of survey implementation should be controlled in a future study.

The third problem with the survey was the use of one reverse scored question. Analysis of this question indicated that students may not have been aware of the reverse positive and negative. This resulted in the elimination of this prompt and caused the safety category to be evaluated by only one prompt.

In addition to the survey problems, the analysis of the relationship between school climate and the MAP tests was weakened by the use of group mean data. Each building was represented by average test scores for each grade level. This was done because of the inability to get individual student MAP data and the inability to assign climate results to individual students. The group mean data lessoned the regression analysis. If done again individual test results should be used, or a larger sample of group mean data results should be used to help strengthen the linear regression analysis (Fink, 2002).

Questions, Hypothesis and Results

RQ 1 How do perceptions of elementary school climate differ between African American and Caucasian elementary students in the same school district?

H 1. There will be no statistically significant difference in perception of school climate between surveyed African American and Caucasian elementary students.

Results for RQ 1. The results of the ANOVA, MANOVA and T-tests indicated that there was not a statistically significant difference between African American student's perception of school climate and their Caucasian counterparts, across the district. Therefore, this hypothesis is accepted.

However, while these significance tests did not indicate a statistical difference in ethnicity at the district level, they did highlight a statistically significant gender difference and a building level difference in some areas. In addition, the percentile comparison analysis did show trends of interest between the studied groups. See discussion section for further interpretation of these notable results.

RQ 2. How do African American elementary school boys perceive school climate compared to other elementary aged groups in the same school district?

H 2. There will be no significant difference in school climate perception between African American elementary school boys and other elementary aged student groups within the same school district..

Results RQ 2. The results of the T-Test that compared African American boys to the rest of the surveyed population indicated a significant difference between the groups for total climate. For this reason this hypotheses is rejected. However, this was only significant for three of the four sub categories. In addition, a gender difference was also noted

across the sampled population. Refer to discussion section for deeper interpretation of these results.

RQ 3. What relationships exist between perceptions of elementary school climate and Missouri Assessment Program test scores?

H 3. There will be no significant relationship between perception of school climate as calculated by the district climate survey and academic achievement as calculated by the MAP test scores.

Results for RQ 3. The results of the linear regression analysis indicated that there was not a statistically significant relationship between perceptions of school climate and Missouri Assessment Program scores. Neither total climate, nor any sub category had a significant relationship. Due to the statistically insignificant finding this hypothesis is accepted. Since this result contradicts some research and is supported by others, it will be interpreted further in the discussion section.

Discussion and Recommendations

RQ 1 and RQ 2

Most educational problems are not easily solved or clear-cut. The achievement gap is no different. Although the statistical data in used RQ 1 suggested that ethnicity does not matter in the perception of school climate across the district, there were occurrences of buildings having statically significant ethnical differences. However, these results were complicated, because they varied in different ways. Building four and five had an African American sample population that perceived school climate more positive than their counterparts while every other building had an African American population that perceived school more negatively than their Caucasian counterparts. In

addition, the percentile comparison analysis indicated a clear trend in differences for certain prompts and categories at the district level.

Furthermore, while RQ 2 showed a statistical difference between African American males and the rest of the surveyed population, they were not independently statistically different from white males or white females. Also, their percentile coding results indicate trends for various prompts and categories where they do differ from Caucasian males and females. Therefore, while the hypotheses were rejected based on specific statistical data, they warrant further discussion in the field of education.

Quality teachers want to understand their classrooms and are always concerned with improving their practice. The combination of data presented offers a trend for the need to improve school climate for all groups, but specifically African American males. For example, there were some percentile differences in Caucasian and African American respondents to the four climate categories and to specific questions, which show small variances in student perceptions. Also, there were many differences in how African American boys, African American girls, Caucasian boys, and Caucasian girls responded to prompts. Though not all of the variance provided statistically significant data, negative trends still provide insight into areas of improvement that could be made to increase positive perceptions of school climate for students. This is especially true for African American males who have the highest achievement gap historically (Phillips, Crouse, & Ralph, 1998) and the strongest negative views of school climate. These variances and findings will be discussed within the climate category sections in which they were discovered. First, a discussion about African Americans compared to Caucasians will be presented. Then a discussion on a combination of gender and ethnicity will be explored.

Finally, suggestions for improving the negative findings of each category will be discussed.

Institutional Environment: African American and Caucasian Comparison by Ethnicity.

While the two groups tended to be positive and answer similarly there were a couple of prompts in this category that had interesting results. First, 13 percent of African Americans responded negatively to the prompt: "I like this school," while only 8 percent of Caucasians answered this way. The other prompt that stood out was: "Discipline is handled fairly". Both student groups responded with a lower than 70 percent positive response rate, African Americans at 65 percent and Caucasians at 63 percent. In addition both groups responded with a higher than 10 percent negative response rate, African Americans at 15 percent and Caucasians at 17 percent. These two prompts stood out as potential areas to investigate further.

Institutional Environment: African American and Caucasian Comparison by Ethnicity and Gender.

Adding gender as a variable into this category created a few more occurrences where various thresholds for the percentile comparison analysis were met. In six out of the eight categories male students responded less positively and more negatively than their female counterparts. Across the ethnicities responses were similar between same gender respondents. However, some prompts are worth highlighting.

The first prompt worth mentioning is the prompt, "Discipline is handled fairly." For this prompt all groups had a response rate less than 70 percent and a negative rate over 10 percent. African American boys had the highest negative rate at 20 percent. As

mentioned earlier this indicates that all students perceive problems with the way discipline is handled.

The next interesting finding was to the prompt, "I know what I am supposed to be learning in my class." For this prompt African American boys had the lowest positive response (78 percent) and the highest negative response rate (11 percent). All the other groups had a negative response at or below three percent. This may again be indicative of some disconnect with school.

Another finding worth discussing had to do with the overall perception of the school. On the prompts, "I am proud to go to this school," and "The community is proud of this school," males again responded less positively than their female peers. African American males averaged a 69 percent positive response rate between the two responses while African American females averaged an 80 percent positive response rate. Likewise, Caucasian males averaged a 73 percent positive response rate while Caucasian females averaged a 79 positive response rate. Males were less positive than females about pride in the building and African American males were the least positive.

In the end, for this category male students tended to have a lower positive score and a higher negative score. Pride in the school and a sense of knowing what they are learning seem to be specifically lower for African American boys. While most positive scores were over the 70 percent threshold African American boys had the most negative response rates over 10 percent. Therefore, improvements in this area should focus on males and be tailored towards African American males.

Improving Institutional Environment.

Recommendations related to improving positive perceptions of institutional environment:

1. Create an environment at school that best supports all students, especially minority students.
2. Create an environment at school that is positive and enjoyable.
3. Create a classroom structure that decreases negative discipline issues.

Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner, 1977) focused on the importance of the psychosocial role of the teacher, peers, and schools in the development of a child. Classroom environment variables affect the outcomes of students academically, socially, and emotionally (Hannah, 2013). Creating an environment where students work together for academic achievement could change some of the negative feelings about the school environment. Eisenhauer (2007), in his student collaboration research, found that cooperative group work changed student perceptions of school. Students perform best when they are working in collaboration with other students they like and get along with (Mitchell, Reilly, Bramwell, Solnosky, & Lilly, 2004). Cooperative learning promotes student relationships with peers and teacher (Eisenhauer, 2007; Roseth, Johnson, & Johnson, 2008). Working together can foster confidence about subject areas in which students may have previously struggled (Eisenhauer, 2007). Working with peers, rather than depending solely on teacher feedback, can lead students to explore and take more risks (Eisenhauer, 2007). Working in groups helps children learn to value each other (Davidson, 1990). Student collaboration allows them to question ideas and gain feedback from someone other than their teacher (Cohen, 1994). Successful collaborative learning groups show less off task behavior and spend more time in talk related to academic work (Cohen, Lotan, Abram, Scarloss, & Schultz, 2002,).

The possibilities of groupings in a diverse school, like the schools in the district of this study, have shown to produce positive and dynamic results in other studies. Kahlenburg (2012) found that when students were exposed to different learning environments and grouped with peers of different ethnic backgrounds they were essentially handed new ways to understand and look at not only education, but the wider lens of life in general. Chang, Astin, & Kim (2004) cited that working in diverse groups can increase problem-solving abilities and critical cognition. Frankenberg & Orfield (2007) concluded that experiences that allowed students to learn from and with each other are most successful to student achievement. They also found that the intercultural competencies gained from working collaboratively in a diverse classroom produces skills marketable in today's global economy. Cooperative learning facilitates a more comfortable and relaxed classroom environment (Eisenhauer, 2007). When blended correctly, diverse populations can actually create a more comfortable learning environment for children (McAllister & Irvine, 2002). Cooperative learning groups facilitate more active participation more of the time than traditional learning roles (Eisenhauer, 2007).

Interpersonal Relationships: African American and Caucasian Comparison by Ethnicity.

While the two groups tended to be positive and answer similarly, there were a couple of prompts that had noteworthy results. First, prompts evaluating student relationships such as: "Students at my school treat me with respect," and "Students at my school are friendly," received low positives. Regarding feeling respected by peers African Americans were 57 percent positive and 16 percent negative. Caucasian students

were even less positive at 54 percent, but showed the same percentage of negativity. To the prompt, "Students at my school are friendly", African American students were 55 percent positive and 13 percent negative. Caucasian students were even less positive at 47 percent and had a negative response rate of 11 percent. While Caucasians were a little less positive in these areas, African Americans were less positive in their responses concerning the student teacher relationship. They responded about eight percent less positive on prompts like "My teachers treat me with respect", and "Teachers in my school really care about me." In addition to the peer and teacher relationships, the question regarding the school counselor, "If I have a personal problem I can talk to the school counselor" also received low positive scores and high negative scores.

Over all, the prompts in this category showed a trend in weakness in positive attitudes towards climate perception in the areas of personal relationship with peers. While Caucasian students were a little less positive when it came to peer relationships, both groups noted issues in this area. While peer relationships stood out for both groups, African American students were a little less positive when it came to teacher relationships.

Interpersonal Relationships: African American and Caucasian Comparison by Ethnicity and Gender.

When adding gender as a variable, similar trends were highlighted. Peer relationships were still negative across the group with all groups scoring under 60 percent positive on the prompts "Students at my school treat me with respect" and "Students at my school are friendly." In fact, females were the least positive with only a 35 percent positive rating for "Students at my school are friendly." Each group also averaged a

negative rating over the 10 percent threshold for these two prompts. This indicated a clear problem with peer relationships in the district.

Looking at teacher relationships with the prompts "My teachers treat me with respect" and "Teachers in my school really care about me," indicated that Caucasian females had the most positive perception with positivity rates in the 90's and a negativity rates below five percent. While the other groups' scores averaged around an 80 percent positivity rating, African American males were slightly less positive with an average response rate of 78 percent. In the end all groups were over the 70 percent threshold, but Caucasian females indicated a more positive relationship with teachers than everyone else.

Student relationship with the counselor was another area of interest. On the prompt, "If I have a personal problem, I can talk to the counselor," all the groups responded near or below the 70 percent positive threshold. African American males and Caucasian males responded exactly the same at 60 percent and Caucasian females were at 66 percent. African American females were slightly more positive with a positivity response rate at 71 percent. In addition, all the groups had a higher than 10 percent negativity rating. Again, African American males and Caucasian males responded the same at 21 percent and Caucasian males responded the most negative at 22 percent. African American females were the least negative with a response rate of 13 percent. These results indicate a need for a more thorough look into the administration and counseling department in order to strengthen connectedness with all students.

Other prompts that met one or more threshold limits were the prompts: "When I am at school I feel I belong,'" and "Students are treated fairly." These prompts could be

associated with school connectedness. In this area both male groups responded less positive and more negative than their female counter parts. In addition, African American males had a 16 percent negative response rate on the prompt, "Students are treated fairly," which was at least five percent higher than the rest of the groups. This indicates that males in particular might have some trouble connecting with school and African American males have some concerns about fairness in school.

Improving Interpersonal Relationships.

Recommendations related to improving positive perceptions of interpersonal relationships at school:

1. Increase student sense of belonging at school by improving peer and teacher relationships.
2. Increase African American student sense of being treated fairly at school.

School connectedness, a social need, is the foundation to a student's ability to build positive relationships within the school (Epstein, 2007). The data showed that all student groups had a less positive and more negative perception of peer relationships. In addition, African American males had a more negative and less positive perception of teacher relationships and the idea of being treated fairly. Developing a sense of belonging and connection to school is imperative for African American student success (Booker, 2006). While this is true for all students, African Americans are considered a minority that are especially at risk in terms of academic failure and school dropout statistics (Balfanz et al., 2014). How the students interpreted whether or not they or their peers are treated fairly is uncertain, but research suggests that African American students

routinely identify a sense of discrimination and racial inequality in school (Hope, Skoog, & Jagers, 2015).

Moreover, George Wimberly wrote for ACT, a non-for-profit concerned with transitioning underserved youth into higher education, that the best way to affect the success of students is to create a program that best fosters positive relationships with peers and the teacher at the elementary level (Wimberly, 2002). Creating an environment for positive socialization with peers and with the classroom teacher, increases a student's sense of belonging at school (Stevenson & Stigler, 1994). In elementary education allowing play at times beyond the typical American style of midday, such as frequently during the day and after school, creates a place for positive socialization and an arena for all children to come to know each other personally on a different level (Burdetter & Whitaker, 2005; Hicks, 2014; Stevenson, 1991). The Association for Childhood Education International recommends that play can and should be used as vehicle for learning (Isenberg & Quisenberry, 2002). These mental breaks between subjects have shown to increase academic abilities (Kahan, 2008). Unstructured play breaks improve student perceptions of school as well as improving classroom behaviors (Ramstetter, Murray, & Garner, 2010).

Programs and interventions designed to include all students in a way that increases connectedness to school and a feeling of equal treatment can repair the negative feelings of exclusion and mistreatment. In a three-year study by Gregory Walton and Geoffrey Cohen (2011) a variable group of African American students were deliberately part of interventions to help them feel a better sense of belonging and safety on a college campus. In this study the achievement gap was significantly altered with the experimental

group as opposed to the control group for whom no extra interventions to create school connectedness were in place. Walton described a successful social belonging intervention as having some of the following four characteristics.

1. Difficulties are represented as both normal and temporary (Walton, 2014). This means that it is important to address negativity immediately or, for example, a feeling of exclusion. Label the feeling as temporary. Instead of labeling school as an unfair place, recognize specific examples of unfair treatment and isolate these incidences from the whole. Help students to feel that they are part of a group. Even if their opinions are negative, other students have and do feel that way too; they are not alone in their concerns. If a student voices a concern or shows symptoms of having a negative experience at school this should be addressed right away. Creating belonging and equality in treatment should be an immediate goal.

2. Balance positive and negative (Walton, 2014). Work for change at the school level, so that even though things may not be fair or equal, students see that something is being done to work towards equality. Do not allow students to normalize a negative feeling, or give in to accepting that school is not a place where they belong or is a place where they will simply not be treated fairly.

3. Use counter stereotypical examples (Walton, 2014). At the elementary school level this might look like providing strong African American male role models for students or allowing African American male students to see their community or culture broadcast in a positive way. African American children seldom see themselves or their culture portrayed in a positive way and this weighs them down (Ferguson, 2001).

4. Customize intervention materials (Walton, 2014). Each school has a unique building culture and what works in one school may not work in another even if demographics are the same. Interventions should be thoughtful and deliberate, addressing specific problems in the school and targeted to specific people.

Building level analysis through T-tests showed two elementary schools with statistically significant disparity in this category among Caucasian and African American students. These two buildings should be especially vigilant in taking steps to improve interpersonal relationships in their schools. Creating trust, morale, and a sense of inclusion for the student body as a whole will help bridge this statistical divide.

Safety: African American and Caucasian Comparison by Ethnicity.

The safety category only contains the prompt, "When I am at school, I feel I am safe." For this prompt African Americans responded 75 percent positive while Caucasians responded 76 percent positive. Both ethnicities responded negatively over 10 percent with African Americans having an 11 percent negative response rate and Caucasians having a 13 percent negative response rate.

Safety: African American and Caucasian Comparison by Ethnicity and Gender.

When adding gender as a variable the results remain essentially unchanged. African American boys perceive safety the least positive with a positive response rate of 70 percent and a negative response rate of 13 percent. African American females perceive safety the most positively with a positive rate of 80 percent and a negative response rate of 8 percent. Caucasians students are in the middle. Caucasian males had a 75 percent positive response rate and a 14 percent negative response rate. Their female counterparts had a positive response rate of 77 percent and a negative response rate of 12

percent. Overall females tended to feel safer, but the other three groups had over a 10 percent negative response rate.

Improving Safety.

Recommendations related to improving positive perceptions of safety at school:

1. Improve and enforce behavioral expectations.
2. Increase a sense of student bond to school.

These negative numbers about safety should be a concern to the district, as safety at school has direct links to academic and emotional growth and performance (Jackson, 2015). Maslow identified that feelings of safety and security are a basic human need that must be met as a building block to upward movement of self-actualization and educational attainment (Zalenski & Raspa, 2006). Though not categorized as a safety prompt, there was also a trend of students identifying negative responses to questions related to their peers. These negative peer relationships can affect a sense of safety for students in this district and without the basic building block of safety, a child cannot progress to a place of successful learning (Noltemeyer, Bush, Patton, & Bergen, 2012).

Improving school safety starts with defined expectations for student behavior. Clear, continuous, homogenous expectations for student behavior across the school is a foundational support to building a positive school climate (Wang & Degol, 2016). Expectations, rules, and consequents must be communicated to students, staff, and parents (Wentzel, Russell, & Baker, 2016). The expected behaviors should be modeled throughout the school. Progress should be tracked and rewarded. The expectations should be reviewed and reinforced regularly (Flannery, Fenning, Kato, & McIntosh, 2014).

In addition to improving behavioral expectations a pathway to increasing the student bond to the school can results in decreased negative behaviors such as bullying and disruptions (Olweus, 1991). Travis Hirschi (Gottfredson & Hirschi, 2016) developed a modern model of social control theory based on four tenants to improve this bond.

1. Visible school improvement - Staff and administrators dedicated to making environmental improvements to the school.
2. Relationship Building- Increasing student involvement in school based activities to help build peer relationships and relationships with staff.
3. Student Investment – Creating student-based initiatives and opportunities for identify buy-in within the school.
4. Establishing norms of the school- like behavioral expectations.

Teaching and Learning: African American and Caucasian Comparison by Ethnicity.

For the teaching and learning category the two groups answered similarly on a majority of the questions. However, there were a few instances of prompts that met the parameters for further discussion. First, there were two prompts where both groups answered below 70 percent positive and higher than 10 percent negative. For the prompt, "When I am at school I feel I have choices in what I learn," African Americans responded 56 percent positive and 20 percent negative while Caucasians scored 46 percent positive and 27 percent negative. This indicates that neither group feels that they have a choice in the learning process or what information is presented to them. In addition Caucasian students in this sample perceived their choice in learning to be considerably less positive and more negative than African American students. Both

groups of students also felt similar to the prompt, "My counselor makes visits to teach us about careers." African American students were 68 percent positive and 12 percent negative while Caucasian students were 64 percent positive and 15 percent negative. This reiterates the earlier mentioned finding that students both groups perceive a disconnect from the counseling department.

Next, the two groups answered the prompt, " I enjoy reading" similarly. They both answered the question more than 70 percent positive but also more than 10 percent negative. African American students responded 73 percent positive and 11 percent negative while Caucasian students answered 71 percent positive and 14 percent negative. These negatives are over the 10 percent threshold established for the analysis. These response rates could connect back to having a choice in learning or what they read.

The biggest difference in this category between the two groups was to the prompt, "When I am at school I have fun learning." For this category African American students had a 71 percent positive response rate and an 11 percent negative response rate. Conversely, Caucasian students had only a 63 percent positive response rate and a 14 percent negative response rate. This indicates that Caucasian students perceive less fun in the learning process than African American students.

For this category the responses were generally more positive and less negative across the category. However, the few noteworthy exceptions actually showed that Caucasian students tended to be more negative and less positive and that both groups would like more choice and more fun in their learning experiences.

Teaching and Learning: African American and Caucasian Comparison by Ethnicity and Gender.

When adding gender to the examination of this category, the results were generally the same. However, it became clearer that male students typically responded more negative than their female counterparts. Notable examples of this gender difference are to the prompts, "When I am at school I have choice in what I learn," and "When I am at school I have fun learning." To the first prompt African American males had a 53 percent positive response rate and a 26 percent negative response rate, while African American females responded positively 60 percent of the time and negatively 14 percent of the time. Caucasians were more negative with males responding positive 44 percent of the time and negatively 28 percent of the time and females responding positive 49 percent and negative 27 percent of the time.

The second prompt, "When I am at school I have fun learning," also highlights the male female split. For this response African American males responded 69 percent positive and 15 percent negative while their female counterparts responded 72 percent positive and seven percent negative. A similar difference existed between the Caucasian genders. Caucasian males had a 59 percent positive response rate and an 18 percent negative response rate, while Caucasian females had a 68 percent positive response rate and a nine percent negative response rate. These two prompts indicate that males and females have different perceptions in the teaching and learning category.

Although there were other various nuances within this category, the major theme presented was that all sets of students perceive a lack of choice and fun in learning. Male students tended to be more negative than their female counterparts with Caucasian males often being the least positive and the most negative. The only exception to this being that African American male students were less positive and more negative on the prompt,

"My teachers think I will be successful." In the end, a focus of improving student choice in learning will help improve the scores in this category.

Improving Teaching and Learning.

Recommendations related to improving positive perceptions teaching and learning at school:

1. Allow student choice in learning.

Deci and Ryan's Self-Determination Theory (1991) is centered on the three psychological needs of competence, autonomy, and relatedness. Offering choice and allowing students to work together in collaboration actualizes all three of these needs. Establishing a classroom that offers autonomy and choice increases student engagement (Brophy, 2013). Utilizing collaborative models of learning can help teachers allow choice, through choice of partner, groups, or choice of activity. Research on collaborative models has shown that when students contribute to a group and are allowed input into decision-making autonomy is reached (Solomon et al., 2000). The most successful classrooms are where children are allowed a wide range of choice of activity (Stevenson, 1991).

In this category the perception of the teacher was a relative strength for the district, although African American boys and Caucasian boys were more negative than the girls. A positive relationship with a teacher is imperative for student success. The relationship with the teacher is directly related to language and reading skill acquisition at the K-2nd grade level (Burchinal, Peisner-Feinberg, Pianta, & Howes, 2002). Students desire to be close to their teachers, this is especially true for minority students (Kesner, 2000). According to the survey in the area of teaching and learning students were overall

positive about their teachers responding that they learned, had good teachers, and were given confidence from their teacher and felt confident in themselves that they could learn.

RQ 3

Throughout the years many researchers have sought to understand school climate and its impact on students. Many have shown that a positive school climate can have various impacts on students (Cohen, McCabe, Michelli, & Pickeral, 2009; MacNeil, Prater, & Busch, 2009; Ortega, Sanchez, Ortega-Rivera, & Viejo, 2011). One consistent impact has been a connection between school climate and academic achievement. Various researchers over the years have shown correlations between school climate and academic achievement. For example, a recent 16-year long study by Ruth Berkowitz, Hadass Moore, Ron Avi Astor, and Rami Benbenishty (2016) published in *Review of Education Research* found that schools and classroom with positive, supportive environments positively influence academic gains, potentially reducing achievement gaps. The study further found that a positive school climate has the ability to combat negative academic gains associated with low socioeconomic status. The researchers suggested that more studies are needed relating climate the academic success. However, many of those studies have used a variety of climate measurement tools to measure school climate and different methods of assessing student achievement.

While these studies found a positive correlation between school climate and student academic achievement, this study did not. When looking at total climate scores compared to the ELA and Math MAP tests no significant correlation was found. In addition, when comparing each climate category independently to each of the MAP tests no significant correlations were observed. While these results contradict much of the

earlier research in the field, they are not alone in their implications. In her dissertation research, Jennifer Gaddie (2014) investigated if student, parent and faculty responses on the Missouri Advanced Questionnaire survey correlated with ELA results for elementary school students in poverty districts. She also found no significant correlation between student climate responses and ELA MAP results. While the exact methodologies differed between these two studies, they used a similar population for their studies. Both studies focused on elementary schools that had a high free and reduced lunch population.

Although support exists to substantiate this study, there is likely some study-based issues that lead to these different findings as well. As mentioned earlier the strength of the linear regression test could have been improved by using individual data instead of group means. A climate survey that that did not have neutral category would have potentially given a better representation of climate data. Finally increasing the sample size would have strengthened the results of the regression test.

In the end, this study provides a different point of view worth noting in the school climate and academic achievement research. Future researchers in this area should be aware of the negative results found in this study and others to best ensure they are creating a research methodology that will provide the best results. While this study did not show a significant correlation between school climate and academic achievement many studies have and this issue continues to be a challenge in education.

Recommendations for the District Based on Findings

Findings of this study revealed different means in school climate categories for African American and Caucasian males and females. Caucasian and African American male students were especially negative throughout the survey. This study also revealed

certain categorized questions answered negatively by both genders and ethnic groups. Based on these findings detailed in Chapter Four and Five the authors recommend the district look at the following classroom, building level, and school wide school climate improvements to raise climate perceptions across the district.

1. Create a culture of high expectations for all students.
2. Build the male student connection to teacher.
3. Strengthen female peer connections.
4. Increase school connectedness and belonging.
5. Increase male student enjoyment of reading.

To address all of the areas the authors recommend the teachers, building supervisors, and district supervisors consider increasing group learning time by facilitating cooperative learning groups. This style of learning creates high expectations, builds stronger peer relationships, cuts down on negative teacher interactions, and helps facilitate choice in learning as detailed in the next sections.

Create High Expectations

Holding high standards and allowing students to shape their environment through choice in learning and group work helps establish high expectations for learning (Barkley, Cross & Major, 2014). Avoiding marginalizing by bringing together students in a group can solve the "nobody" epidemic that is pervasive among African American male students and alleviate behavior problems that stem from feelings of helplessness and hopelessness (Payne, 1984). If children who are typically underserved are given the means to succeed in a system that has previously contributed to their stagnation and failure, gap closing could be possible (Payne, 1984).

Achievement motivation is affected by the culture of a school and society (Trumbull & Rothstein-Fisch, 2011). Cultural values are socially learned and much of this social learning occurs at school (Trumbull & Rothstein-Fisch, 2011). Just like other school and intellectually based goals, "social goals can help organize, direct, and empower individuals to achieve more fully" (Covington, 2000, pg. 178). Creating climate improvement goal based on achievement and successful socialization increases the expectations across the school.

Teachers should hold students accountable for their education by increasing academic accountability (Delpit, 2012). When students work together they form an understanding of their role in their education and have increased ownership in the learning process (Savery & Duffy, 1995). The concept of building a working knowledge together is deeply rooted in the early work of Vygotsky (Moll, 1992). A study by Fawcett and Garton (2011), based on Vygotskian framework of first grade students who collaborated collectively on math based sorting activities, showed that all children who participated in collaborative collectivism improved their individualized test scores. Their studies showed that problem solving abilities were enhanced by working as a part of a collaborative group (Fawcett & Garton, 2011). High teacher expectations and ability to convey those expectations to students is repeatedly cited as the catalyst to student success, even when other factors, like resources and home life are taken into consideration (Cohen, 1980).

Improve Teacher-Student Relationships

The teacher perception of the relationship with students and the student perception of their relationship with the teacher directly impacts academic outcomes

(Hamre & Pianta, 2001; Murray & Greenberg, 2000). Codes to the relationship between teacher and student are verbal and nonverbal, based on the amount of negative speech a teacher gives to a single student or the tone of voice (Hughes, Cavell, & Wilson, 2001). The proximity of the teacher to a student and the amount of time the teacher spends with a student are ways that children and adults qualify the relationship. Identifying children in groups eliminates some of the negative singling out that occurs in urban classrooms. Research shows that boys (Furrer & Skinner, 2003), students with disabilities (Murray & Greenberg, 2001), students not equipped for the rigor of school (Blankemeyer, Flannery, & Vazsonyi, 2002) and minority students (Kesner, 2000) are most at risk to have a negative relationship with their teacher.

Teacher student relationships in education can be a hurdle to student success (Goddard, Tschannen-Moran, & Hoy, 2001). The perception of teacher support is documented as one of the largest contributors to young African American men staying in school (Hudley & Daoud, 2008). Belonging is the largest indicator of student success, especially where minority students are concerned (Ibanez, Kupermine, Jurkovic, & Perilla, 2004). Students working together with increased teacher proximity and decreased independent work time can facilitate success.

Strengthen Peer Relationships

In addition to increasing low-monitored free play as detailed in the Improving Interpersonal Relationships section, schools can also teach bonding activities (Oden & Asher, 1977). Socialization and citizenship should be integrated into the district curriculum to strengthen those at risk relationships identified by the climate survey, particularity the female view of friendliness of peers. Character education is a widely

used addition to the curriculum that has been shown to increase positive peer relationships (Berkowitz & Me'inda, 2003).

Increase School Connectedness and Belonging

Creating an environment of collaborative, collective learning in groups, or the popular cooperative learning approach, has been shown to increase academic achievement, lower negative behaviors, and improve teacher relationships with students through less negative speech by the teacher, lowered independent work time or alone time, and closer teacher proximity (Wubbels & Brekelmans, 2005). The basis of the success of cooperative or collaborative learning is that the achievement of one student extends to the success of the members of that student's group (Slavin, 1982). Collectivism supports working with peers in a supported and symbiotic way, contributing to positive students perceptions of the school climate. When students are in a classroom environment where they can work cooperatively on learning tasks they benefit academically and socially (Slavin, 1982). Creating a connection to peers and teacher promotes connection to educational and learning materials to create value and meaning in education, something that African American male students especially struggle with in current curriculum driven towards a majority versus minority population (Lewis, 1995). Grouping allows children to find a place of competence (Lewis, 1995). Research steeped in sociocultural theory found that working together, even when one partner has a much lower ability level, helps develop creativity and fosters a positive learning environment (Ohta, 1995). Adults and peers, according to sociocultural theory, are the primary influencers of individual learning (Jaramillo, 1996).

Male students especially need a source of empowerment within the education system and Solomon et al. (2000) observed in their Child Development Project that was the exact effect of collaboration on students. When students contribute to a group and are allowed input into decision-making autonomy is reached. Competence is actualized by successful integration into a group and being accepted for social and academic efforts (Solomon et al., 2000). Students can find belonging at school by finding individual acceptable and also realizing acceptance as part of a cohesive unit (Solomon, et al., 2000). Solomon et al. (2000) found that what created internalized competence were the relationships the students fostered with each other and their teacher. Working with peers in a supported and symbiotic way, contributing to each other, promoted personal and social development. When students bonded with their groups emotionally and their membership was accepted their motivation to support and contribute to the group was a driving factor in their school success (Solomon et. al., 2000). As long as this allegiance does not exclude the teacher it could be a strong way to help the students connect to school. The idea of cliques, which is so taboo in the bullying society of American, could be exactly what male students need to find their voice in education.

Increase Male Enjoyment of Reading

The male students gave negative responses on the school climate survey to the prompt related to enjoyment of reading. A culture of reading is a building block to female success at school, and cited as one reason for the gender gap in achievement (Houtte, 2004). The district should focus on developing a male centered reading curriculum. Providing more relevant text for boys, choice in reading material, real life

connection to texts, and kinesthetic learning activities are ways to increase male connection to text (Smith & Wilhelm, 2009).

Recommendations for Future Research

This research showed a lack of statistically relevant relationships between school climate and achievement based on linear regression tests. Looking back to the study by Voight, Hanson, O'Malley, & Adekanye (2015), presented in Chapter One as a foundation, there are still many unanswered questions about the achievement gap and the role of school climate. Geographic location of the school, student to teacher ratio, and socioeconomic disparities were all considered by Voight, Hanson, O'Malley, & Adekanye to be players in the achievement gap. These areas and many others could be further researched against the data presented here for this school district to add to the research base. Recommendations for future research include:

1. Expand this study to include more school districts
2. Expand this study to include all k-12 students
3. Expand this study to include teachers and parents
4. Repeat the study with a different tool to measure school climate
5. Repeat the study with the shortcomings mentioned in this study addressed ie. sample equality, survey demographics question, reversed score question, independent MAP scores, and elimination of neutral option
6. Design a study focused on student growth as a measure of academic achievement

7. Design studies focused on elementary student achievement and other areas discussed related to the achievement gap (i.e. SES status, teacher relationships, school connectedness, various sociocultural theories)

Conclusion

The purpose of this study was to investigate if perceptions of school climate were different between African American students and Caucasian students, and to investigate if school climate had a statistically relevant relationship to academic achievement. While the study did not support a statistically significant difference between African American students and Caucasian students across the district, it did highlight some building level differences. In addition, this study pointed out small perception differences on individual climate prompts that are worth investigating further. Finally, this study pointed out significant gender difference that exists within the researched district. This finding was unexpected and warrants further investigation.

These findings lead to some recommendations for the researched school district. First, the district should recognize that each school building has its own unique climate. Therefore, as district wide policy is pushed out, district leadership should consider what is happening at the individual building level. Holistic district wide approaches might not be the best solution. Currently the district has one building whose white population has a much more negative climate than its African American population. This building does not need the same interventions as a building whose African American population has a less negative perception than whites. Therefore, while it may be able to roll out interventions systematically, it may be more affective to evaluate buildings independently and create interventions specific to that building.

Second, this district has spent many years trying to improve the African American student experience but might need to investigate improving the male student experience.. At this point, this study indicates that African American and white students have pretty similar perceptions across the district, but males and females have statistically different perspectives across the district. This indicates that while the district has made progress over the years equalizing the ethnic perception at the elementary level, it has not had the same success on the gender perception difference. Being that this difference was statistically significant across the district, district leadership should investigate best practices in improving the male perception of school.

Third, a variety of small nuances were noticed. These included:

1. The need to create high expectations for all students
2. The need to increase male student connectedness to teacher
3. The need to strengthen female peer relationship
4. The need to increase school connectedness and belonging among all students
5. The need to improve the male enjoyment of reading.

Each of these small but relevant findings were discussed and recommendations were made on how the district could make improvements to these areas.

Although this study did not find a correlation between school climate and academic achievement it provides another piece of literature to consult as debate continues in the field. No educational problem is answered in one study. This study has expanded the current literature, and provided additional insight into the school climate debate that was previously unavailable. By making the suggested improvements to this

study, and focusing on some of the suggested areas for future research, future investigators could add some valuable information to the achievement gap debate.

References

Acs, G., Braswell, K., Sorensen, E., & Turner, M. A. (2013). The Moynihan report revisited. *The Urban Institute*.

American Psychological Association. (2015). *Education and Socioeconomic Status Fact Sheet*. Retrieved from http://www.apa.org/pi/ses/resources/publications/factsheet-education.aspx.

Anderson, J. R. (1982). Acquisition of cognitive skill. *Psychological review*, *89*(4), 369.

Aronson, J. (1995). A pragmatic view of thematic analysis. *The qualitative report*, *2*(1), 1-3.

Astone, N. M., & McLanahan, S. S. (1991). Family structure, parental practices and high school completion. *American sociological review*, 309-320.

Astor, R. A., Guerra, N., & Van Acker, R. (2010). How can we improve school safety research?. *Educational researcher*, *39*(1), 69-78.

Au, K. H., & Valencia, S. W. (2010). Fulfilling the potential of standards-based education: Promising policy principles. *Language Arts*, *87*(5), 373.

Baker, J. A. (1998). The social context of school satisfaction among urban, low-income, African-American students. *School Psychology Quarterly*, *13*(1), 25.

Balfanz, R., Bridgeland, J. M., Fox, J. H., DePaoli, J. L., Ingram, E. S., & Maushard, M. (2014). Building a Grad Nation: Progress and Challenge in Ending the High School Dropout Epidemic. Annual Update 2014. *Civic Enterprises*.

Barkley, S., Bottoms, G., Feagin, C. H., & Clark, S. (2001). *Leadership Matters: Building Leadership Capacity.* Atlanta, GA: Southern Regional Education Board.

Barkley, E. F., Cross, K. P., & Major, C. H. (2014). *Collaborative learning*

techniques: A handbook for college faculty. John Wiley & Sons.

Barton, P. E., & Coley, R. J. (2010). The Black-White Achievement Gap: When Progress Stopped. Policy Information Report. *Educational Testing Service*.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychological bulletin*, *117*(3), 497.

Beglau, M. M. (2005). Can Technology Narrow the Black-White Achievement Gap?. *THE Journal*, *32*(12), 13-17.

Battistich, V., Solomon, D., Kim, D., & Watson, M. (1995). Schools as communities, poverty levels of student populations, and students' attitudes, motives, and performance: A multilevel analysis. *American Educational Research Journal*, *32(3)*, 627 – 658.

Bishop, G. F. (1987). Experiments with the middle response alternative in survey questions. *Public Opinion Quarterly*, *51*(2), 220-232.

Berkowitz, M. W., & Me'inda, C. B. (2003). Character education. *The Role of Moral Reasoning on Socioscientific Issues and Discourse in Science Education*, *19*, 117.

Berkowitz, R., Moore, H., Astor, R. A., & Benbenishty, R. (2016). A research synthesis of the associations between socioeconomic background, inequality, school climate, and academic achievement. *Review of Educational Research*.

Berlak, H. (2001). Race and the achievement gap. *Rethinking Schools*, *15*(4), 10-11.

Blankemeyer, M., Flannery, D. J., & Vazsonyi, A. T. (2002). The role of aggression and social competence in children's perceptions of the child–teacher relationship. *Psychology in the Schools*, *39*(3), 293-

304.

Bloom, B. S. (1964). *Stability and change in human characteristics*. New York: Wiley.

Bloom, B., Cohen, R. A., Vickerie, J. L., & Wondimu, E. A. (2003). Summary health statistics for US children: National Health Interview Survey, 2001. *Vital and health statistics. Series 10, Data from the National Health Survey*, (216), 1-54.

Booker, K. C. (2006). School belonging and the African American adolescent: What do we know and where should we go?. *The High School Journal*, *89*(4), 1-7.

Borman, G., & Dowling, M. (2010). Schools and inequality: A multilevel analysis of Coleman's equality of educational opportunity data. *Teachers College Record*, *112*(5), 1201-1246.

Bosworth, K., Ford, L., & Hernandaz, D. (2011). School climate factors contributing to student and faculty perceptions of safety in select Arizona schools. *Journal of School Health*, *81*(4), 194-201.

Bronfenbrenner, U. (1961). The changing American child: A speculative analysis. *Journal of Social Issues*, *17*(1), 6-18.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, *32*(7), 513.

Bronfenbrenner, U. (1979). Contexts of child rearing: Problems and prospects. *American Psychologist*, *34* (10), 844.

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology*, *22*(6), 723.

Bronfenbrenner, U. (1994). Ecological models of human development. *Readings on the development of children*, *2*, 37-43.

Bronfenbrenner, U. (2009). *The ecology of human development: Experiments by nature and design*. Harvard University Press.

Brookover, W. B. (1979). *School social systems and student achievement: Schools can make a difference*. Praeger Publishers.

Brophy, J. E. (1979). Teacher behavior and its effects. *Journal of Educational Psychology*, *71*(6), 733.

Brophy, J. E. (2013). *Motivating students to learn*. Routledge.

Brophy, J. E., & Good, T. L. (1970). Teachers' communication of differential expectations for children's classroom performance: Some behavioral data. *Journal of Educational Psychology*, *61*(5), 365.

Brown, D. F. (2003). Urban teachers' use of culturally responsive management strategies. *Theory into Practice*, *42*(4), 277-282.

Brown, E. (2015) This superintendent has figured out how to make school work for poor kids. *The Washington Post*. Retrieved from: https://www.washingtonpost.com/local/education/this-superintendent-has-figured-out-how-to-make-school-work-for-poor-kids/2015/12/20/cadac2ca-a4e6-11e5-ad3f-991ce3374e23_story.html?utm_term=.987654ec0a6b

Burchinal, M. R., Peisner-Feinberg, E., Pianta, R., & Howes, C. (2002). Development of academic skills from preschool through second grade: Family and classroom predictors of developmental trajectories. *Journal of School Psychology*, *40*(5), 415-436.

Burdette, H. L., & Whitaker, R. C. (2005). Resurrecting free play in young children: looking beyond fitness and fatness to attention, affiliation, and affect. *Archives of pediatrics & adolescent medicine*, *159*(1), 46-50.

Centers for Disease Control and Prevention (2009). National health and nutrition examination survey.

Carroll Massey, G., Vaughn Scott, M., & Dornbusch, S. M. (1975). Racism without racists: Institutional racism in urban schools. *The Black Scholar*, *7*(3), 10-19.

Centers for Disease Control. (2013). Make a difference at your school.

Chang, M. J., Astin, A. W., & Kim, D. (2004). Cross-racial interaction among undergraduates: Some consequences, causes, and patterns. *Research in Higher Education*, *45*(5), 529-553.

Chitty, C. (2007). *Eugenics, race and intelligence in education*. Bloomsbury Publishing.

Chirkov, V., Ryan, R. M., Kim, Y., & Kaplan, U. (2003). Differentiating autonomy from individualism and independence: a self- determination theory perspective on internalization of cultural orientations and well-being. *Journal of personality and social psychology*, *84*(1), 97.

Clark, V. L. P., & Creswell, J. W. (2014). *Understanding research: A consumer's guide*. Pearson Higher Education.

Cohen, E. G. (1980). *Teacher Application Pamphlet: Designing Change for the Classroom. Final Report.* Status Equalization Project: Changing Expectations in the Integrated Classroom.

Cohen, P. R. (1995). *Empirical methods for artificial intelligence* (Vol. 139). Cambridge: MIT press.

Cohen, E. G., Lotan, R. A., Abram, P. L., Scarloss, B. A., & Schultz, S. E. (2002). Can groups learn? *Teachers College Record*, *104*(6), 1045-1068.

Cohen, J., McCabe, L., Michelli, N. M., & Pickeral, T. (2009). School climate: Research, policy, practice, and teacher education. *Teachers College Record*, *111*(1), 180-213.

Collins, J. W., & O'Brien, N. P. (2011). *The Greenwood dictionary of education*.

Condron, D. J., Tope, D., Steidl, C. R., & Freeman, K. J. (2013). Racial segregation and the black/white achievement gap, 1992 to 2009. *The Sociological Quarterly*, *54*(1), 130-157.

Cornell, D. G., & Sheras, P. L. (2006). *Guidelines for responding to student threats of violence*. Sopris West Educational Services.

Covington, M. V. (2000). Goal theory, motivation, and school achievement: An integrative review. *Annual review of psychology*, *51*(1), 171-200.

Creswell, J. W. (2015). Revisiting mixed methods and advancing scientific practices. In *The Oxford handbook of multimethod and mixed methods research inquiry*.

Crichlow, W. (Ed.). (2013). *Race, identity, and representation in education*. Routledge.

Cross, D. I., & Hong, J. Y. (2012). An ecological examination of teachers' emotions in the school context. *Teaching and Teacher Education*, *28*(7), 957-967.

Darling-Hammond, L., LaPointe, M., Meyerson, D., & Orr, M. T. (2007). Preparing School Leaders for a Changing World: Lessons from Exemplary Leadership

Development Programs. School Leadership Study. Executive Summary. *Stanford Educational Leadership Institute*.

Darwin, C. (1872). *The origin of species*. London: John Murray.

Deal, T. E., & Peterson, K. D. (1999). Shaping school culture: The heart of leadership. *Adolescence*, *34*(136), 802.

Deary, I. J. (2001). *Intelligence: A Very Short Introduction.* Oxford: Oxford University Press.

Deci, E. L., & Vansteenkiste, M. (2004). Self-determination theory and basic need satisfaction: Understanding human development in positive psychology. *Ricerche di psicologia*.

Delpit, L. D. (2012). *" Multiplication is for White People": Raising Expectations for Other People's Children*. The New Press.

Désert, M., Préaux, M., & Jund, R. (2009). So young and already victims of stereotype threat: Socio-economic status and performance of 6 to 9 years old children on Raven's progressive matrices. *European Journal of Psychology of Education*, *24*(2), 207-218.

Devine, J. F., & Cohen, J. (2007). *Making your school safe: Strategies to protect children and promote learning*. Teachers College Press.

Dixson, A. D., & Rousseau, C. K. (2005). And we are still not saved: Critical race theory in education ten years later. *Race ethnicity and education*, *8*(1), 7-27.

Douglas, B., Lewis, C. W., Douglas, A., Scott, M. E., & Garrison-Wade, D. (2008). The impact of white teachers on the academic achievement of black students: An

exploratory qualitative analysis. *The Journal of Educational Foundations*, *22*(1/2), 47.

Eisenhauer, J. (2007). Just looking and staring back: Challenging ableism through disability performance art. *Studies in Art Education*, *49*(1), 7-22.

Elder, C. (1997). What does test bias have to do with fairness?. *Language Testing*, *14*(3), 261-277.

Eliot, M., Cornell, D., Gregory, A., & Fan, X. (2010). Supportive school climate and student willingness to seek help for bullying and threats of violence. *Journal of school psychology*, *48*(6), 533-553.

Epstein, J. L. (1987). What principals should know about parent involvement. *Principal*, *66*(3), 6-9.

Epstein, J. L. (2001). *School, family, and community partnerships: Preparing educators and improving schools*. Boulder, CO: Westview Press.

Fan, W., Williams, C. M., & Corkin, D. M. (2011). A multilevel analysis of student perceptions of school climate: The effect of social and academic risk factors. *Psychology in the Schools*, *48*(6), 632-647.

Fawcett, L. M., & Garton, A. F. (2005). The effect of peer collaboration on children's problem-solving ability. *The British Journal of Educational Psychology*, *75*, 157–169.

Ferguson, A. A. (2001). *Bad boys: Public schools in the making of black masculinity*. University of Michigan Press.

Fink, A. (2002). *How to ask survey questions* (Vol. 4). Sage.

Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research*, *59*(2), 117-142.

Finnan, C., Schnepel, K. C., & Anderson, L. W. (2003). Powerful learning environments: The critical link between school and classroom cultures. *Journal of Education for Students Places at Risk*, *8*(4), 391-418.

Flannery, K. B., Fenning, P., Kato, M. M., & McIntosh, K. (2014). Effects of school-wide positive behavioral interventions and supports and fidelity of implementation on problem behavior in high schools. *School Psychology Quarterly*, *29*(2), 111.

Flaugher, R. L. (1978). The many definitions of test bias. *American Psychologist*, *33*(7), 671.

Flynn, J. R. (1999). "Evidence against Rushton: The genetic loading of the Wisc-R subtests and the causes of between-group IQ differences". *Personality and Individual Differences*, *26*, 373–93.

Flynn, J. R. (2000). IQ gains, WISC subtests: g theory and the relevance of Spearman's hypothesis to race. *The Nature of Intelligence*, 202.

Fordham, S., & Ogbu, J. U. (1986). Black students' school success: Coping with the "burden of 'acting white'". *The Urban Review*, *18*(3), 176-206.

Frankenberg, E., & Orfield, G. (Eds.). (2007). *Lessons in integration: Realizing the promise of racial diversity in American schools*. University of Virginia Press.

Freiberg, H. J. (1998). Measuring School Climate: Let me count the ways. *Educational leadership*, *56*(1), 22-26.

Freiberg, H. J. (1999). *School climate: Measuring, improving, and sustaining healthy learning environments*. Psychology Press.

Freudenthaler, H. H., Spinath, B., & Neubauer, A. C. (2008). Predicting school achievement in boys and girls. *European Journal of Personality*, *22*(3), 231-245.

Fryer Jr, R. G., & Levitt, S. D. (2004). Understanding the black-white test score gap in the first two years of school. *Review of Economics and Statistics*, *86*(2), 447-464.

Fordham, S., & Ogbu, J. U. (1986). Black students' school success: Coping with the "burden of 'acting white'". *The urban review*, *18*(3), 176-206.

Fullan, M. (2007). Change theory as a force for school improvement. *Intelligent Leadership*. Springer Netherlands.

Furrer, C., & Skinner, E. (2003). Sense of relatedness as a factor in children's academic engagement and performance. *Journal of educational psychology*, *95*(1), 148.

Gaddie, K. J. (2014). *The Relationships Between Faculty, Parent, and Student Perceptions of School Climate and Student Achievement*. Doctoral dissertation, Baker University.

Galton, F. (1869). *Hereditary genius: An inquiry into its laws and consequences* (Vol. 27). Macmillan.

Gay, G. (2010). *Culturally responsive teaching: Theory, research, and practice*. Teachers College Press.

Gentry, M., Steenbergen-Hu, S., & Choi, B. Y. (2011). Student-identified exemplary teachers: Insights from talented teachers. *Gifted Child Quarterly*, *55*(2), 111-125.

Ghaith, G. (2003). Effects of the learning together model of cooperative learning on English as a foreign language reading achievement, academic self-esteem, and feelings of school alienation. *Bilingual Research Journal*, *27*(3), 451-474.

Gillham, N. W. (2001). Sir Francis Galton and the birth of eugenics. *Annual review of genetics*, *35*(1), 83-101.

Goddard, R. D., Tschannen-Moran, M., & Hoy, W. K. (2001). A multilevel examination of the distribution and effects of teacher trust in students and parents in urban elementary schools. *The Elementary School Journal*, *102*(1), 3-17.

Gonzales, N. A., Cauce, A. M., Friedman, R. J., & Mason, C. A. (1996). Family, peer, and neighborhood influences on academic achievement among African-American adolescents: One-year prospective effects. *American journal of community psychology*, *24*(3), 365-387.

Gottfredson, G. D., Gottfredson, D. C., Payne, A. A., & Gottfredson, N. C. (2005). School climate predictors of school disorder: Results from a national study of delinquency prevention in schools. *Journal of Research in Crime and Delinquency*, *42*(4), 412-444.

Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*. Stanford University Press.

Gregory, A., Cornell, D., Fan, X., Sheras, P., Shih, T. H., & Huang, F. (2010). Authoritative school discipline: High school practices associated with lower bullying and victimization. *Journal of Educational Psychology*, *102*(2), 483.

Griffith, J. (2000). School climate as group evaluation and group consensus: Student and

parent perceptions of the elementary school environment. *Elementary School Journal, 101,* 35 – 61.

Hale, J. E. (2001). *Learning while Black: Creating educational excellence for African American children*. JHU Press.

Haller, E. J. (1985). Pupil race and elementary school ability grouping: are teachers biased against black children?. *American Educational Research Journal*, *22*(4), 465-483.

Hallinger, P., & Murphy, J. F. (2013). Running on empty? Finding the time and capacity to lead learning. *NASSP Bulletin*.

Halpin, A., & Croft, D. (1963). The organizational climate and individual value systems upon job satisfaction. *Personnel Psychology*, *22*, 171-183.

Hannah, R. (2013). The effect of classroom environment on student learning. *Western Michigan University*, *12*.

Hanushek, E. A., & Rivkin, S. G. (2007). Pay, working conditions, and teacher quality. *The Future of Children*, 69-86.

Hamre, B. K., & Pianta, R. C. (2001). Early teacher–child relationships and the trajectory of children's school outcomes through eighth grade. *Child development*, *72*(2), 625-638.

Hartley, J. (2014). Some thoughts on Likert-type scales. *International Journal of Clinical and Health Psychology*, *14*(1), 83-86.

Haynes, N. M., Emmons, C., & Ben-Avie, M. (1997). School climate as a factor in student adjustment and achievement. *Journal of educational and psychological consultation*, *8*(3), 321-329.

Hill, T. (2011). *Every closed eye ain't sleep: African American perspectives on the achievement gap*. R&L Education.

Hollie, S. (2011). *Culturally and linguistically responsive teaching and learning: Classroom practices for student success*. Teacher Created Materials.

Hope, E. C., Skoog, A. B., & Jagers, R. J. (2015). "It'll never be the white kids, it'll always be us" Black high school students' evolving critical analysis of racial discrimination and inequity in schools. *Journal of Adolescent Research*, *30*(1), 83-112.

Houtte, M. V. (2004). Why boys achieve less at school than girls: The difference between boys' and girls' academic culture. *Educational studies*, *30*(2), 159-173.

Howard, T. C. (2015). *Why race and culture matter in schools: Closing the achievement gap in America's classrooms*. Teachers College Press.

Hucks, D. C. (2014). *New visions of collective achievement: The cross-generational schooling experiences of African American males*. Springer.

Hudley, C., & Daoud, A. (2008). Cultures in Contrast: Understanding the Influence of Student Culture on Student Engagement. *Academic Motivation and the Culture of Schooling*.

Hughes, J. N., Cavell, T. A., & Wilson, V. (2001). Further support for the developmental significance of the quality of the teacher-student relationship. *Journal of School Psychology*, *39*(4), 289-301.

Inzlicht, M., & Ben-Zeev, T. (2000). A threatening intellectual environment: Why females are susceptible to experiencing problem-solving deficits in the presence of males. *Psychological Science*, *11*(5), 365-37.

Herrnstein, R. J., & Murray, C. (1994). *Bell curve: Intelligence and class structure in A merican life*. Simon and Schuster.

Ibañez, G. E., Kuperminc, G. P., Jurkovic, G., & Perilla, J. (2004). Cultural attributes and adaptations linked to achievement motivation among Latino adolescents. *Journal of Youth and Adolescence*, *33*(6), 559-568.

Irvine, J. J. (1989). Beyond role models: An examination of cultural influences on the pedagogical perspectives of Black teachers. *Peabody Journal of Education*, *66*(4), 51-63.

Isenberg, J. P., & Quisenberry, N. (2002). A position paper of the Association for Childhood Education International PLAY: Essential for all Children. *Childhood Education*, *79*(1), 33-39.

Jackson, D. (2015). Employability skill development in work-integrated learning: Barriers and best practice. *Studies in Higher Education*, *40*(2), 350-367.

Jaramillo, J. A. (1996). Vygotsky's sociocultural theory and contributions to the development of constructivist curricula. *Education*, *117*(1), 133.

Jensen, A. (1969). How much can we boost IQ and scholastic achievement. *Harvard educational review*, *39*(1), 1-123.

Jensen, A. R. (1973) Educability and group differences. New York: Harper and Row.

Jensen, A. R. (1980). *Bias in Mental Testing.* Free Press.

Jensen, A. R. (1982). Reaction time and psychometric g. In *A model for intelligence* (pp. 93-132). Springer Berlin Heidelberg.

Jencks, C., & Phillips, M. (1998). *The Black-White test score gap*. Brookings Institution Press.

Jeynes, W. H. (2005). A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. *Urban education*, *40*(3), 237-269.

Johns, R. (2005). One size doesn't fit all: Selecting response scales for attitude items. *Journal of Elections, Public Opinion & Parties*, *15*(2), 237-264.

Kahan, D. (2008). Recess, extracurricular activities, and active classrooms: Means for increasing elementary school students' physical activity. *Journal of Physical Education, Recreation & Dance*, *79*(2), 26-39.

Kahlenberg, R. D. (2012). *The Future of School Integration: Socioeconomic Diversity as an Education Reform Strategy*. New York, NY: Century Foundation.

Kesner, J. E. (2000). Teacher characteristics and the quality of child–teacher relationships. *Journal of School Psychology*, *38*(2), 133-149.

Klein, J. (2012). *The bully society: School shootings and the crisis of bullying in America's schools*. NYU Press.

Koth, C. W., Bradshaw, C. P., & Leaf, P. J. (2008). A multilevel study of predictors of student perceptions of school climate: The effect of classroom-level factors. *Journal of Educational Psychology*, *100*, 96-104.

Kozol, J. (2012). *Savage inequalities: Children in America's schools*. Broadway Books.

Krosnick, J. A. (1991). Response strategies for coping with the cognitive demands of attitude measures in surveys. *Applied cognitive*

psychology, *5*(3), 213-236.

Krosnick, J. A., Holbrook, A. L., Berent, M. K., Carson, R. T., Hanemann, W. M., Kopp, R. J., ... & Moody, W. R. (2002). The impact of" no opinion" response options on data quality: non-attitude reduction or an invitation to satisfice?. *Public Opinion Quarterly*, *66*(3), 371-403.

Lacour, M., & Tissington, L. D. (2011). The effects of poverty on academic achievement. *Educational Research and Reviews*, *6*(7), 522-527.

Ladd, H. F. (2012). Education and poverty: Confronting the evidence. *Journal of Policy Analysis and Management*, *31*(2), 203-227.

Ladson-Billings, G., & Tate, W. F. (1995). Toward a critical race theory of education. *Teachers College Record*, *97*(1), 47.

Ladson-Billings, G. (2005). Is the team all right. *Journal of Teacher Education*, *56*(3), 229-234.

Ladson-Billings, G. (2006). From the achievement gap to the education debt: Understanding achievement in US schools. *Educational Researcher*, *35*(7), 3-12.

Ladson-Billings, G. (2009). *The dreamkeepers: Successful teachers of African American children*. John Wiley & Sons.

Lee, S. M. (1993). Racial classifications in the US Census: 1890–1990. *Ethnic and Racial Studies*, *16*(1), 75-94.

Lee, V. E., & Burkam, D. T. (2002). *Inequality at the starting gate: Social background differences in achievement as children begin school*. Washington, DC: Economic Policy Institute.

Lewis, C. C. (1995). *Educating hearts and minds: Reflections on Japanese preschool and elementary education*. Cambridge University Press.

Libbey, H. P. (2004). Measuring student relationships to school: Attachment, bonding, connectedness, and engagement. *Journal of school health*, *74*(7), 274-283.

Loukas, A., Suzuki, R., & Horton, K. D. (2006). Examining school connectedness as a mediator of school climate effects. *Journal of Research on Adolescence*, *16*(3), 491-502.

Love, B. J. (2004). Brown plus 50 counter-storytelling: A critical race theory analysis of the "majoritarian achievement gap" story. *Equity & Excellence in Education*, *37*(3), 227-246.

Lunenburg, F. C., & Irby, B. J. (2008). *Writing a successful thesis or dissertation: Tips and strategies for students in the social and behavioral sciences*. Corwin press.

Lynch, M., & Cicchetti, D. (1998). Trauma, mental representation, and the organization of memory for mother-referent material. *Development and Psychopathology*, *10*(04), 739-759.

MacNeil, A. J., Prater, D. L., & Busch, S. (2009). The effects of school culture and climate on student achievement. *International Journal of Leadership in Education*, *12*(1), 73-84.

Maslow, A. H. (1934). The effect of varying time intervals between acts of learning with a note on proactive inhibition. *Journal of Experimental Psychology*, *17*(1), 141.

Maslow, A. H. (1943). A theory of human motivation. *Psychological review*, *50*(4), 370.

Maslow, A. H. (1957). A philosophy of psychology. *Personal Problems and Psychological Frontiers.* New York: Sheridan.

Maslow, A. H. (1987). Maslow's hierarchy of needs. Salenger Incorporated.

Maslow, A. H., Frager, R., & Cox, R. (1970). *Motivation and personality*. New York: Harper & Row.

Matthews, J. S., Kizzie, K. T., Rowley, S. J., & Cortina, K. (2010). African Americans and boys: Understanding the literacy gap, tracing academic trajectories, and evaluating the role of learning-related skills. *Journal of Educational Psychology*, *102*(3), 757.

Mattison, E., & Aber, M. S. (2007). Closing the achievement gap: The association of racial climate with achievement and behavioral outcomes. *American journal of community psychology*, *40*(1-2), 1-12.

Marjoribanks, K. (1996). Family learning environments and students' outcomes: A review. *Journal of Comparative Family Studies*, 373-394.

Mayer, M. J., & Furlong, M. J. (2010). How safe are our schools?. *Educational Researcher*, *39*(1), 16-26.

McCabe, P. C., Dragowski, E. A., & Rubinson, F. (2013). What is homophobic bias anyway? Defining and recognizing microaggressions and harassment of LGBTQ youth. *Journal of School Violence*, *12*(1), 7-26.

McAllister, G., & Irvine, J. J. (2002). The role of empathy in teaching culturally diverse students: A qualitative study of teachers' beliefs. *Journal of Teacher Education*, *53*(5), 433-443.

McGraw-Hill, C. T. B. (2015). Missouri Assessment Program Grade-Level Assessments Technical Report 2015. *Missouri Department of Elementary and Secondary Education*.

McIntosh, P. (2010). White privilege and male privilege. *The Teacher in American Society: A Critical Anthology*, *121*.

McKown, C., & Weinstein, R. S. (2008). Teacher expectations, classroom context, and the achievement gap. *Journal of school psychology*, *46*(3), 235-261.

McNeely, C. A., Nonnemaker, J. M., & Blum, R. W. (2002). Promoting school connectedness: Evidence from the National Longitudinal Study of Adolescent Health. *Journal of School Health, 72,* 138 – 146.

Mead, G. H. (1934). *Mind, self and society* . University of Chicago Press. Chicago.

Miele, F. (2002). *Intelligence, race, and genetics: Conversations with Arthur R. Jensen*. Westview Press.

Milam, L. (2014). School Climate and Student Learning: An analysis of the relationship between school climate, student achievement, and other contributing factors. Retrieved from https://dukespace.lib.duke.edu/dspace/bitstream/handle/10161/8451/MP%20Executive%20Summary%20.pdf?sequence=1

Mishel, L., Bivens, J., Gould, E., & Shierholz, H. (2012). *The state of working America*. Cornell University Press.

Missouri Department of Elementary and Secondary Education (1978). A Study of urban metropolitan education in Missouri.

Missouri Department of Elementary and Secondary Education. (2015). School District Information. Retrieved from https://mcds.dese.mo.gov/quickfacts/SitePages/DistrictInfo.aspx?ID=__bk810003009300630013001300300

Missouri Department of Elemetnary ad Secondary Education. (2016). State Assessments. Retrieved from https://mcds.dese.mo.gov/quickfacts/Pages/State-Assessment.aspx.

Mitchell, S.N., Reilly, R., Bramwell, F.G., Solnosky, A., & Lilly, F. (2004). Friendship and choosing groupmates: Preferences for teacher-selected vs. student-selected groupings in high school science classes. *Journal of Instructional Psychology, 31*, 20-32.

Moll, L. C. (1992). *Vygotsky and education: Instructional implications and applications of sociohistorical psychology*. Cambridge University Press.

Morton, S. G. (1840). *Crania Americana.*

Moynihan, D. P. (1997). The Negro Family: The Case for National Action. *African American Male Research*.

Muhammad, A., & Hollie, S. (2012). The will to lead, the skill to teach. Harvard.

Murray, Charles (1998). *Income inequality and IQ.* Washington, DC: AEI Press.

National Center for Education Statistics, 2009. The Nation's Report Card: Reading 2009. The Nation's Report Card. (2015). 2-15 Mathematics and Reading Assessment. Retreived from https://www.nationsreportcard.gov/reading_math_2015/#?grade=4

National School Climate Council. (2007). The School Climate Challenge: Narrowing the gap between school climate research and school climate policy, practice guidelines and teacher education policy. Retrieved from http://www.schoolclimate.org/climate/advocacy.php

Newton, P. E. (2012). Clarifying the consensus definition of validity. *Measurement: Interdisciplinary Research & Perspective*, *10*(1-2), 1-29.

Neisser, U., Boodoo, G., Bouchard Jr, T. J., Boykin, A. W., Brody, N., Ceci, S. J., & Urbina, S. (1996). Intelligence: Knowns and unknowns. *American psychologist*, *51*(2), 77.

Nisbett, R. E. (2009). Education is all in your mind. *New York Times*.

Noguera, P. A. (2009). *The trouble with black boys:... And other reflections on race, equity, and the future of public education*. John Wiley & Sons.

Noguera, P. A. (2003). The trouble with Black boys: The role and influence of environmental and cultural factors on the academic performance of African American males. *Urban education*, *38*(4), 431-459.

Noguera, P. A. (2008). Creating schools where race does not predict achievement: The role and significance of race in the racial achievement gap. *The Journal of Negro Education*, 90-103.

Noltemeyer, A., Bush, K., Patton, J., & Bergen, D. (2012). The relationship among deficiency needs and growth needs: An empirical investigation of Maslow's theory. *Children and Youth Services Review*, *34*(9), 1862-1867.

Nowlis, S. M., Kahn, B. E., & Dhar, R. (2002). Coping with ambivalence: The effect of removing a neutral option on consumer attitude and preference judgments. *Journal of Consumer Research*, *29*(3), 319-334.

Obradović, J., Long, J. D., Cutuli, J. J., Chan, C. K., Hinz, E., Heistad, D., & Masten, A. S. (2009). Academic achievement of homeless and highly mobile children in an urban school district: Longitudinal

evidence on risk, growth, and resilience. *Development and psychopathology*, *21*(02), 493-518.

O'Malley, M., Voight, A., Renshaw, T. L., & Eklund, K. (2015). School climate, family structure, and academic achievement: A study of moderation effects. *School Psychology Quarterly*, *30*(1), 142.

Oden, S., & Asher, S. R. (1977). Coaching children in social skills for friendship making. *Child development*, 495-506.

Ogbu, J. U. (1997). Understanding the school performance of urban Blacks: Some essential background knowledge. *Child and Youth: Interdisciplinary Perspectives.* Sage Publications.

Ogbu, J. U., & Simons, H. D. (1998). Voluntary and involuntary minorities: a cultural-ecological theory of school performance with some implications for education. *Anthropology & Education Quarterly*, *29*(2), 155-188.

Ohta, A. S. (1995). Applying sociocultural theory to an analysis of learner discourse: Learner-learner collaborative interaction in the zone of proximal development. *Issues in applied linguistics*, *6*(2), 93-121.

Olweus, D. (1991). Bully/victim problems among schoolchildren: Basic facts and effects of a school based intervention program. *The development and treatment of childhood aggression*, *17*, 411-48.

Ortega, R., Sánchez, V., Ortega-Rivera, J., & Viejo, C. (2011). La violencia sexual en las relaciones interpersonales de adolescentes. *EN: Violencia de género, Consejo Social, Valencia: Tirant lo Blanch, Universidad de Vigo, Monografías*, 722.

Osborne, J. W. (1995). Academics, self-esteem, and race: A look at the underlying assumptions of the disidentification hypothesis. *Personality and Social Psychology Bulletin*, *21*(5), 449-455.

Osborne, J. W. (1997). Race and academic disidentification. *Journal of Educational Psychology*, *89*(4), 728.

Osborne, J. W. (1999). Unraveling underachievement among African American boys from an identification with academics perspective. *Journal of Negro Education*, 555-565.

Osborne, J. W. (2007). Linking stereotype threat and anxiety. *Educational Psychology, 27(1),* 135-154.

Osterman, K. F. (2000). Students' need for belonging in the school community. *Review of educational research*, *70*(3), 323-367.

Oxford English Dictionary (2014). Oxford: Oxford.

Parsons, T., & Halsey, A. H. (1959). The school class as a social system. *Schools and society: A sociological approach to education*, 32-40.

Payne, C. M. (1984). *Getting What We Ask For: The Ambiguity of Success and Failure in Urban Education. Contributions to the Study of Education, Number 12.* Greenwood Press.

Pearce, J. C. (1992). *Evolution's end: Claiming the potential of our intelligence*. Harper: San Francisco.

Paredes, V. (2014). A teacher like me or a student like me? Role model versus teacher bias effect. *Economics of Education Review*, *39*, 38-49.

Perry, A. (1908). *The management of a city school*. New York: Macmillan.

Perry, L., & McConney, A. (2010). Does the SES of the school matter? An examination of socioeconomic status and student achievement using PISA 2003. *The Teachers College Record,112(4),* 7-8.

Perry, T., Steele, C., & Hilliard, A. G. (2004). *Young, gifted, and Black: Promoting high achievement among African-American students*. Beacon Press.

Persell, C. H. (1977). *Education and inequality: A theoretical and empirical synthesis*. Free Press.

Phillips, M., Crouse, J., & Ralph, J. (1998). Does the Black-White test score gap widen after children enter school. *The Black-White Test Score Gap*, 229-272. The Brooking Press.

Pronin, E., & Kugler, M. B. (2007). Valuing thoughts, ignoring behavior: The introspection illusion as a source of the bias blind spot. *Journal of Experimental Social Psychology*, *43*(4), 565-578.

Ramstetter, C. L., Murray, R., & Garner, A. S. (2010). The crucial role of recess in schools. *Journal of School Health*, *80*(11), 517-526.

Reardon, S. F. (2013). The widening income achievement gap. *Educational Leadership*, *70*(8), 10-16.

Rist, R. C. (1982). On the application of ethnographic inquiry to education: Procedures and possibilities. *Journal of Research in Science Teaching*, *19*(6), 439-450.

Robinson, R. (2000). The debt: What America owes to Blacks. *New York: Plume*.

Roseth, C. J., Johnson, D. W., & Johnson, R. T. (2008). Promoting early adolescents' achievement and peer relationships: The effects of cooperative, competitive, and individualistic goal structures. *Psychological bulletin*, *134*(2), 223.

Rouse, H. L., & Fantuzzo, J. W. (2009). Multiple risks and educational well being: A population-based investigation of threats to early school success. *Early Childhood Research Quarterly, 24*, 1-14.

Rumberger, R. W. (1995). Dropping out of middle school: A multilevel analysis of students and schools. *American Educational Research Journal, 32(3),* 583-625.

Rushton, J. P. (1995). *Race, evolution, and behavior: A life history perspective*. Transaction Publishers.

Rushton, J. P. (1997). Race intelligence and the brain. *Personality and Individual Differences, 23,* 169-80.

Rushton, J.P. (1998). *Review of the book The g Factor: The Science of Mental Ability by Arthur R. Jensen.* Politics and the Life Sciences.

Rushton, J. P. (2000). *Race, evolution, and behavior: A life history perspective. 2nd special abridged edition.* Charles Darwin Research Institute.

Rushton, J. P., & Jensen, A. R. (2005). Thirty years of research on race differences in cognitive ability. *Psychology,Public Policy, and Law*, *11*(2), 235.

Rushton, S. P., Ormerod, S. J., & Kerby, G. (2004). New paradigms for modeling species distributions?. *Journal of Applied Ecology*, *41*(2), 193-200.

Ryan, C. L., & Bauman, K. (2016). Educational attainment in the United States: 2015. *Current Population Reports, 20*.

Samdal, O., Wold, B., & Bronis, M. (1999). Relationship between students'

perceptions of school environment, their satisfaction with school and perceived academic achievement: An international study. *School Effectiveness and School Improvement*, *10*(3), 296-320.

Savery, J. R., & Duffy, T. M. (1995). Problem based learning: An instructional model and its constructivist framework. *Educational technology*, *35*(5), 31-38.

Schafer, W. D. (2002). The Missouri Assessment Program: An independent evaluation. *Missouri National Education Association.*

Seagram, B. C., Gould, J., & Pyke, S. W. (1998). An investigation of gender and other variables on time to completion of doctoral degrees. *Research in higher education*, *39*(3), 319-335.

Schuman, H., & Presser, S. (1981). *Questions and answers: Experiments on question form, wording, and context in attitude surveys.* New York: Academic.

Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of educational research*, *75*(3), 417-453.

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of educational psychology*, *85*(4), 571.

Shockley, W. B. (1992). Shockley on eugenics and race: The application of science to the solution of human problems. Georgetown.

Slaughter-Defoe, D. T. (2005). Having an Identity and Standing for a Mission: Curing Racism. *Educational Researcher*, *34*(5), 39-42.

Slavin, R. E. (1982). *Cooperative learning: Student teams. What research*

says to the teacher. National Education Association Professional Library.

Smedley, A., & Smedley, B. D. (2005). Race as biology is fiction, racism as a social problem is real: Anthropological and historical perspectives on the social construction of race. *American Psychologist*, *60*(1), 16.

Smith, M. W., & Wilhelm, J. D. (2009). Boys and literacy. *Handbook of Adolescent Literacy Research*, 360-371.

Snyder, T. D., & Dillow, S. A. (2013). Digest of Education Statistics, 2012. NCES 2014-015. *National Center for Education Statistics*.

Solomon, D., Battistich, V., Watson, M., Schaps, E., & Lewis, C. (2000). A six-district study of educational change: Direct and mediated effects of the child development project. *Social Psychology of Education*, *4*(1), 3-51.

Sorhagen, N. S. (2013). Early teacher expectations disproportionately affect poor children's high school performance. *Journal of Educational Psychology*, *105*(2), 465.

Spearman, C. (1904). The proof and measurement of association between two things. *The American journal of psychology*, *15*(1), 72-101.

Spencer, H. (1864). *Illustrations of universal progress: A series of discussions*. D. Appleton.

Steele, C. M. (1992). Race and the schooling of Black Americans. *The Atlantic Monthly*, *269*(4), 68-78.

Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American psychologist*, *52*(6), 613.

Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of personality and social psychology*, *69*(5), 797.

Steele, C. M., & Aronson, J. (1998). Stereotype threat and the test performance of academically successful African Americans. *The Black-White test score gap*, 401-427.

Steele, C. M., Spencer, S. J., & Aronson, J. (2002). Contending with group image: The psychology of stereotype and social identity threat. *Advances in experimental social psychology*, *34*, 379-440.

Steele, C. (2003). *Stereotype threat and African-American student achievement*. Westview Press.

Stevenson, H. W. (1991). The development of prosocial behavior in large-scale collective societies: China and Japan. *Cooperation and Prosocial Behaviour*, 89-105.

Stevenson, H., & Stigler, J. W. (1994). *Learning gap: Why our schools are failing and what we can learn from Japanese and Chinese education.* Simon and Schuster.

Stewart, E. B. (2007). Individual and school structural effects on African American high school students' academic achievement. *The High School Journal*, *91*(2), 16-34.

Stone, J., Lynch, C. I., Sjomeling, M., & Darley, J. M. (1999). Stereotype threat effects on black and white athletic performance. *Journal of personality and social psychology*, *77*(6), 1213.

Sum, A., Khatiwada, I., McLaughlin, J., & Palma, S. (2009). The consequences of dropping out of high school. *Center for Labor Market Studies Publications*.

Tagiuri, R. (1968). The concept of organizational climate. *Organizational climate: Explorations of a concept*, 11-32.

Tatum, A. W. (2005). *Teaching reading to black adolescent males: Closing the achievement gap*. Stenhouse Publishers.

Taylor, G., Jungert, T., Mageau, G. A., Schattke, K., Dedic, H., Rosenfield, S., & Koestner, R. (2014). A self-determination theory approach to predicting school achievement over time: The unique role of intrinsic motivation. *Contemporary Educational Psychology*, *39*(4), 342-358.

Thapa, A., Cohen, J., Guffey, S., & Higgins-D'Alessandro, A. (2013). A review of school climate research. *Review of Educational Research*, *83*(3), 357-385.

Thompson, G. L., Warren, S. R., Foy, T., & Dickerson, C. (2008). What Makes a Teacher Outstanding?: A Contrast of Teachers' and African American High School Students' Perspectives. *Journal of Urban Learning, Teaching, and Research*, *4*, 122-134.

Thorndike, R. L., Hagen, E. P., & Sattler, J. M. (1986). *Stanford-Binet intelligence scale*. Riverside Publishing Company.

Townsend, B. L. (2000). The disproportionate discipline of African American learners: Reducing school suspensions and expulsions. *Exceptional Children*, *66*(3), 381-391.

Trumbull, E., & Rothstein-Fisch, C. (2011). The intersection of culture and

achievement motivation. *School Community Journal*, *21*(2), 25.

Valbrun, M. (2013, January 25). Children of Illegal Immigrants Struggle When Parents Are Deported. Retrieved from http://www.huffingtonpost.com/2012/01/25/immigrant-children-face-u_n_1231668.html

Valencia, R. R. (2012). *The evolution of deficit thinking: Educational thought and practice*. Routledge.

Van den Bergh, L., Denessen, E., Hornstra, L., Voeten, M., & Holland, R. W. (2010). The implicit prejudiced attitudes of teachers: Relations to teacher expectations and the ethnic achievement gap. *American Educational Research Journal*, *47*(2), 497-527.

Verkuyten, M., & Thus, J. (2002). School satisfaction of elementary school children: The role of performance, peer relations, ethnicity and gender. *Social Indicators Research, 59,* 203 – 228.

Virtanen, M., Kivimäki, M., Luopa, P., Vahtera, J., Elovainio, M., Jokela, J., & Pietikäinen, M. (2009). Staff reports of psychosocial climate at school and adolescents' health, truancy and health education in Finland. *The European Journal of Public Health, 19*(5), 554-560.

Voight, A., Hanson, T., O'Malley, M., & Adekanye, L. (2015). The Racial School Climate Gap: Within- School Disparities in Students' Experiences of Safety, Support, and Connectedness. *American journal of community psychology*, *56*(3-4), 252-267.

Walton, G. M. (2014). The new science of wise psychological

interventions. *Current Directions in Psychological Science*, *23*(1), 73-82.

Walton, G. M., & Cohen, G. L. (2011). A brief social-belonging intervention improves academic and health outcomes of minority students. *Science*, *331*, 1447-1451.

Wang, M. T., & Degol, J. L. (2016). School climate: A review of the construct, measurement, and impact on student outcomes. *Educational Psychology Review*, *28*(2), 315-352.

Weijters, B., Cabooter, E., & Schillewaert, N. (2010). The effect of rating scale format on response styles: The number of response categories and response category labels. *International Journal of Research in Marketing*, *27*(3), 236-247.

Weinstein, R. S., Gregory, A., & Strambler, M. J. (2004). Intractable self-fulfilling prophecies fifty years after Brown v. Board of Education. *American Psychologist*, *59*(6), 511.

Wentzel, K. R., Russell, S., & Baker, S. (2016). Emotional support and expectations from parents, teachers, and peers predict adolescent competence at school. *Journal of Educational Psychology*, *108*(2), 242.

White, K. R. (1982). The relation between socioeconomic status and academic achievement. *Psychological bulletin*, *91*(3), 461.

Whitmire, R. (2010). *Why boys fail: Saving our sons from an educational system that's leaving them behind*. AMACOM Division American Management Association.

Williamson III, E.W. (2011) How and Why Three Potential Causes of Academic Disidentification May Affect Interests in Academic Work at the Secondary Level

Among Inner-City Black Males. Seton Hall University Dissertations and Theses (ETDs). Paper 452.

Wilson, D. (2004). The interface of school climate and school connectedness and relationships with aggression and victimization. *Journal of School Health*, *74*(7), 293-299.

Wimberly, G. L. (2002). School Relationships Foster Success for African American Students. ACT Policy Report.

Wolke, D., Woods, S., Bloomfield, L., & Karstadt, L. (2000). The association between direct and relational bullying and behaviour problems among primary school children. *Journal of Child Psychology and Psychiatry*, *41*(8), 989-1002.

Wooley, M. E., & Grogan-Kaylor, A. (2006). Protective family factors in the context of neighborhood: Promoting positive school outcome. *Family Relations, 55*, 93-104.

Wubbels, T., & Brekelmans, M. (2005). Two decades of research on teacher–student relationships in class. *International Journal of Educational Research*, *43*(1), 6-24.

Zalenski, R. J., & Raspa, R. (2006). Maslow's hierarchy of needs: a framework for achieving human potential in hospice. *Journal of palliative medicine, 9*(5), 1120-1127.

Appendix A

District climate survey

Please complete the survey below. When you are finished, please push the submit button. Thank you for your comments.

Date: 04/10/2016	
Demographic Information	
Grade:	○ Third ○ Fourth ○ Fifth
I attend:	○ Buder ○ Iveland ○ Kratz ○ Marion ○ Marvin ○ Wyland
I am a:	○ Female ○ Male
I am:	○ African-American ○ American Indian ○ Asian ○ Caucasian ○ Hispanic/Latino ○ Multi-Racial ○ Other
Please fill out this survey by answering how you feel about each question. Thank you!	
When I am at school, I feel I belong:	○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree
When I am at school, I feel I am safe:	○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree
When I am at school, I feel I have fun learning:	○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree
I like this school:	○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree
I enjoy reading:	○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree
I learn a lot in this school:	○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree

	Strongly Agree
When I am at school, I feel I have choices in what I learn:	Strongly Disagree Disagree Neutral Agree Strongly Agree
My teachers treat me with respect:	Strongly Disagree Disagree Neutral Agree Strongly Agree
Teachers in my school really care about me:	Strongly Disagree Disagree Neutral Agree Strongly Agree
My teachers think I will be successful:	Strongly Disagree Disagree Neutral Agree Strongly Agree
I set goals in school:	Strongly Disagree Disagree Neutral Agree Strongly Agree
Students are bullied at my school:	Strongly Disagree Disagree Neutral Agree Strongly Agree
My teacher is a good teacher:	Strongly Disagree Disagree Neutral Agree Strongly Agree
My teacher believes I can learn:	Strongly Disagree Disagree Neutral Agree Strongly Agree
If I have a personal problem, I can talk to the counselor:	Strongly Disagree Disagree Neutral Agree Strongly Agree
In my school all students are given a chance to succeed:	Strongly Disagree Disagree Neutral Agree Strongly Agree
The work I do in class makes me think:	Strongly Disagree Disagree Neutral Agree Strongly Agree
I know what I am supposed to be learning in my classes:	Strongly Disagree Disagree Neutral Agree Strongly Agree
I can do well in school:	Strongly Disagree Disagree Neutral Agree Strongly Agree
The community is proud of this school:	Strongly Disagree Disagree Neutral Agree Strongly Agree
I feel very good work is expected at my school:	Strongly Disagree Disagree Neutral Agree Strongly Agree
Discipline is handled fairly in my school:	Strongly Disagree Disagree Neutral Agree Strongly Agree

Students are treated fairly by teachers:	Strongly Disagree Disagree Neutral Agree Strongly Agree
Students at my school treat me with respect:	Strongly Disagree Disagree Neutral Agree Strongly Agree
Students at my school are friendly:	Strongly Disagree Disagree Neutral Agree Strongly Agree
I have support for learning at home:	Strongly Disagree Disagree Neutral Agree Strongly Agree
My counselor makes visits to the classroom to teach about careers:	Strongly Disagree Disagree Neutral Agree Strongly Agree
I am proud to go to school in Ritenour:	Strongly Disagree Disagree Neutral Agree Strongly Agree
I use technology in the classroom:	Strongly Disagree Disagree Neutral Agree Strongly Agree
My family believes I can do well in school:	Strongly Disagree Disagree Neutral Agree Strongly Agree
I have been encouraged to think about career or educational goals at school:	Strongly Disagree Disagree Neutral Agree Strongly Agree
	Submit

Appendix B

Building level pairwise comparisons across the four climate categories

Pairwise Comparisons

Dependent Variable	(I) Building	(J) Building	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
						Lower Bound	Upper Bound
Institutional	Building 1	Building 2	-.335*	.138	.016	-.606	-.064
		Building 3	-.277	.147	.061	-.566	.013
		Building 4	-.316*	.129	.015	-.570	-.062
		Building 5	.038	.130	.770	-.217	.293
		Building 6	-.081	.117	.490	-.311	.149
	Building 2	Building 1	.335*	.138	.016	.064	.606
		Building 3	.058	.143	.684	-.222	.338
		Building 4	.019	.124	.878	-.224	.262
		Building 5	.373*	.124	.003	.129	.617
		Building 6	.254*	.111	.023	.036	.472
	Building 3	Building 1	.277	.147	.061	-.013	.566
		Building 2	-.058	.143	.684	-.338	.222
		Building 4	-.039	.134	.770	-.303	.224
		Building 5	.315*	.135	.020	.050	.579
		Building 6	.196	.123	.111	-.045	.437
	Building 4	Building 1	.316*	.129	.015	.062	.570
		Building 2	-.019	.124	.878	-.262	.224
		Building 3	.039	.134	.770	-.224	.303
		Building 5	.354*	.115	.002	.129	.579
		Building 6	.235*	.100	.019	.038	.431
	Building 5	Building 1	-.038	.130	.770	-.293	.217
		Building 2	-.373*	.124	.003	-.617	-.129
		Building 3	-.315*	.135	.020	-.579	-.050
		Building 4	-.354*	.115	.002	-.579	-.129
		Building 6	-.119	.101	.238	-.317	.079
	Building 6	Building 1	.081	.117	.490	-.149	.311
		Building 2	-.254*	.111	.023	-.472	-.036
		Building 3	-.196	.123	.111	-.437	.045

		Building 4	-.235*	.100	.019	-.431	-.038
		Building 5	.119	.101	.238	-.079	.317
Interpersonal	Building 1	Building 2	-.295*	.131	.025	-.553	-.038
		Building 3	-.144	.140	.303	-.420	.131
		Building 4	-.224	.123	.069	-.465	.018
		Building 5	.186	.123	.132	-.056	.429
		Building 6	.054	.111	.629	-.165	.272
	Building 2	Building 1	.295*	.131	.025	.038	.553
		Building 3	.151	.135	.266	-.115	.417
		Building 4	.072	.117	.542	-.159	.302
		Building 5	.482*	.118	.000	.250	.713
		Building 6	.349*	.105	.001	.142	.556
	Building 3	Building 1	.144	.140	.303	-.131	.420
		Building 2	-.151	.135	.266	-.417	.115
		Building 4	-.079	.127	.535	-.330	.171
		Building 5	.331*	.128	.010	.079	.582
		Building 6	.198	.117	.090	-.031	.427
	Building 4	Building 1	.224	.123	.069	-.018	.465
		Building 2	-.072	.117	.542	-.302	.159
		Building 3	.079	.127	.535	-.171	.330
		Building 5	.410*	.109	.000	.196	.624
		Building 6	.277*	.095	.004	.091	.464
	Building 5	Building 1	-.186	.123	.132	-.429	.056
		Building 2	-.482*	.118	.000	-.713	-.250
		Building 3	-.331*	.128	.010	-.582	-.079
		Building 4	-.410*	.109	.000	-.624	-.196
		Building 6	-.132	.096	.167	-.320	.056
	Building 6	Building 1	-.054	.111	.629	-.272	.165
		Building 2	-.349*	.105	.001	-.556	-.142
		Building 3	-.198	.117	.090	-.427	.031
		Building 4	-.277*	.095	.004	-.464	-.091
		Building 5	.132	.096	.167	-.056	.320
Safety	Building 1	Building 2	-.540*	.219	.014	-.971	-.110
		Building 3	-.433	.234	.065	-.894	.027
		Building 4	-.698*	.205	.001	-1.101	-.294
		Building 5	-.145	.206	.481	-.551	.260
		Building 6	-.271	.186	.147	-.637	.095

	Building 2	Building 1	.540*	.219	.014	.110	.971
		Building 3	.107	.227	.637	-.338	.552
		Building 4	-.158	.196	.423	-.544	.228
		Building 5	.395*	.198	.046	.007	.783
		Building 6	.270	.176	.127	-.077	.616
	Building 3	Building 1	.433	.234	.065	-.027	.894
		Building 2	-.107	.227	.637	-.552	.338
		Building 4	-.265	.213	.215	-.683	.154
		Building 5	.288	.214	.180	-.133	.709
		Building 6	.163	.195	.405	-.220	.546
	Building 4	Building 1	.698*	.205	.001	.294	1.101
		Building 2	.158	.196	.423	-.228	.544
		Building 3	.265	.213	.215	-.154	.683
		Building 5	.552*	.182	.003	.195	.910
		Building 6	.427*	.159	.007	.115	.739
	Building 5	Building 1	.145	.206	.481	-.260	.551
		Building 2	-.395*	.198	.046	-.783	-.007
		Building 3	-.288	.214	.180	-.709	.133
		Building 4	-.552*	.182	.003	-.910	-.195
		Building 6	-.125	.160	.435	-.440	.189
	Building 6	Building 1	.271	.186	.147	-.095	.637
		Building 2	-.270	.176	.127	-.616	.077
		Building 3	-.163	.195	.405	-.546	.220
		Building 4	-.427*	.159	.007	-.739	-.115
		Building 5	.125	.160	.435	-.189	.440
Teaching	Building 1	Building 2	-.353*	.121	.004	-.591	-.116
		Building 3	-.209	.129	.106	-.464	.045
		Building 4	-.270*	.113	.018	-.492	-.047
		Building 5	-.036	.114	.752	-.260	.188
		Building 6	-.117	.103	.255	-.319	.085
	Building 2	Building 1	.353*	.121	.004	.116	.591
		Building 3	.144	.125	.250	-.102	.390
		Building 4	.084	.108	.440	-.129	.297
		Building 5	.317*	.109	.004	.103	.532
		Building 6	.236*	.097	.016	.045	.428
	Building 3	Building 1	.209	.129	.106	-.045	.464
		Building 2	-.144	.125	.250	-.390	.102

	Building 4	-.060	.118	.610	-.291	.171
	Building 5	.173	.118	.143	-.059	.406
	Building 6	.092	.108	.391	-.119	.304
Building 4	Building 1	.270*	.113	.018	.047	.492
	Building 2	-.084	.108	.440	-.297	.129
	Building 3	.060	.118	.610	-.171	.291
	Building 5	.234*	.100	.020	.036	.431
	Building 6	.152	.088	.083	-.020	.325
Building 5	Building 1	.036	.114	.752	-.188	.260
	Building 2	-.317*	.109	.004	-.532	-.103
	Building 3	-.173	.118	.143	-.406	.059
	Building 4	-.234*	.100	.020	-.431	-.036
	Building 6	-.081	.088	.359	-.255	.092
Building 6	Building 1	.117	.103	.255	-.085	.319
	Building 2	-.236*	.097	.016	-.428	-.045
	Building 3	-.092	.108	.391	-.304	.119
	Building 4	-.152	.088	.083	-.325	.020
	Building 5	.081	.088	.359	-.092	.255

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Appendix C

Ethnicity pairwise comparisons across the four climate categories

Ethnicity Pairwise Comparisons

Dependent Variable	(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
						Lower Bound	Upper Bound
Institutional	African-American	Caucasian	-.015	.072	.833	-.158	.127
	Caucasian	African-American	.015	.072	.833	-.127	.158
Interpersonal	African-American	Caucasian	-.048	.069	.483	-.183	.087
	Caucasian	African-American	.048	.069	.483	-.087	.183
Safety	African-American	Caucasian	-.076	.115	.512	-.302	.151
	Caucasian	African-American	.076	.115	.512	-.151	.302
Teaching	African-American	Caucasian	-.012	.064	.854	-.136	.113
	Caucasian	African-American	.012	.064	.854	-.113	.136

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Appendix D

Building by Gender pairwise comparison across the four climate categories

Pairwise Comparisons

Dependent Variable	Building	(I) Gender	(J) Gender	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
							Lower Bound	Upper Bound
Institutional	Building 1	Female	Male	.232	.202	.251	-.165	.630
		Male	Female	-.232	.202	.251	-.630	.165
	Building 2	Female	Male	.052	.188	.782	-.317	.421
		Male	Female	-.052	.188	.782	-.421	.317
	Building 3	Female	Male	.211	.215	.326	-.211	.633
		Male	Female	-.211	.215	.326	-.633	.211
	Building 4	Female	Male	.165	.161	.306	-.151	.481
		Male	Female	-.165	.161	.306	-.481	.151
	Building 5	Female	Male	.429*	.163	.009	.109	.750
		Male	Female	-.429*	.163	.009	-.750	-.109
	Building 6	Female	Male	.195	.119	.101	-.038	.428
		Male	Female	-.195	.119	.101	-.428	.038
Interpersonal	Building 1	Female	Male	.179	.192	.351	-.198	.557
		Male	Female	-.179	.192	.351	-.557	.198
	Building 2	Female	Male	.129	.178	.470	-.221	.479
		Male	Female	-.129	.178	.470	-.479	.221
	Building 3	Female	Male	.298	.204	.145	-.103	.698
		Male	Female	-.298	.204	.145	-.698	.103
	Building 4	Female	Male	-.004	.153	.980	-.304	.297
		Male	Female	.004	.153	.980	-.297	.304
	Building 5	Female	Male	.428*	.155	.006	.123	.732
		Male	Female	-.428*	.155	.006	-.732	-.123
	Building 6	Female	Male	.009	.113	.934	-.212	.231
		Male	Female	-.009	.113	.934	-.231	.212
Safety	Building 1	Female	Male	.182	.321	.571	-.449	.813
		Male	Female	-.182	.321	.571	-.813	.449
	Building 2	Female	Male	-.013	.298	.967	-.598	.573
		Male	Female	.013	.298	.967	-.573	.598

	Building 3	Female	Male	.168	.341	.623	-.503	.838
		Male	Female	-.168	.341	.623	-.838	.503
	Building 4	Female	Male	.237	.256	.354	-.265	.740
		Male	Female	-.237	.256	.354	-.740	.265
	Building 5	Female	Male	.309	.259	.234	-.200	.818
		Male	Female	-.309	.259	.234	-.818	.200
	Building 6	Female	Male	.166	.188	.379	-.204	.536
		Male	Female	-.166	.188	.379	-.536	.204
Teaching	Building 1	Female	Male	.052	.177	.769	-.296	.401
		Male	Female	-.052	.177	.769	-.401	.296
	Building 2	Female	Male	.085	.165	.607	-.239	.408
		Male	Female	-.085	.165	.607	-.408	.239
	Building 3	Female	Male	.301	.188	.111	-.069	.671
		Male	Female	-.301	.188	.111	-.671	.069
	Building 4	Female	Male	.110	.141	.435	-.167	.388
		Male	Female	-.110	.141	.435	-.388	.167
	Building 5	Female	Male	.388*	.143	.007	.107	.668
		Male	Female	-.388*	.143	.007	-.668	-.107
	Building 6	Female	Male	.098	.104	.347	-.106	.302
		Male	Female	-.098	.104	.347	-.302	.106

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Appendix E

Ethnicity by Gender pairwise comparison

Pairwise Comparisons

Dependent Variable	Gender	(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
							Lower Bound	Upper Bound
Institutional	Female	African-American	Caucasian	-.020	.106	.853	-.228	.189
		Caucasian	African-American	.020	.106	.853	-.189	.228
	Male	African-American	Caucasian	-.011	.098	.912	-.204	.183
		Caucasian	African-American	.011	.098	.912	-.183	.204
Interpersonal	Female	African-American	Caucasian	-.070	.101	.490	-.268	.129
		Caucasian	African-American	.070	.101	.490	-.129	.268
	Male	African-American	Caucasian	-.027	.094	.774	-.211	.157
		Caucasian	African-American	.027	.094	.774	-.157	.211
Safety	Female	African-American	Caucasian	.112	.169	.506	-.219	.444
		Caucasian	African-American	-.112	.169	.506	-.444	.219
	Male	African-American	Caucasian	-.263	.156	.093	-.571	.044
		Caucasian	African-American	.263	.156	.093	-.044	.571
Teaching	Female	African-American	Caucasian	-.006	.093	.949	-.189	.177
		Caucasian	African-American	.006	.093	.949	-.177	.189
	Male	African-American	Caucasian	-.017	.086	.840	-.187	.152

	Caucasian	African-American	.017	.086	.840	-.152	.187

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Appendix F

Building by Ethnicity pairwise comparison across the four climate categories

Pairwise Comparisons

Dependent Variable	Building	(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
							Lower Bound	Upper Bound
Institutional	Building 1	African-American	Caucasian	-.072	.202	.721	-.470	.325
		Caucasian	African-American	.072	.202	.721	-.325	.470
	Building 2	African-American	Caucasian	-.071	.188	.704	-.440	.297
		Caucasian	African-American	.071	.188	.704	-.297	.440
	Building 3	African-American	Caucasian	-.385	.215	.074	-.806	.037
		Caucasian	African-American	.385	.215	.074	-.037	.806
	Building 4	African-American	Caucasian	.122	.161	.448	-.194	.438
		Caucasian	African-American	-.122	.161	.448	-.438	.194
	Building 5	African-American	Caucasian	.467*	.163	.004	.146	.787
		Caucasian	African-American	-.467*	.163	.004	-.787	-.146
	Building 6	African-American	Caucasian	-.152	.119	.200	-.385	.081
		Caucasian	African-American	.152	.119	.200	-.081	.385
Interpersonal	Building 1	African-American	Caucasian	-.143	.192	.456	-.521	.234
		Caucasian	African-American	.143	.192	.456	-.234	.521
	Building 2	African-American	Caucasian	-.184	.178	.303	-.534	.166
		Caucasian	African-American	.184	.178	.303	-.166	.534
	Building 3	African-American	Caucasian	-.175	.204	.390	-.576	.225
		Caucasian	African-American	.175	.204	.390	-.225	.576
	Building 4	African-American	Caucasian	-.026	.153	.867	-.326	.275
		Caucasian	African-American	.026	.153	.867	-.275	.326
	Building 5	African-American	Caucasian	.473*	.155	.002	.169	.777
		Caucasian	African-American	-.473*	.155	.002	-.777	-.169
	Building 6	African-American	Caucasian	-.234*	.113	.038	-.456	-.013
		Caucasian	African-American	.234*	.113	.038	.013	.456
Safety	Building 1	African-American	Caucasian	-.068	.321	.833	-.699	.563
		Caucasian	African-American	.068	.321	.833	-.563	.699
	Building 2	African-American	Caucasian	-.470	.298	.116	-1.055	.116
		Caucasian	African-American	.470	.298	.116	-.116	1.055
	Building 3	African-American	Caucasian	-.268	.341	.433	-.938	.403
		Caucasian	African-American	.268	.341	.433	-.403	.938

	Building 4	African-American	Caucasian	-.197	.256	.441	-.700	.305
		Caucasian	African-American	.197	.256	.441	-.305	.700
	Building 5	African-American	Caucasian	.503	.259	.053	-.006	1.012
		Caucasian	African-American	-.503	.259	.053	-1.012	.006
	Building 6	African-American	Caucasian	.047	.188	.805	-.324	.417
		Caucasian	African-American	-.047	.188	.805	-.417	.324
Teaching	Building 1	African-American	Caucasian	-.132	.177	.457	-.480	.217
		Caucasian	African-American	.132	.177	.457	-.217	.480
	Building 2	African-American	Caucasian	-.050	.165	.761	-.373	.273
		Caucasian	African-American	.050	.165	.761	-.273	.373
	Building 3	African-American	Caucasian	-.279	.188	.140	-.649	.092
		Caucasian	African-American	.279	.188	.140	-.092	.649
	Building 4	African-American	Caucasian	.163	.141	.249	-.115	.440
		Caucasian	African-American	-.163	.141	.249	-.440	.115
	Building 5	African-American	Caucasian	.365*	.143	.011	.084	.646
		Caucasian	African-American	-.365*	.143	.011	-.646	-.084
	Building 6	African-American	Caucasian	-.137	.104	.187	-.342	.067
		Caucasian	African-American	.137	.104	.187	-.067	.342

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).