

ABSTRACT

Title of Document: EXAMINING THE SELF-EFFICACY BELIEFS AND LEADERSHIP PRACTICES OF MIDDLE SCHOOL PRINCIPALS WITH HIGH SUCCESS RATES OF MINORITY STUDENTS IN ALGEBRA I

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This qualitative case study examined the self-efficacy beliefs of three middle school principals who had high enrollment and successful completion rates of minority students in Algebra I. With current tracking systems impacting minority student enrollment in rigorous courses, particularly in the area of mathematics, there is a need to explore and analyze the beliefs and practices of successful principals to ensure academic success for minority students in the subject of mathematics, particularly in middle school. To conduct this study, I analyzed transcripts from semi-structured interviews. The findings from this study reinforced the notion that self-efficacy beliefs were largely influenced by mastery experiences and vicarious experiences. The findings from this case study contributed additional knowledge about principal self-efficacy and the need for leadership development programs to help leaders define

their own self-efficacy practices as it relates to closing the achievement gap.

Examining the self-efficacy beliefs of successful middle school principals who have high minority student success in Algebra supports a compelling way to learn about how school leaders are addressing ways to close the achievement gap between African American and Latino students in comparison to their Asian and White peers.

This study has practice implications for school systems interested in building the capacity for principal leadership development programs focused on leaders building a durable sense of self-efficacy to lead middle schools for change. Closing the achievement gap in helping all students to graduate college-ready requires a renewed focus on leadership during the middle school years.

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OF MIDDLE SCHOOL PRINCIPALS WITH HIGH SUCCESS RATES OF
MINORITY STUDENTS IN ALGEBRA I

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Dedication

I can do all things through Christ who strengthens me.

Philippians 4:13

This dissertation is one of my biggest accomplishments, a journey like no other that I could not have imagined embarking upon and completing. This accomplishment is one that is to be shared with my greatest and most loved supporters –B. Duvale McKnight, my husband. Your commitment to my success and your many sacrifices to help me fulfill my personal dreams reminds me of why I married my best friend for life. You are amazing and selfless, the mixture of a God sent man made just for me. I am grateful for you and your love. Ayden McKnight, the best part of us, this is an example for you! Thank you for allowing Mommy to put in the time to set an example for you to accomplish anything that you put your mind to in life. It is my goal to always teach you and Madison by example and show you what you can accomplish when you push yourself to the limit. Unwanna Bellinger Dabney, you are my inspiration sister! You always set the stage perfectly so that I can follow in your footsteps. Your encouragement and support during this arduous process helped tremendously. My tenacious and edifying sister Kathy along with my awesome nephews Jackie and Jason, you drive me to always seek my personal best and strength. Thank you Kathy for being that model big sister! My mother Doris G. Dickerson, thank you for encouraging me to do this and for your spiritual guidance and support throughout the years. I am a reflection of what you began in me as a child and nurtured through adulthood. You taught me confidence that turned into “fierce” work ethic. My grandmother-in-law, Lena Richardson, aka G.G. It is because of your sacrifice and support that I was able to complete this work.

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Chapter 1: Introduction

Context of the Study

Beginning with *A Nation at Risk* in the 1980s, to the *No Child Left Behind Act of 2001* (NCLB), education reform has reflected a shift in national priorities. In 1983, the *Nation at Risk* report called for elected officials, educators, parents, and students to reform a public school system that was in need of improvement based on numerous statistics the commission said showed the inadequate quality of American education. (Gardner, 1983). The authors ominously cautioned that the data showed the nation was at risk and expressed concern that our "once unchallenged pre-eminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world" (pg. 9). The commission recommended that schools, both K-12 and higher education, adopt more rigorous and measurable standards and have higher expectations for student performance and conduct (Weiss, 2003). The educational focus since then has shifted to not only measuring U.S. student status to others globally, but measuring the gap in student performance when compared within the United States.

NCLB forced school leaders across America to focus their attention on issues of accountability, particularly focusing on the academic achievement of minority students, as the Elementary and Secondary Education Act (ESEA) revealed the importance for schools across the nation to make note of the glaring achievement gap (Crawford, 2011). The achievement gap shows a disparity on a number of educational measures between the academic performance of African American and Latino students, when compared to their Asian and White peers. The National Center

for Education Statistics in 2009 and 2011 showed that black and Hispanic students trailed their white peers by an average of more than 20 test-score points on the NAEP math and reading assessments at 4th and 8th grades, a difference of about two grade levels (Aud et al., 2011; Nord et al., 2011).

Today, questions surrounding the achievement gap remain relevant as African American and Latino students not only lag in achievement nationally, but are also underrepresented in advanced classes, particularly in the subject of math (Catsambis, 1994; Dauber, Alexander, & Entwisle, 1996). As enrollment in advanced math classes is positively linked with college enrollment, this trend ultimately contributes to the lower rates of college matriculation of minority students (Adelman, 1999). Preparation for college begins as early as seventh grade for students (Cabrera & La Nasa, 2000). Many researchers continue to explore whether minority youth are given the same opportunities to reach advanced classes as their majority peers (Lucas & Berends, 2007; Noguera & Wing, 2006).

Many scholars argue that NCLB put the right policy structures of accountability in place requiring student test results to specifically analyze student subgroups, including low-income students, students with disabilities, English language learners, and major racial and ethnic groups. However, this accountability plan does not address the social issues around race that influence structures and practices that impact minority achievement in schools. Despite larger societal beliefs, school principals play a tremendous role in shaping a vision of academic success for all students. A principals vision can be reflected in a variety of ways, including the process of course selections for students. This process can influence a student's

opportunity to excel and enter a college bound track before entering high school (Cabrera & La Nasa, 2000).

Middle school principals who hold high expectations for students and provide access and expectations for minority students to excel in rigorous course work prior to entering high school prevent minorities from being locked out of “gate keeper” courses leading to higher education (Evan, Gray, & Olchefske, 2006; A. Johnson, 2010). While the principal may carry the vision and charge of doing this work, they must also find ways to engage community stakeholders in this process.

With the role of the school principal constantly facing the challenge of building the bridge to support high school academic preparedness, there is a need to delve into the practices of successful middle school principals who have been able to attain and sustain minority achievement in mathematics. Engagement in the mathematics community of practice is instrumental to developing students’ mathematics identities, or sense of themselves as learners and doers of mathematics (Martin, 2000; Nasir, 2002). Students’ sense of themselves within the mathematics classroom is often formed from their prior in-school and out-of-school experiences and leads to the establishment of an identity within the mathematics community of practice (Cobb & Hodge, 2002; Wenger, 1998). While many schools are looking at ways to create equitable opportunities for students, few are analyzing the specific actions of principals that confront the conditions and circumstances of these students and analyze what influences these actions from principals.

African American and Latino Student Achievement in Middle School Mathematics

While there are a national set of goals to ensure that every student, regardless of race, receives a high-quality education through No Child Left Behind goals, White and Asian students continue to have access to rigorous courses and out-perform their African American and Latino peers. The reverse experience that impacts many African American and Latino students reflects their experience of passing through within-class ability grouping beginning in elementary school to the tracked courses taken in middle and high school (Kelly, 2009). This overall system of tracking has a wide variety of effects on a student's future aspirations, friendship patterns, and their final educational attainment (Kerckhoff, 1993; Rosenbaum, 1980). This pattern of limited access to rigorous courses reveals the low expectations for these students, which results in their inadequate preparedness for college (Holloway, 2004). Mathematics course taking plays an important role in entering science, technology, engineering, and mathematics (STEM) fields that require a strong "curricular momentum" coming out of high school (Heckel, 1996). According to a U.S. Department of Education report (2008), there is a decline in mathematics achievement in the United States that starts as students reach late middle school; which is when most students begin algebra or algebra prep coursework. African American students are found disproportionately in lower ability groups and academic courses beginning in elementary school (Entwisle, Alexander, & Olson, 1997) and by high school, white students are twice as likely as are African Americans to be enrolled in advanced mathematics courses (Kelly, 2004). The U.S. Department of Education report Status and Trends in Latino Education (Llagas & Snyder, 2003) points out that in 1998, almost one-fourth of Latino and African American students

completed advanced mathematics courses, whereas approximately one-half of white and Asian students did so.

The education of Latino students in the United States has reached a critical stage. Although the number of Latino students attending public schools has increased dramatically in recent decades, as a group they have the lowest level of education and the highest dropout rate of any group of students (Gandara & Contreras, 2009). There are cultural and social practices, that have placed these students at risk for educational failure, particularly in mathematics. Many math teachers feel unqualified to work effectively with minority students in class. In some cases their fear of failure in teaching Latino students results in them holding lower expectations for them and spending more time focusing on basic math skills (A. Johnson, 2010). Additionally, a teacher's understanding of Latino students is another important factor that affects students' academic motivation (Valenzuela, 1999). They must show some understanding of the student's cultural experience to make the content relevant to the student. Finally, the lack of parental support poses another barrier for Latino student success in mathematics (Martinez, DeGarmo, & Eddy, 2004). Recent research emphasizes the importance of understanding the impact that these sociocultural factors have on middle school students' educational dilemma in mathematics (Gutstein, 2006).

There are growing concerns about minority students beginning and continuing on tracked courses taken in middle school that will not provide a future of rigorous teaching and learning. The specific courses that students take in middle school have a variety of effects, ranging from impact on their personal aspirations (Heyns, 1974) to

friendship patterns (Kubitschek & Hallinan, 1998). As the school principal primarily influences the school culture for students and staff, this role becomes increasingly important when initiating positive changes to influence the mindsets and actions of students, staff, and community members to level the playing field for minority students. A principal's motivations, thoughts, and actions each contribute to the type of culture they establish in their schools.

Instructional Leadership

Education research has reinforced the importance of the principal in creating the conditions for an effective school (Smith & Andrews, 1989). Some researchers have subscribed to the belief that the principal is independently the key to the success of a school and student achievement within that school (Lipham, 1981). The role of the principal has transformed in the past few decades from being defined as building managers to now being needed in schools more as instructional leaders who are responsible for leading school improvement efforts. While many principals are leading school improvement efforts, learning how to manage change in this process is important. It would be difficult to imagine implementing and sustaining a school change process through all of the unavoidable setbacks and frustrations without strong leadership from a competent principal (DuFour & Eaker, 1998). While strong principals are critical to the school improvement process, principals must have a firm understanding of how to build leadership capacity in staff members within their schools.

Principals serve as leaders who are responsible and accountable for the academic achievement of all students. Principals additionally have to engage parents

in the process for school improvement. Research from the US Department of Education (U.S. Department of Education, 1995) concluded that parents and families are pivotal to children's learning. When parents are involved, students achieve more, regardless of socioeconomic status, ethnic/racial background, or the parent's education level (Henderson & Berla, 1994). Socioeconomic differences between white and minority students may be important with regard to students' achievement and access to higher level course-taking (Riegle-Crumb & Grodsky, 2010). In some cases, parents with bachelor degrees and above tend to feel more comfortable than less educated parents confronting school personnel about their child's education, including obtaining access to advanced courses and requesting information about their child's academic progress and needs (Lareau, 2000). According to Trotman (2001) parent involvement was designed to create a partnership that would increase greater collaboration between home and school for the purpose of improved student outcomes. Students with involved parents, regardless of background, are more likely to earn higher grades and test scores, be enrolled in higher-level classes, and be promoted to earn high school credits (Peterson & Kreider, 2012). School principals often work with parents as key stakeholders, when establishing priorities that impact school culture. Evidence suggests that nurturing trusting relationships with students and parents is a key element in improving student learning (Lee & Croninger, 1994). When principals create a space for parents to be involved in school and show a commitment to student achievement, trust is established between the principal and the parent community. This is important as principals go about a process to build allies to support their school vision.

With NCLB keeping the focus on instructional leadership and the urgency for local systems to close the achievement gap, the principal establishes the expectation for effective teaching and learning to occur. Richard Elmore (2000) defines school improvement as change that moves the entire system, raises the quality of performance, and assesses what is working and what is not. These factors support that leadership is the guidance and direction of instructional improvement. What motivates principals to lead this challenging work remains reflective of their own self efficacy beliefs and values. When schools are faced with the need to make large-scale improvements and to address inequities in student achievement, researchers must begin to look at social cognitive factors to examine the influences that impact the principal's practice.

The Social Cognitive Theory and Self-Efficacy

The social learning theory is one that focuses specifically on individual effectiveness. Albert Bandura is known for developing the social cognitive theory that explains how individuals are influenced by their thoughts of self-efficacy (1997). Self-efficacy relates to an individual's belief about whether or not they are able to achieve a task or goal. The social cognitive theory states that an individual's efficacy beliefs are shaped through cognitive processing which influences their source of efficacy (Bandura, 1997). Individuals can develop efficacy beliefs through four sources of information: mastery experiences, vicarious experiences, verbal persuasion, and affective states. A person's efficacy beliefs can influence their success or failure at a task depending on the source of information that influences their actions, which ultimately reflects their beliefs. A school principal's self-efficacy

reflects in their leadership practices. Some research supports there being a connection between principals with high self-efficacy and high student achievement rates in their schools (Tschannen-Moran & Gareis, 2004). An individual's thoughts about their own capacity or limits will create difficulty when they are faced with conflict that requires consistent effort (Bandura, 1977). In order to assess a principal's motivations towards achieving a given task, to examine their sense of efficacy beliefs will provide an in-depth evaluation of them as leader. When assessing a principal's belief system, asking open questions provides an overall perspective of their attitudes, perceptions, and beliefs (Bandura, 1991). The beliefs of a principal influence their day to day practices that ultimately impact a school's culture (Muhammad, 2009). While there are limited studies of principal efficacy, this theory supports that principals with high self-efficacy beliefs often reflect high student achievement rates in their schools (Dimmock & Hattie, 1996; Tschannen-Moran & Gareis, 2005). Self-efficacy beliefs have a direct effect on one's choice of activities and settings and can impact their coping efforts. Such beliefs determine how much effort people will expend and how long they will persist when facing difficulty. Principals who prioritize closing the achievement gap in their schools are often faced with a history of challenges that have negatively impacted minority student academic progress. Their will to address the ongoing challenges that can be anticipated when trying to rectify an adaptive challenge like the achievement gap requires facing numerous challenges. A principal's self-efficacy beliefs paints a true picture of how prepared they are when faced with challenging situations in leadership that requires strength and perseverance.

Background

This study will be conducted in Burnett County Public Schools (BCPS, pseudonym), a large suburban/urban county school district. BCPS is the largest school system within the south-Atlantic region of the United States. BCPS has a very diverse student demographic makeup with students from 157 countries speaking 138 languages. The student population in BCPS reflects 33% White, 27% Hispanic/Latino, 21% Black or African American, 14 % Asian, 5 % Two or more races, 0.2 % American Indian or Alaskan Native and 0.1% Native Hawaiian or other Pacific Islander.

The school system encompasses 202 schools: 132 elementary schools, 38 middle schools, 25 high schools, 5 alternative schools, 1 charter school, and 1 technical high school. BCPS has been nationally noted for having a 90% high school graduation rate and 34 schools in BCPS are National Blue Ribbon Schools. Though the school systems students represent a wide socio-economic range to include 13.3% participate in English for Speakers of Other Languages (ESOL), 11.7% receive special education services, and 33.2% participate in Free and Reduced-price Meals System (FARMS), they are nationally recognized for a 65.9% Advanced Placement courses participation rate.

As reflected in the BCPS Strategic Planning Framework, it is an academic priority to strengthen family-school relationships and continue to expand civic, business, and community partnerships that support improved student achievement. Research has demonstrated that family and community involvement increases student achievement (U.S. Department of Education, 1995). Therefore, it is important that

parents receive information that enables them to be knowledgeable about curriculum and instructional programs in order to make informed decisions about their children's education. BCPS has recently engaged the district level staff and community in conversations about the expectations for student achievement as they implement the new state curriculum, the Common Core State Standards (CCSS). The CCSS are a set of high quality academic expectations in English and mathematics that define both the knowledge and skills all students should master by the end of the grade level to be on track for success in college. The primary focuses in mathematics through the CCSS are that 1) there will be focus on two to three topics intensely focused in each grade; 2) Concepts are logically connected from one grade to the next and linked to other major topics within the grade; and 3) there will be fluency with arithmetic, application of knowledge to real world situations, and deep understanding of mathematical concepts.

The goal of Burnett County Public Schools pre-K–12 mathematics program is for all students to achieve mathematical proficiency which will be demonstrated through mastery of mathematical skills, concepts, and processes. Educators intend for students to be able to think and reason mathematically and use mathematics to solve problems in authentic contexts. The Strategic Planning Framework has established five district-wide milestones to measure student progress. Performance targets are being set for these milestones and their corresponding data indicators will be used to guide schools and departments in developing actions plans to improve student achievement. The milestone for Grade 8 requires that students are performing at the proficient and advanced levels in reading and mathematics; students are

enrolled in and earn a grade of C or higher in Algebra I; and students are measured as hopeful, engaged, and have a good well-being as measured by the Gallup student survey. Students who complete Algebra 1 with a “C” or higher by the end of 8th grade are more likely to be successful in science and math courses in high school, as well as on the SAT, which is one of the entrance exams for college.

Algebra 1 is the first high school credit-bearing mathematics course. Students who successfully complete both semesters and pass the semester B final exam earn 1 Algebra Mathematics credit toward graduation. Students successful in this course will take Honors Geometry the following year. The School Support and Improvement Framework is the tool that BCPS uses to measure all schools within the school district.

Statement of the Problem

African American and Latino students are facing a serious challenge; a challenge reflecting their low achievement in math resulting in their lack of preparedness for college. Even though some overcome the challenge and get into college, they often present as being academically underprepared. The absence of minority students enrolled in higher level math classes like algebra in middle school, limits their preparedness for college. Significant research focuses on factors that impact student enrollment in and successful completion of Algebra I in middle school-much of it questioning teacher expectations and school-district goals. While Algebra I is used as the benchmark of success in middle school mathematics, the pathways of mathematics begin in sixth grade when students are presented with options of taking an on-level math course or a more rigorous math course with the

latter often leading to Algebra by the end of eighth grade. There is limited research which examines the impact of middle school principal's beliefs and practices on the enrollment and successful pass rates of African American and Latino students in Algebra I in middle schools. Self-efficacy beliefs in middle school principals may impact how they lead and implement a school vision to address minority student needs. Exploring the practices of principals who display a commitment to minority students' excelling in math may lead to an increase of achievement in middle school mathematics. This qualitative case study will explore the practices of middle school principals with high completion rates of African American and Latino students in Algebra I.

Purpose of the Study

The purpose of this qualitative case study is to examine the beliefs and leadership practices of three middle school principals with high successful completion rates of African American and Latino students in Algebra I. The student population for this study is middle school African American and Latino students. BCPS has identified seven keys to college readiness with milestone focusing on enrollment and successful completion of Algebra I by eighth grade, as measured by the county final exam assessment for Algebra I. The middle schools selected to participate in this study are defined by BCPS as schools having a high enrollment and success rate for black and Latino students in Algebra I by the end of the eighth grade year. This study seeks to examine the beliefs and practices of each principal regarding African - American and Latino student achievement in Algebra I by eighth grade. Because the study examined the impact of the leader's belief on minority student achievement in

math, it was required to conceptualize the principals' beliefs and actions to measure the impact on student achievement. The researcher conceptualized several questions as aspects of self-efficacy to gain personal perceptions from each participant in this study.

The research questions that guide this study are as follows:

- 1) What are the beliefs and leadership practices of middle school principals with high success rates for African American and Latino students in Algebra I?
- 2) What are the principal's experiences as an educator and/or leader that have impacted their thoughts about minority student achievement in mathematics?
- 3) What have principals done as leaders to influence their student success rates?

Significance

Despite years of educational reform reflecting efforts to narrow the achievement gap, African American and Latino students continue to lag behind their White and Asian peers in enrollment and achievement in advanced courses. Algebra I courses contain a rigorous curriculum that students need to master in order to take more advanced mathematics course work in high school (Evan et al., 2006). Creating the conditions for minority students to enroll and achieve in Algebra I in middle school falls under the leadership of the principal. While there are many leadership influences that impact a school, the principal remains the central source of leadership influence that impacts student achievement, and particularly equitable practices that level the playing field for African American and Latino students (Singleton & Linton, 2005). Although there is much research suggesting the need for leadership commitment to providing equitable opportunities in schools, there is a need to expand

on the knowledge base that can build a foundation for educational leadership practices that can consistently impact and sustain minority achievement in mathematics in middle schools particularly. Therefore, this study will add to the understanding of principal leadership practices to influence equity and achievement in mathematics for middle school students.

This study is significant because it explores the beliefs and practices of middle school principals who have high success rates for minority students in Algebra I. Principal self-efficacy perceptions are analyzed to make connections between each principal's beliefs, thoughts, and actions to their leadership abilities that impact minority student success in middle school mathematics. Examining middle school principals' whose beliefs impact their leadership practices may contribute to the phenomenon of high success rates in mathematics for African American and Latino students in middle school. The belief system of the leaders in this study will contribute to the limited amount of literature that supports the persuasion behind the work of school leaders who implement successful practices that contribute to the success of minority students in middle school mathematics, particularly focusing on their work with school community members to lead this effort of equity.

Limitations of Study

This study is limited by the small size of the sample population; with a sample of only three principals being interviewed. The limitations of this study will be dependent upon the beliefs and practices submitted by selected school principals. The study will assume that the beliefs and practices that are reported by the principals will reflect their own core values and honest personal experiences that influence their

leadership as school principals. The socio-economic status of students could also be a factor when examining student performance; however that factor was not considered in this study.

Definition of Terms

Key terms are defined as follows:

- Achievement Gap- the observed disparity on a number of educational measures between the performance of groups of students, especially groups defined by gender, race/ethnicity, ability, and socioeconomic status
- African American/Black- A Black American; Caribbean Americans
- Individual self-efficacy- Defined by Bandura (1977) as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (p.3)
- Latino- a Latin American inhabitant of the United States
- No Child Left Behind Act of 2001- Public Law 107-110 enacted by the federal government to ensure that “all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at minimum, proficiency on challenging state academic achievement standards and state academic assessments” (NCLB, 2001).
- Social Issues- an issue that relates to society's perception of people's personal lives
- Social Cognitive Theory- a theory focused on learning in social context, stating that people learn from one another through observational learning, imitation, and modeling (Bandura, 1986)

- Successful completion rate-(Algebra I assessment) - students who receive a C or higher in the Algebra I A/B final exam.

Chapter 2: Review of the Literature

Overview

The purpose of this study is to examine the self-efficacy beliefs of principals in middle schools with high enrollment and success rates of minority students in Algebra I. Through interviews, I will explore how these principal's beliefs contribute to their leadership practices impacting minority student achievement. This chapter will review the literature relating to pertinent topics within this study. This literature review is divided into four sections. The first section reviews the *No Child Left Behind Act of 2001* and the focus it brought to the achievement gap in education. The second section focuses on the contributing factors impeding the success of African American and Latino students in middle school, particularly in mathematics. The role of the principal and how their leadership impacts student success is presented in the third section. The final section of the literature review reflects research on the social cognitive theory and self-efficacy as it relates to principals and their work in schools.

No Child Left Behind Act, 2001

The *No Child Left Behind Act of 2001* (NCLB, 2001) is holding schools specifically accountable for the annual progress of African American and Latino students. The yearly assessment of students in reading and math required by the NCLB Act has made closing the achievement gap a national priority. When the *Elementary and Secondary Education Act* (ESEA) was reauthorized as a result of the NCLB Act of 2001, schools began to be “graded” based on the disaggregated data outlining student performance in racial subgroups. This student achievement data is

the measure that is being used to hold schools accountable for their success or lack of success for all student performance in every racial subgroup (USDE, 2004).

The No Child Left Behind Act has raised the expectation for the achievement of all students, requiring educators to reevaluate classroom practices and reexamine school policies that may be counterproductive to student learning (USDE, 2004). Expanding federal control of schools by extending funding to test students annually and enforcing penalties for when specific targets are not met, creates some opposition to this law. Although this legislation is able to hold public schools accountable for eliminating achievement disparities, critics argue that this accountability alone does not change student performance (Ashby, 2007; Darling-Hammond, 2007; Kim & Sunderman, 2004). Students cannot succeed in meeting the demands of the economy if they are not presented with opportunities to experience more challenging work in school (Darling-Hammond, 2007). Schools will need to face the more difficult embedded practices that are impeding minority student academic achievement. Until school practices are examined to specifically identify and address barriers, standards and tests will not create the educational opportunities where they do not already exist for African American and Latino students.

Minority Student Achievement Gap in Math

The United States has set a national goal of ensuring that every student receives an equitable, high-quality education, and that “no child is left behind.” While this is the goal, student performance data shows that White and Asian students continue to outperform African American and Latino students at every grade level according to the 2003 National Center for Education Statistics. Research has shown

that minority students face many academic barriers to achievement, both inside and outside of the classroom (Barton, 2003). One factor is that minority students are often exposed to less rigorous curriculum. The U.S. Department of Education report, *Status and Trends in Hispanic Education* (Llagas & Snyder, 2003) reported that in 1998, one-fourth of African American and Latino students completed advanced mathematics courses, whereas approximately one-half of White and Asian students did so. In order for students to succeed in mathematics, particularly higher level mathematics courses like Algebra II and Pre -Calculus, they must have access to gateway courses such as Algebra I. National data continues to show that minority students are not being afforded the opportunity to take higher level mathematics courses. The report (Llagas & Snyder, 2003) shows that 59% of Latino students completed middle level mathematics courses (pre-algebra), 8% took remedial lower level courses, and 7% completed non-academic courses or no mathematics courses. Black students are disproportionately found in lower ability groups and academic courses as well (Entwisle et al., 1997). By the time they reach high school, white students are about twice as likely as black students to be enrolled in advanced mathematics courses (Mickelson, 2001). This pattern of tracking students into lower level math courses creates a structure in schools exhibiting low expectations of student performance. This pattern is often created by adults around the students that precludes them from being encouraged to take more rigorous courses, particularly in math (Holloway, 2004).

Research focusing on the reasons influencing low enrollment of African American and Latino students in college preparatory courses like algebra not only

reveal connections to low expectations for students, but points towards limited use of student performance data. Many teachers and school administrators believe such placements are based on test scores. They believe that their system is based on merit, and is generally bias-free (R. S. Johnson, 2002). School data reveals another reality. Even with the same test scores, Blacks and Latinos were significantly less likely to be allowed to take advanced classes (Spring, 2000).

Barriers for African American and Latino students in Algebra I

Mathematics education has paid little attention to reflection about equity. In many national surveys of student achievement in mathematics, African American and Latino students remain largely overrepresented in the lower tails of achievement distributions. Tracking systems exacerbate these inequalities by segregating many minority students within schools, allocating still fewer educational opportunities to them at the classroom level. (Darling-Hammond, 2007; Heckel, 1996; Kelly, 2009) Despite historical and some continuing efforts to integrate U.S. schools, minority students continued to be schooled separately in lower level math courses, but in the same buildings as their Asian and White peers (Kelly, 2009). Tracking in U.S. schools starts much earlier and is much more extensive than in most other countries, where sorting does not occur until high school. In U.S. schools, starting in elementary schools with the designation of instructional groups and programs being based on test scores and recommendations, tracking becomes highly formalized by junior high school (Darling-Hammond, 2007). In addition to tracking, ability grouping also creates an impaired environment for students, limiting the educational capacities of students of color. While some ability grouping practices begin in

elementary school, the impact on middle school students presents a challenge for them socially. Middle school students particularly will feel that they want to have the same challenges as their friends in school (Moses & Cobb, 2001) Separation based on ability on the middle school child can be detrimental to a student's social development among their peers.

The continuing interest in Algebra as a middle school gateway course for advanced instruction in high school is a highlighted discussion in many school systems. It is important for school leaders to emphasize the factor that more rigorous pathway of mathematics actually begin in sixth grade when students enter middle school. Many middle schools offer options to students to take an "on-level" path or "accelerated" path of mathematics. Students who begin the on-level path beginning in 6th grade often proceed to an on-level course in seventh and eighth grade. The eighth grade course is often a course exposing students to pre-Algebra concepts. The accelerated pathway of mathematics beginning in sixth grade sometimes offers the option of sixth graders taking a pre-Algebra course, resulting in the student taking Algebra in seventh grade at times. While it is important to acknowledge that students, particularly minority students must access rigorous course options in math this must not underscore the importance placed on providing more opportunities for students to succeed in rigorous courses.

Teachers are a vital part of student success. Their attitudes and comfort level in the content they teach, as well as their relationships and beliefs in student ability, is significant to student academic achievement. Toldson (2008) indicated that African male students found more enjoyment in school when their work in class is considered

meaningful to them. He further indicated that African American students tend to be more academically successful when they have teachers who they perceive as being respectful professionals who treat the students with respect and build upon their strengths and not focus on their weaknesses. Toldson's research found that African American males tend to thrive in environments where there is a congenial relationship existing between the teacher and student as this environment allows the students to feel supported and safe while learning.

The U.S. Department of Education in the National Mathematics Advisory Panel Report (2008) shared that teachers rated their work with unmotivated students as the single most challenging aspect of teaching Algebra I successfully. These teachers also reported that they feel unqualified to work effectively with these minority students in class due to the fear of not being able to motivate and reach them in class (A. Johnson, 2010).

The clear reality is that many minority students know how far behind they are; it is part of what frightens them. But their response is not to organize for change, or to make plans for direct action. Kids in the 1960s were more conscious of being in a struggle for change (Moses & Cobb, 2001). Some who are driving math reform may argue that other courses are relevant to higher level thinking skills, but algebra has been the course that the mathematical community has advocated for this learning experience over the years (Moses & Cobb, 2001).

While the literature clearly outlines the impact of tracking on minority student progression in mathematics that is a gatekeeper from Algebra I access, there is a gap in research literature that focuses on how the school principal's practices can change

this achievement gap in middle school mathematics. This study seeks to close that gap in the existing literature.

Outcomes for success in Algebra I for middle school students

Most high-achieving nations focus their curriculum on critical thinking and problem solving; using examinations that require students to conduct research and scientific investigations, solve complex real-world problems in mathematics, and defend their ideas orally and in writing (Darling-Hammond, 2007). These learning experiences present opportunities for higher level thinking skills to be utilized in student learning. In the Algebra Project, Moses and Cobb shared the following elements of the Algebra Project curriculum that exposes students to higher level thinking skills that are personally relevant to them (2002): Physical events (a field trip that is the central experience); Pictorial representation (modeling); Intuitive language (people talk); Structured Language (feature talk); and Symbolic Representation. Exposure to more challenging learning opportunities would eventually unlock the gate that has kept African American and Latino students from thriving in the areas of science, math and technology.

Ultimately it is up to the school principal to implement the vision of having high expectations for students that will influence them to become motivated to face academic challenges. Through data analysis and research studies on principal leadership, researchers have determined that “principals exercise a measureable, through indirect, effect on school effectiveness and student achievement” (Hallinger & Heck, 1996).

Principal Leadership

Traditionally, the principal resembled the middle manager who represented the school manager, one who supervised buses, boilers, and books. Today, in a rapidly changing era of standards-based reform and accountability, a different conception has emerged presenting the school principal as the instructional leader. This shift brings with it dramatic changes in what public education needs from principals. They can no longer simply function as building managers, tasked with adhering to district rules, carrying out regulations, and avoiding mistakes. They have to be (or become) leaders of learning who can develop a team delivering effective instruction.

Research is very consistent in showing that highly successful schools have strong, competent leaders (Jackson & Davis, 2000). In fact, in a comprehensive review of leadership research, Leithwood and Riehl (2003) found that school leadership had significant effects on student learning. In addition, they concluded that leadership effects were second only to the effects of the quality of curriculum and teachers' instruction. Research also shows that principals play key roles in instructional change in their schools, and their level of involvement often dictates whether attempts to change are successful (Riordan, 2003). Leithwood et al. (2004), shared that the principal's priorities should include a focus on the following items that impact student learning:

- 1) Teacher content knowledge
- 2) Teacher involvement in a professional learning community
- 3) Aligning the schools mission and goals

- 4) Organizational culture
- 5) Teacher involvement in decision making
- 6) Positive relationships with parents and other community stakeholders.

The literature suggests that, in effective schools, the principals have a clear vision for the school and communicate that vision to teachers, students, and the community.

The school principal is one who is expected to monitor and evaluate student progress in courses, emphasize student achievement in their expectations, sets clear goals, and has knowledge of the instructional practices that teachers are utilizing in the classrooms (Beck & Murphy, 1993; Cotton, 2003; Hallinger & Murphy, 1986; Hoy & Miskel, 2001)

Today, improving school leadership ranks high on the list of priorities for school reform. As new challenges arise in school leadership, there have not been new revolutions in the methods and structures used to prepare principals for the challenges such as addressing the needs of minority student achievement in schools. In a detailed 2010 survey, school and district administrators, policymakers and others declared principal leadership among the most pressing matters on a list of issues in public school education. Teacher quality stood above everything else, but principal leadership came next. (The Wallace Foundation, 2013). One of the most important functions of a principal is the supervision and leadership of the teaching staff (Glickman, 2002). In that role, principals are tasked with helping teachers develop their skills so that they can better facilitate student learning.

The Role of Instructional Leadership for a Principal

Federal programs are emphasizing the importance of effective principals in boosting teaching and learning. Paying attention to the principal's role has become all the more essential as the U.S. Department of Education and state education agencies embark on transforming the nation's 5,000 most troubled schools; a task that depends on the skills and abilities of thousands of current and future school leaders.

The gap in academic achievement between disadvantaged and advantaged students' is an issue that needs to be addressed. In a school, that begins with a principal's spelling out "high standards and rigorous learning goals," Vanderbilt University researchers assert with underlined emphasis. Specifically, they say, "The research literature over the last quarter century has consistently supported the notion that having high expectations for all, including clear and public standards, is one key to closing the achievement gap between advantaged and less advantaged students and for raising the overall achievement of all students." An effective principal also makes sure that notion of academic success for all gets picked up by the faculty and underpins what researchers at the University of Washington describe as a school-wide learning improvement agenda that focuses on goals for student progress.

Cotton asserted that principals have a substantial impact on student outcomes and that this influence is indirect in nature because it is accomplished through leading other school staff members (Cotton, 2003). Effective principals work relentlessly to improve achievement by focusing on the quality of instruction. They help define and promote high expectations.

Principal engagement with parents in school community

The various approaches to parent and community participation in schools and the search for more equitable partnerships among them are generally seen as complex phenomena that are affected by a variety of factors involving issues of pedagogy, socioeconomic status, power, and ideology (Auerbach, 2007; Darder, 1991; Lareau, 2000). Although there are varied and even contrasting approaches to examining the issues involved, an increased level of parental participation is considered a key component of successful school reform by practitioners and researchers alike. This appears particularly relevant when there is a shared emphasis on its positive effects on the schooling of students from low income families and communities of color (Darder, 1991). Socioeconomic differences between white and minority students may be important in regards to students' achievement at the high-end of the course-taking distribution (Riegle-Crumb & Grodsky, 2010). Studies show that parents with advanced degrees tend to feel more comfortable than less educated parents confronting school personnel about their child's education, including advocating for access to advanced courses (Lareau, 2000).

The school principal has a big part in working with key school personnel to increase parent outreach, particularly around creating opportunities for students to enroll in challenging courses. For example, patterns of tracking are in part a function of prior placements of students in tracked courses in earlier grades, sometimes due to counselors' views that they should advise students in ways that are "realistic" about their futures, and in part due to the greater effectiveness of parent interventions in tracking decisions for higher socioeconomic status students (Kelly, 2009).

The impact of principal leadership on student achievement

While the role of the principal has involved over time, that has been much research contributing the values of school principals directly linking to student achievement (Kenneth Leithwood et al., 2004). Leithwood et al., (2004) supports the idea that effective school leaders exert influence through specific focused behavior that allows staff to feel valued, which directly impacts their commitment to students. Authors Leithwood, Seashore Louis, Anderson, and Wahlstrom (2004) make two important claims; first, “leadership is second only to classroom instruction among all school-related factors that contribute to what students learn at school” (p. 7); second, “leadership effects are usually largest where and when they are needed most” (p. 7). Without a powerful leader, troubled schools are unlikely to be turned around. The authors stress that “many other factors may contribute to such turnarounds, but leadership is the catalyst” (p. 7).

Successful principals contribute to student achievement indirectly through influence on others in their organization (Kenneth Leithwood et al., 2004). In 2003, Cotton published *Principals and Student Achievement: What the Research Says*, which presented data and findings from the review of research relating to the impact of the school principal on student learning in schools. The research examined the principal’s effect on several variables, with student achievement being one of them. Cotton summarized research on principals and student achievement by stating that “many leadership behaviors and traits of principals are positively related to student achievement, student attitudes, and social behavior” (p.67). Cotton found that principals in high achieving schools were effective in establishing a safe and orderly environment at school; setting high expectations for student achievement; conducting

classroom observations and providing teachers with feedback; creating professional development opportunities for learning; monitoring student progress and sharing findings; fostering a positive and supportive school climate; communicating and interaction; parent outreach; shared leadership; establishing a norm of continuous improvement; participating in honest discussions around classroom instruction and its impact on student learning; using student data to make informed program decisions; and encouraging effective role modeling (Cotton, 2003).

Redesigning the organization from the inside out requires that leaders identify and capitalize on the competence of others and both model and require collaboration. As author Carl Glickman (2003) observed: “In successful schools, principals aren’t threatened by the wisdom of others; instead, they cherish it by distributing leadership” (p. 56).

Social Cognitive Theory and Self-Efficacy

The theoretical framework of this study focuses on the social and cognitive psychology of human behavior defined as the social cognitive theory (Bandura, 1986). This theory developed by Albert Bandura, focused on how individuals behave and how the environment and other interpersonal factors impact their behavior. Bandura developed this theory for the purpose of analyzing human motivation, thoughts, and actions. While other theories supported the environment being the main impact of one’s behavior, Bandura made an effort to combine both perspectives. He acknowledged that behavioral, personal, and environmental factors impact each other and influences an individual’s behavior (1977).

The social cognitive theory supported the evaluation of an individual's beliefs. Self-efficacy reflects one's beliefs in their capabilities to organize and execute a task (Bandura, 1986). In the social cognitive theory, Bandura argues that an individual's belief about their own self-efficacy is reflected in their behavior.

The social cognitive theory supports this study through examining the notion that individuals exercise control over their behaviors and attitudes based on their experiences which can impact the environment around them. Bandura's theory also contends that people can have an influence on the environment around them through their behavior (Bandura, 1997).

Self-efficacy

Albert Bandura, defines self-efficacy as an individual's level of confidence in a specific task performance (1986). Bandura stated that an individual's expectations about their performance stems from experience. The most influential self-efficacy beliefs are influenced by specific situations. According to Bandura, one's expectations about cause and effect result from experience; the most powerful efficacy beliefs are situation-specific. Every individual's personal motivation and process of decision making are affected by one's self-efficacy beliefs (Bandura, 1995). Individuals with high self-efficacy tend to view challenges as opportunities to master rather than viewing them as issues to avoid. Theorists support the claim that people with high self-efficacy tend to approach tasks very differently than those with low self-efficacy.

A person's self-efficacy can form from four sources of information: mastery experiences; vicarious experiences, verbal persuasion, and physiological (emotional)

state. Every individual's source of information is often influenced by previous experiences of success and failure (1997). First, mastery experiences are the most powerful source of efficacy. Successful experiences of completing a task can enhance one's self-efficacy that can be transferred into future experiences (Bandura, 1997). The second source of self-efficacy is the vicarious experiences (modeling), in which we watch one succeed or fail at a task and analyze its impact on the observer. While this experience can enhance one's self-efficacy, the impact depends on the influence of the model being observed. The third source of self-efficacy is social/verbal persuasion. Social/verbal which is feedback from others persuasion, can have limited impact, unless the acknowledgements affective or emotional state (1977). This source can influence one to make quick judgments that are often reactions to emotions. In this instance, negative emotions can decrease an individual's self-efficacy. However, Bandura affirmed that this can be avoided when one is provided with support to manage obstacles (1982).

Bandura discusses the four sources of self-efficacy and the four processes through which beliefs influence human functioning-cognitive, motivational, affective, and selection. These processes confirm ways in which self-efficacy beliefs affect one's psychological well-being and functioning (Bandura, 1995). The higher that priority an individual gives to these beliefs, the higher the goals that individual sets and the more they are committed to reaching that goal (Bandura, 1989).

Based on the information about the various experiences of self-efficacy, an individual will develop their own self-efficacy beliefs about how to approach or perform a task.

The impact of self-efficacy on principal leadership practices

Research has reflected a body of work to support the belief that self-efficacy can be a dependable predictor of individual performance (Bandura, 1997). While leadership behaviors are important, it may ultimately be an individual's level of self-efficacy or belief in his or her own ability to achieve success that determines whether or not those behaviors will lead to successful outcomes (Bandura, 1977, 1986).

Principals play a significant role in leading schools towards improvement by being in a critical position to raise staff confidence, foster a culture of collaboration, and develop practices, which lead to school success. Therefore, it is important to examine the relationship between factors that influence a principals' sense of self-efficacy. Leithwood et al. (2004) stated, "Research about the forms and effects of leadership is becoming increasingly sensitive to the context in which leaders work and how, in order to be successful, leaders need to respond flexibly to their contexts" (p.22). To further support research in this area, Leithwood et al. (2004) stated, "Research is urgently needed which unpacks, more specifically, how leaders create conditions in their school which promote student learning" (p.22).'

As documented earlier in the literature review, an individual's self-efficacy beliefs plays a significant role in their willingness to accept challenging assignments, to put forth effort to perform difficult tasks, and to persevere through difficult tasks that are presented (Bandura, 1982). Despite this critical role, there is limited research conducted on the self-efficacy beliefs of school principals (Dimmock & Hattie, 1996; Tschannen-Moran & Gareis, 2005).

Summary

This chapter provided an overview of the No Child Left Behind Act which explored the various factors that contribute to the widening of the achievement gap adversely impacting African American and Latino students. The research focused more specifically on how this achievement gap is impacting minority students in mathematics, identifying barriers that begin as early as in their elementary years of school. The literature continued to examine how the role of the middle school principal can influence how expectations are set in schools to positively impact minority students as a critical element, particularly when gaining access to rigorous mathematics courses in middle school. By utilizing the social cognitive theory framework to further examine the impact of a principal's self-efficacy on their leadership practices, this study will hopefully contribute to the body of research which evaluates the impact of the principal's leadership in middle schools.

Chapter 3: Methodology

Overview

The purpose of this study is to examine the self-efficacy and beliefs of three middle school principals with high success rates of African American and Latino students in Algebra I. Specific variables, including race, gender, years of experience as a principal, years as the principal of the current school, and school size, were included to consider how these factors may influence the practices of the school principal. Through the examination of middle school principals' self-efficacy and beliefs that contributes to their successful practices, this study will provide meaningful data to help school principals create rigorous pathways to increase minority achievement in mathematics during the middle school years.

This chapter presents information about the methodology of the study, in addition to the research design and rationale, research questions, description of the sample selection, survey instruments used, and the data collection and analysis.

Research Design

This study uses a qualitative research approach in order to interpret phenomena in terms of the meanings people bring to them (Fontana, Frey, Denzin, & Lincoln, 1994). Using a case study approach, the researcher will conduct semi-structured interviews with three middle school principals to examine each principal's self-efficacy and beliefs around the enrollment and success of African American and Latino students in middle school mathematics. All interview questions require open ended responses from participants. The use of this method will allow the researcher

to build a complex yet holistic picture through analyzing words and perspectives from reports collected in a natural setting (1998). Willard Waller, in *Sociology of Teaching* (1932), believed that educators are not disembodied intelligences, nor machines, but are human beings tied together in a complex maze of social interactions. He describes school as a social world because human beings live in it (Waller, 1932). The researcher of this study references Waller's goal of developing insight into the social realities of school life (Bogdan & Biklen, 1998). As a qualitative research strategy, the researcher is asking questions about the meaning of what is happening in a field of human action (Lauritzen & Jaeger, 1997).

Rationale for Case Study

Case studies are one of the most popular and respected forms for studying educators and educational programs (Yin, 2006). These interpretive studies have helped people to understand the complex problems of schools (Fontana et al., 1994). A case study allows the researcher to develop an understanding through the description of what, where, how, when, and why through narrative and testimony (Lauritzen & Jaeger, 1997). Case study research allows an individual to investigate important topics not easily covered by other methods as it helps the researcher make direct observations and collect data in natural settings (Yin, 2006). When conducting a case study, selecting the case(s) is one of the most important steps in doing case study research. One advantage of conducting a study on multiple cases is that it reduces the suspicion that the skills in the study would be limited to a single case that could conclude that it is a unique situation (Yin, 2006).

The purpose of this study is to examine how middle school principals' perceived self-efficacy beliefs effects the success of minority students in Algebra I in middle school and how these beliefs impact their practice as school leaders. The phenomenon being studied is African American and Latino students earning a C or better in Algebra I, middle schools identified as having high passing rates for minority students in Algebra I, and the overall analysis is on principal's self-efficacy and beliefs through examination of three cases.

Research Questions

Since there are several middle schools with high passing rates of minority students in Algebra I, the researcher sought to capture the impact and perceptions of principal self-efficacy beliefs on three schools that best meet the criteria for the study. The criteria for identifying schools are reviewed in the sample overview. The following research questions guided this study:

- 1.) What are the beliefs and leadership practices of middle school principals with high success rates for African American and Latino students in Algebra I?
- 2.) What are the principal's experiences as an educator and/or leader that have impacted their thoughts about minority student achievement in mathematics?
- 3.) What have principals done as leaders to influence their student success rates?

Bandura (1977) has conceptualized self-efficacy along three dimensions- complexity, generality, and strength. When tasks are ordered from simple to difficult, people's efficacy may be limited to simple tasks or extend to the most difficult. The research questions above are focused on the dimensions of self-efficacy. Self-efficacy is often focused on a specific task. In this study,

the task is the principal's ability to close the achievement gap for African-American and Latino students accessing and successfully passing Algebra I in middle school.

Sampling

The target sample was drawn from the middle school principals working in BCPS, a large diverse school system in the south-Atlantic region of the United States. The school system serves over 140, 000 students in roughly 200 schools, including 38 middle schools. All principals in the school system are a part of a middle school PLC that measures student achievement by the successful completion rate of Algebra I by eighth grade.

The initial 38 comprehensive middle schools in BCPS were ranked based on overall performance of African American and Latino students earning a grade of C or better in Algebra I by eighth grade for the 2010-2011 and 2011-2012 school years. This group was further reduced after looking at the proportion of minority students enrolled in Algebra to the total number of minority students enrolled in the school to develop consistency in the process of selecting schools that met the criteria. Those middle schools that had a combined African American and Latino population that compared reasonably with the number enrolled in Algebra, (at least 50% of the minority student population was enrolled in Algebra I) were ranked in a descending order, which further reduced the schools to 8. Next, the researcher assessed the remaining 8 schools Algebra I completion rate with a grade of C or higher. The ranked middle schools demonstrated a two-year consistent rate of having at least 60% of the minority students enrolled in Algebra I complete the course successfully with a

C or better grade. After middle schools were prioritized based on the highest passing rates of minority students in Algebra I, another noteworthy characteristic that was used as a cross reference check to meet the criteria was verification of the principal's years of experience at the school. A minimum of three consistent years of experience as the principal was a requirement for all participants. Principals with two years of experience and less tend to underrate their performance (Hallinger, 1984)

In the case that fewer than three participants responded to participate in this study, the researcher collected an additional 8 middle schools with comparable performance results in Algebra I. These schools may not have an equal proportion of minority students in Algebra I compared to the overall number of minority students in the school, which was a consideration in the first sample of schools selected.

Participants

Three middle school principals of thirty-eight middle schools in a large suburban school district in the south-Atlantic region of the United States were selected as participants for this study. Out of thirty-eight middle schools, only three schools met the criteria. The three schools that exhibited at least a sixty percent passing rate for a two year period as reported by trend data in BCPS, were selected. Principals participating in this study were selected because their schools had high enrollment and success rates for African American and Latino students in Algebra I. All participants were required to have principal certification in administration and supervision at the secondary level, have at least three years of experience as a principal, and at least three consecutive years of experience as the principal at their current school.

Consent/Confidentiality

After selecting the three schools and middle school principals to participate in this study, the research sought approval from the Institutional Research Board (IRB). Once the approval was granted, the researcher contacted the school district's research office to gain permission to conduct this study. The case study will collect data from middle school principal interviews once approval is granted.

Once the study had been approved to conduct interviews, the researcher provided an overview of the study to the selected principals and made a request for their participation in the study (Appendix A). The research study conducted two interviews; one initial interview to meet with the principal, discuss any additional information regarding the study related to background information (Appendix C), and to review and obtain signatures on the consent form. The second interview, which will be scheduled for 50-60 minutes, will include questions designed to address the research questions of the study (Appendix D). Questions were divided into categories relating to the principal's own self-efficacy and beliefs; their personal experiences that influenced their self-efficacy and leadership practices; and their leadership experiences that have contributed to minority student achievement in Algebra. A full list of the interview questions are provided in Appendix D. The interview questions are open-ended requiring participants to discuss and share their overall experiences without being limited to a pre-determined response. Interviews were recorded to ensure accuracy and the researcher also took notes. Data from the interviews were coded to show themes in information collected from the interviews. Each interviewee's responses were transcribed by the researcher. The interviewer requested permission to follow up with the participants to clarify or get more

information about a response given during the interviews if needed. Participants were informed that the results of the research study might be published, but their personal information would remain confidential.

Instrumentation

Two instruments were developed by the researcher to collect data for this study-the background information survey (Appendix C) and the principal interview questions (Appendix D). The background survey information was collected for the purpose of sharing general information about the participants age, race, gender, years of experience as a principal, and years of experience at their current school. The principal interview questions were used as the primary method to collect data from principals about their ability to lead, the impact on others, and the influences that have impacted their ability to lead. The interview questions were developed based on findings from the literature review that revealed considerations when evaluating ones self-efficacy beliefs (Bandura, 1982).

Data Collection

The measurement of principal self-efficacy presents a number of difficulties for researchers, although numerous scales have been developed (Dimmock & Hattie, 1996; Tschannen-Moran & Gareis, 2004). Due to the role of the principal presently being reflective of their leadership practices impacting student achievement, it is important to continue to evaluate the self-efficacy and belief systems of principals. While this study did not quantify the self-efficacy of each principal according to a scale measure, it does seek to examine middle school principal beliefs in their abilities to influence the success rate of minority students in Algebra. This case study

sought to reveal overall data that reflects the self-efficacy beliefs of four middle school principals who led the charge for minority student achievement in Algebra. Each principal was allowed to share other documents during the interviews that would show support of their efforts to lead this charge. The school improvement plan is one document principals often shared to reflect the overall school goals. Other documents collected from the principals during the interviews assist in being able to triangulate data. Good case studies benefit from having multiple sources of evidence to make the findings of the research as robust as possible (Yin, 2006). The most desired outcome of a case study occurs when two or more independent sources all point to the same facts (Yin, 2006).

In analyzing the qualitative data collected in this study, the researcher recorded and transcribed the data obtained through the interview process. The researcher analyzed the data and identified themes and patterns that emerged from the data. A full review of the discussion of the qualitative data that was collected is included in chapter four.

Conducting Interviews

Semi-structured interviews were conducted in this study to examine how a principal's self-efficacy and beliefs impact the academic achievement of African American and Latino students in middle school mathematics, particularly enrollment and successful completion in Algebra. Interviews are important when assessing how others interpret the world around them (Merriam, 1998). The interview format allowed the participants to answer with all open-ended responses.

Principal interviews were contacted at each principal's home school or location of their choice. Interviews were recorded and ran from 60-75 minutes long. The researcher also took notes during the interview and transcribed the notes and interview data. Transcriptions were stored in the researcher's database as well as on a secured personal hard drive.

Data Analysis

The primary source of data used for this study was the interview data collected from participating middle school principals. During the interview session, principals were encouraged to share any documents that supported a reflection of their leadership practices to help support an examination of their leadership skills. General information that was also collected to be used in the data analysis was each principal's school improvement plan. This document would reveal each school's goal and focuses for the school year and was collaboratively developed by school leaders, as the principals were designated to lead this process. A document summary form will be used to help put the documents collected in context, explain its significance, and give a brief summary.

While transcribing data collected after interviews were conducted, the researcher identified patterns and themes from participant responses to understand common themes (Creswell, 2003). A content summary sheet was used to focus and summarize questions related to each principal that was interviewed. Descriptive codes were developed and used to help synthesize and dissect the notes in a meaningful way.

Ethical Issues

The researcher conducted this study in a school district in which she is currently employed as a middle school principal. While the researcher is a part of the professional learning community of middle school principals in the system, she is not in a supervisory position over any participants in this study. The researcher obtained consent forms from each participant and shared that there would be no references or direct links personally to principals or schools in this study. Data will be kept on file in accordance with the IRB requirement timeline. After that required timeline has ended, the data will be destroyed.

Limitations

This study was conducted with the following limitations:

1. All information was self-reported by each principal for this study.
2. The information reported by each principal may not be reflective of their true beliefs.

Summary

The researcher used a qualitative research design to conduct multiple case studies to study the self-efficacy beliefs of middle school principals with high successful completion rate of minority students in Algebra. While the research questions did not directly ask participants to identify their own levels of self-efficacy, the questions were formed to gather their perceptions about their beliefs related to self-efficacy and practices that would support their individual levels of self-efficacy. This study sought to reveal the connection between the principal's beliefs and how

those beliefs influence their thoughts, beliefs, and actions. The research questions were designed to further investigate how the beliefs and practices of middle school principals factor into the outcome for their minority students in the area of mathematics. This study focused on each principal's self-efficacy and beliefs that influence their leadership practices. Qualitative data was collected by conducting semi-structured interviews with a sample of three middle school principals. The consistent themes and patterns of data will be further explored and presented in chapters 4 and 5.

Chapter 4: Findings

Overview

School principals have a significant role on the academic experiences of students and their achievement (Hallinger & Heck, 1996; Kenneth Leithwood et al., 2004). As the job of the principal is one that can be complex, the self-efficacy beliefs of each individual principal is a key factor in their performance and the influence on their students (Bandura, 1977, 1997). Efficacy beliefs are developed through an individual cognitive process that shapes an individual's behaviors through sources of mastery experience (influence from a past experience), vicarious experience (the perception from observation of another's experience), social persuasion (feedback from others), and effective states (driven by emotions). Based on the information about the various experiences of self-efficacy, an individual will develop their own self-efficacy beliefs about how to approach or perform a task. Therefore a principal's impression of self-efficacy or belief in his or her own ability to achieve success can lead to successful outcomes (Bandura, 1977, 1986).

Chapter 4 provides narratives of three middle school principals and an analysis of the data collected through audio-recorded interviews with each principal. The collection of data reflects information that each principal shared from a written questionnaire that included 4 demographic questions and one open ended question (see Appendix C). Personal interviews were also conducted that included five open-ended questions (see Appendix D). The interviews focused on the following research questions:

- 1.) What are the beliefs and leadership practices of middle school principals with high success rates for African American and Latino students in Algebra I?
- 2.) What are the principal's experiences as an educator and/or leader that have impacted their thoughts about minority student achievement in mathematics?
- 3.) What have principals done as leaders to influence their student success rates in Algebra I?

The researcher sought to examine what middle school principals believe about their ability to influence minority student achievement in mathematics in middle school, and more specifically, how their beliefs and practices promote high success rates of minority students in Algebra I by the end of eighth grade.

This chapter presents the qualitative data analysis and findings related to each principal's perceptions self-efficacy. While this study did not ask principals to report and identify their sources of efficacy, each participant shared responses that reflected experiences with all sources of self-efficacy at the mastery, vicarious, social, and affective states. Questions were asked of each participant that allowed for responses to reflect their perception of self-efficacy, as it relates to providing opportunities for minority students to enroll in and successfully pass Algebra I in middle school. The researcher sought to find patterns in the participant responses that align with the four categories of efficacy. Interviews were scheduled at a location convenient for each participant and each interview was transcribed which took approximately three hours. The researcher then examined the data to identify themes or patterns that emerged from the interviews. The researcher used a coding system to help identify themes and patterns in the interview responses. Special attention was given to responses that related to each participants perception of the four sources of self-efficacy.

The researcher used interview questions aligned with each participant's perceptions of self-efficacy to gain a sense of their beliefs, attitudes, and actions. The research questions were used to frame the interview questions to collect and analyze data.

Case Descriptions

Three middle school principals who had high successful completion rates of African American and Latino students in Algebra I provided data for this case study. They were selected based on a sampling that was described in chapter three. Each of the schools had at least 50% of the minority student population (African American and Latino students) enrolled in Algebra I and at least 60% of those students completed Algebra I successfully by the end of eighth grade with a grade of C or better. In the selection process, middle schools in BCPS ranged from having 22% to 62% of minority students enrolled in Algebra by eighth grade. Principals from the schools who met the criteria were emailed a request to participate in the study. Upon accepting the invitation to participate, the principals were sent the demographic questionnaire. Following this, each interview session began with a review of the study's purpose and the participant's role in the study. Each participant was asked permission to audio-record the interview. The background demographic information for each principal is outlined in Table 1. The table is followed by a brief description of each participant.

TABLE 1
Demographic Data from the Three Principals in the Study

Demographic Characteristics	Principal A	Principal B	Principal C
Gender	Female	Female	Female
Ethnicity	African-American	African-American	African-American
Years as a principal	3-5 years	3-5 years	10-15 years
Years at current middle school	5 years	4 years	12 years
Influences to become a principal	My high school principal who created opportunities for me.	Her observation of minority students being given limited opportunities to achieve.	Her love for middle school students and her experience as an assistant principal inspired her to want to lead a building for positive change. She has been most inspired by her previous principals while serving as an administrator.

Principal A

The principal of Middle School A (Principal A) is an African American female who has held the position of principal for the past five years (at School A). She served as an English teacher and then staff development teacher prior to going into administration. Principal A was influenced to become a middle school principal by her own high school principal. Her high school principal took the time to ensure that she had a wide range of opportunities which in turn, made her want to create a learning environment rich in opportunities for every child.

Principal B

The principal of Middle School B (Principal B) is an African American female who has worked as a principal (at School B) for the past four years. Prior to going into administration, she served as an English teacher and then staff development teacher. Principal B was influenced to become a middle school principal when she worked as a staff development teacher and saw that African American, Latino, students receiving special education services, and FARMS students were not able to advocate for themselves to be in higher level courses. Principal B saw these students being put into low level classes where they would become invisible, regardless of their ability. She was then inspired to become a middle school administrator to tear these gates down that were being built to prevent minority students from having access to more rigorous courses.

Principal C

The principal of Middle School C (Principal C) is an African American female who has held the position of principal (at School C) for the past twelve years in Burnett County Public Schools. She served as a math teacher prior to going into administration. She served as an assistant principal for fifteen years prior to becoming a principal.

Principal C was influenced to become a middle school principal by her love for middle school age students because it was fascinating to watch them achieve academically and learn to negotiate their social lives. She was a middle school assistant principal for fifteen years, and after gaining so much knowledge and leadership skills, she wanted to have the opportunity to be a principal and lead a

school for improvement. The most influential and positive professionals were her former principals.

Table 2 below provides an overview of the middle schools where each participant serves as principal.

TABLE 2
School Demographics

School Demographics			
	Principal A Middle School A	Principal B Middle School B	Principal C Middle School C
Enrollment	850+	600+	900+
African-American (%)	11.1%	32.2%	9.8%
Hispanic (%)	12.4%	27.6%	9.4%
White (%)	63.6%	21.3%	49.1%
Asian (%)	8.5%	12.6%	28.2%
Other (%)	4.4%	6.3%	3.5%
FARMS (%)	10.7%	44.7%	7.3%
Free And Reduced-price Meals Students			

As seen above, school A has a predominantly white student population while schools B and C serve a larger percentage of minority students. School C has a significantly larger percentage of Asian students, when compared to schools A and B.

School B has the largest number of African American and Latino students, as well as impoverished students with just under half qualifying for free and reduced meals.

Presentation of Findings

Self-efficacy beliefs have a significant effect on the choices that people make, the challenges they are willing to face, the effort they exert in facing challenges, and the persistence they demonstrate when challenges are particularly difficult (Bandura, 1986) Individuals develop, maintain, and update their beliefs through a constant process of intake, interpretation, and evaluation of four primary sources of information (Virga, 2012)- mastery, vicarious, social, and affective states.

In this chapter, the research findings are presented. The participant responses from the interviews reflected mastery experiences, vicarious experiences, verbal persuasion, and affective states as they relate to the three research questions. Interview questions were developed to generate responses from participants that reflect their perception of self-efficacy-their ability to influence change relating to a specific topic- influencing high enrollment and passing rates of minority students taking Algebra I in middle school.

The five interview questions were aligned to the three research questions (see Appendix D). After information was collected and transcribed, the researcher sought out themes (topics) based on the interpretation of qualitative research by Creswell (2003). There were four topics that emerged from the interviews. A color code system was used to apply every interview response to the correlating research question. Additional subtopics were established and the researcher counted checked whether or not each of the respondents mentioned the Core Topics.

Table 3 represents the core topics and subtopic categories. The areas that were identified as Core Topics were - *Creating Pathways of Access, Teacher Selection, Student Support, and Instructional Leadership*. The core topics were identified from patterns found in the participant interviews. The subtopics reflect the principal's particular practices and addresses each of the core topic areas.

TABLE 3
Identified Subtopics Related to Core Topics

Core Topic	Subtopic	Subtopic	Subtopic
Create Pathways of Student Access	Collaboration with elementary schools	Collaboration with parents	Setting the expectation with school leaders to create opportunities
Teacher Selection	Beliefs aligned with minority student achievement	Knowledge of content and good instructional practices	
Student Support	Specified programs and strategies	Relationship Building	
Instructional Leadership	Focus on establishing PLCs	Analyzing student data	

Table 4 represents the core topics and percentages were calculated showing how many of the principals mentioned the core topics.

TABLE 4
Core Topic Responses

Core Topic	No. of Participants Responding	Response %
Create Pathways of Student Access	3	100%
Teacher Selection	3	67%
Student Support	3	67%
Instructional Leadership	3	100%

Core Topic #1: Create Pathways of Student Access

The principals who participated in the interviews were experienced middle school principals who had demonstrated high levels of minority student success rate in Algebra I by the end of eighth grade. Through analyzing the interviews, common themes emerged as participants shared mastery and vicarious experiences when describing their leadership background, beliefs, and practices. Interview questions 2, 3a, 3b, and 4 were written and ordered to capture experiences that contributed to each participant's self-efficacy. Each of the principals described a focus on creating pathways for minority students to access rigorous math courses. Within that topic, the subtopics of collaboration with elementary schools, collaboration with parents, and setting the expectation with school leaders to create opportunities, were reoccurring themes throughout the interviews. In most cases, principals reported this belief of providing access to all students, but each acknowledged that special attention needed to be paid to minority students' in course selection and success in

mathematics. The subtopics represented each principal's belief in their ability to collaborate with others to share their vision to lead for change and equity. While each of the principals had similar experiences with creating access, Principal B had almost double the number of students enrolled in Algebra as Principal A and Principal C due to the higher number of minority students enrolled at School B. Although Principal B shared the same expectation around access for minority students in rigorous math courses, the challenge of managing that success at School B was different. School B had almost double the number of students in Algebra at a school that faced many more challenges than School A and School C. In several ways Principal B was more intensive in her commitment to providing access and ensuring success for minority students in Algebra. Principal B's responses were very reflective of her as a dogmatic leader who was relentless in her messages to staff that they had to own the success or failure of their students.

All principals believed that it was their responsibility to set the expectation within their schools that minority students needed to learn math and there would be a commitment to them being successful in completing Algebra I. In each of their buildings, each principal delivered this message to staff in various ways.

Principal A

Principal A shared her experience of communicating with the leaders the priority of minority student achievement through building their capacity to understand the vision.

We just did a walkthrough looking at student and staff relationships because we have been focused on race and equity training. So we

specifically asked the leadership team to go in and look at the interactions between our Black and Hispanic students and their teachers. The leadership team came back and said, “Oh there weren’t any black or Hispanic students’ in those classes, maybe one or two.” So they started to realize that some courses have more minority students and there are some courses offered where they are visibly absent. So helping the school leaders recognize that and see that we have to push beyond to make sure we are giving all students access to these higher level courses.

Principal B

Similarly, Principal B shared her expectation by working with the staff closely to identify students who they want to move up in math. Contrarily, Principal B shared the challenges of managing and owning minority student success in a school with a very diverse student population including other challenges such as FARMS rates, lower parent participation, etc.:

As a principal in a system that is not led by minority leaders and the beliefs in the system are very much engrained in mainstream white culture, I am the person who must create hope for my black and brown students. While students within the system are becoming more diverse, my school demographic make-up includes 60% of African American and Latino students. I have to lead and develop systems that give the belief to all of my students that they can attain success in any

course, regardless of the challenges that they have faced in math prior to coming to School B.

We start looking at kids early, in 6th grade and make decisions about where we should put them to be on the trajectory towards Algebra by 8th grade. We communicate to the students as a staff that we believe they can do it and are planning for them to walk out with a high school credit course, Algebra.

I believe that every kid should have a chance and I always say to my staff, “every day a kid goes without rigorous instruction in our building is another nail in their coffin and it’s not fair to them.

Sometimes when looking at data, I am bothered that our minority students perform at the same level as white and Asian students, yet are recommended for on-level math courses. It’s frustrating when there is a belief to move them into an on level course to keep our African American and Latino students’ safe and feeling good, versus putting them in a situation where they can excel and persevere when a challenge is presented. I have to work with staff to change that mindset and practice.

Principal C

Principal C shared that it is intentional on her part to work closely with the math resource teacher and counselors to ensure that minority students have access to rigorous courses.

I work very closely with the math resource teacher and the resource counselor particularly to ensure that our African American students have opportunities. I think the counselors are key and I think if you have a math resource teacher who actually believes that kids can achieve then that just key to the whole notion of success for African American and Latino students.

Each of the principals also shared their experiences of collaborating with their elementary schools and parent community which was common. They referenced experiences that reflected mastery experiences involving relationships with feeder elementary schools and parents:

Principal A:

Through our NAACP parent meeting, we try to convey to parents of minority students that they should advocate for their child to take a higher level course if they see that they are not recommended and they believe the child can do it. We also work with our feeder elementary schools and give that same message. I have three feeder elementary schools and we have meetings with the 5th grade teachers, team leaders, counselors, and administrators to share the support we have

for kids and we stress and really emphasize that we want kids to be recommended for what they have the capacity to do.

Principal B:

If you backtrack and look at the forms from elementary schools you may see that sometimes it starts there. We actually go out and work with our elementary schools and send them data to show them the kids that we have moved up and engage in conversations with them about our vision for students taking higher level courses. We also meet with our parents to let them know the trajectory their kids are on to complete Algebra in middle school. We want them to understand the opportunities we want to create for our kids.

Principal C:

Personally, I think that our students are tracked in elementary schools and once they are tracked like that, it is hard to break that barrier. So we have to work with our schools, teachers, and the parents because sometimes the parents don't believe their kids will be successful in higher classes. We have to let them know that the students can do it and we will help them.

Not only do we have to work closely with our teachers, but we also have to work closely with our parents because sometimes parents don't believe their kids will be successful in higher level classes. We have to share with parents the full picture of what we do to support them and what the impact can be in the future, after middle school.

I think that as a principal we have to set the stage so that other leaders can feel empowered about what they do. Whether it is improving how we work with the elementary schools or working with parents. We have to talk to the parents and the elementary schools to get them on board.

Core Topic #2: Teacher Selection

Another theme that emerged from the principal interviews was their strong belief in selecting the right teachers to teach and motivate students. These themes emerged consistently from interview question 5. The subtopics that emerged from teacher selection were that teacher beliefs should align with minority student achievement and that there is a need for strong knowledge of the content and use of good instructional practices in the classroom. “Hiring and teacher selection” were cited throughout the interviews. Principal B, more specifically, highlighted how she owned the responsibility of selecting teachers who shared her same beliefs about student achievement:

Principal A:

I have the very best math teachers that I have teaching Algebra. My algebra teachers are the most popular teachers because they are down to earth, are clear, use discourse in classes, and connect with students by building those strong relationships with them. So I think that teacher selection piece is important because we want teachers who kids love and can really learn from.

Principal B:

It is my opinion that as the principal that I have to find the right teachers to place in front of our minority students, that have the belief that any kid can achieve. And they also need to have the motivation to do whatever they have to do that is going to make sure that the child is going to be successful in the course. They make themselves available to students and structure the classes to address their individual needs.

I have a strong belief in kids and I believe that whoever I hire has to have that as well. And I am willing to help them get to that point. But I am also willing to be honest when someone is doing harm to kids, emotionally or academically. It is my responsibility to put the best teacher in front of our kids. It is the biggest thing we are confronted with every day. When kids don't have the best teachers, it takes them three years to recover from that poor teaching.

I have to make sure that the teachers that I have are teachers with the mindset that focus on making Algebra a safe environment for kids and making them feel like they (students) can always get better with their skills.

Principal C:

I feel that special attention needs to be directed toward African American student achievement. I feel that if teachers don't believe that, they really should not be in the practice of teaching because it is well-known that our students lag behind their peers.

I think that student success is tied in with teacher success. You want the students to be definitely successful, but the teacher needs to be successful too. Teachers have to be really creative with the strategies that they use to increase student achievement.

Core Topic #3: Student Support

Each of the principal interviews revealed their high expectations and “will” to implement structures within their school that focused on the students and their academic and social welfare. The student support theme emerged when interview questions 1, 3a, 3b, and 4 were asked. In each interview principals made repeated comments about the need to support minority students who are in those higher level courses and the importance of them having positive relationships with those teachers who teach them. The principals shared a variety of ways they provide support to minority students who are in higher level math classes.

Principal A:

When we put students in the classes to provide them opportunities to have rigorous curriculum, we do several things to support them. It is a priority for us to have structures in place to support these students. We have a summer program that focuses on Algebra that is 3 weeks long but we look at this as a way for them to be a step ahead for them to be exposed to those algebraic concepts before taking the course in the fall. We also have an advisory for students that are open to all students for twenty minutes every day, who are having difficulty in math. So these are some things that we do to support student success.

My algebra teachers are the most popular teachers as they have very, very strong relationships with students.

Principal B:

We make sure that we have structures in place to support our kids as they go through the advance curriculum. We make sure we watch their data to see how they are performing in classes and then we start talking with them about their performance and what we believe they can do to instill that confidence in them.

One thing that I think contributes to our success is that we are always analyzing our student data and are aware of where kids stand and how they are progressing in those math classes. As a principal, I know how kids perform on their formative and summative assessments. This data tells us what we need to focus on in our instruction to make sure that kids who didn't get it actually get it.

Principal C:

I think that in addition to the subject matter, positive relationships with students are important. I think that if kids want to come to our class no matter what the subject is you are teaching, it think that is always positive. This is important particularly in math because for our minority students- math can be a source of fear and we want to take the fear out of it.

Core Topic #4: Instructional Leadership

The core topic of instructional leadership emerged with the subtopics of establishing effective PLC's and the practice of analyzing student data. This topic emerged from interview questions 3b and 5. Each of the principals shared mastery experiences in their ability to coach the staff in how to establish effective PLC's and monitor student data to address their needs to ultimately be successful in higher level classes.

Principal A

I see leading and encouraging use of good instructional practices as my first line of responsibility because that means that everyone can access the curriculum. A part of that is making sure that we see the connection between what students are learning in school and the practical use for that and how and why its meaningful for them in their lives. It's all about the instructional practices. I feel like we see more success as kids are able to increase their level of discourse in the classroom.

We have particularly been focused on Algebra professional development this year with the new common core. But that professional development time for the teachers to be a part of a PLC all helps. They work together and when we move from class to class, we see the same good instructional strategies being used with the Algebra curriculum this year. They truly have understood the value of working together to get things done.

Our Algebra teachers spend time looking at how the kids are doing and talking about ways to get them prepared to move successfully through the curriculum.

Principal B

We have planning for the Algebra teachers to make sure they have that departmental time to work together, the experience and new teachers. When you have that mix of ideas coming to the table, you have new uses of technology and some traditional practices combined to provide the students with a variety of experiences. We make sure that math time for the teachers are isolated and they can spend time to talk about ways to check for understanding and look at kid's data.

I go back to some of the structures that we have such as always analyzing our data and know where the kids stand. As a principal and supervisor of the department, I know where every kid stands in terms of how they performed on formative and summative assessments. So it's powerful that we can always talk to kids about their performance and they know that we are aware and watching how they are progressing along the way.

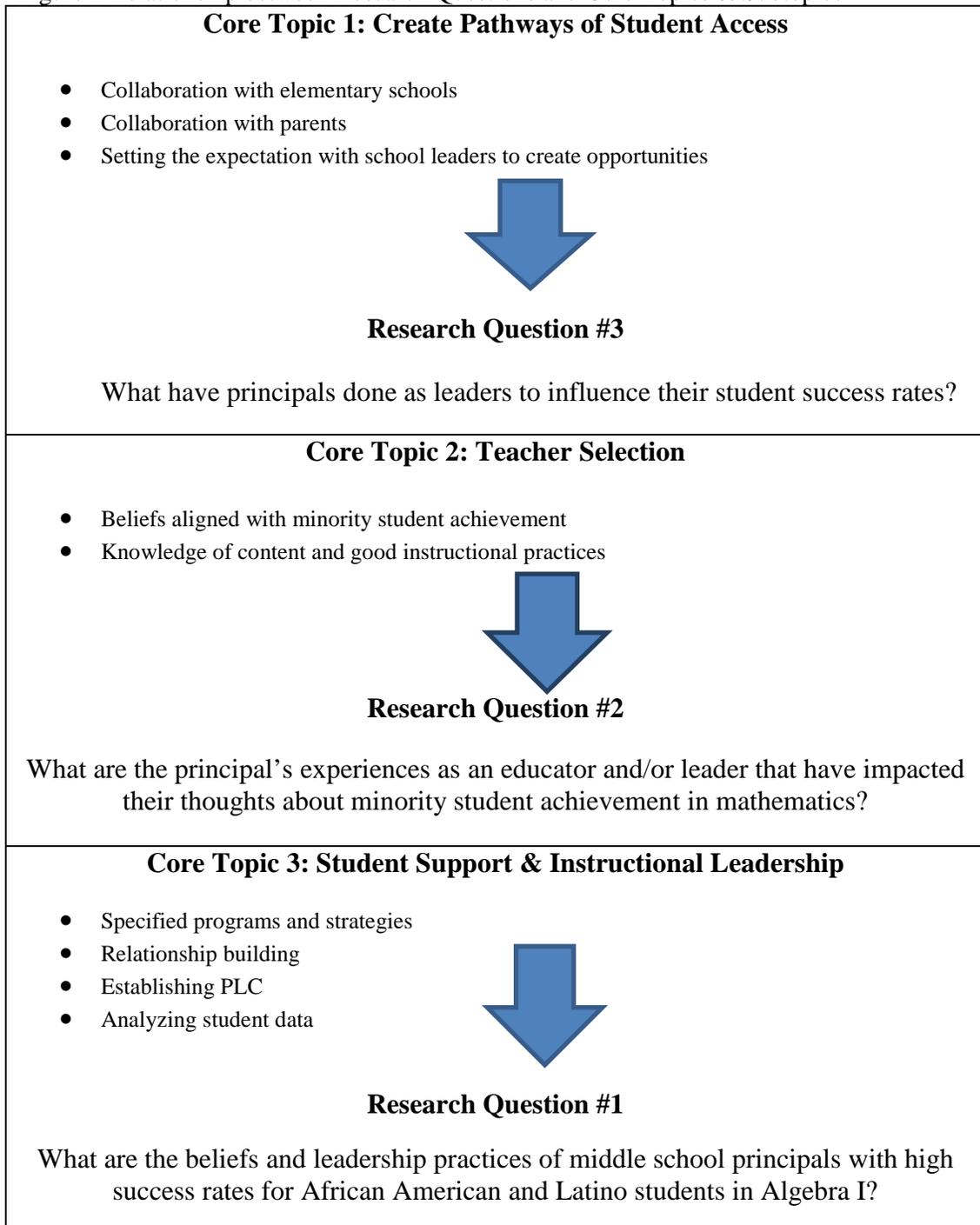
Principal C:

I think the principal has to set the stage for leaders to feel empowered about what they do. We provide opportunities for kids and monitor their growth, but if someone comes to me with another idea of how to

do that, I want to be a supportive leader and coach them through the conversation and help them feel empowered to make a change.

In summary, important topics emerged from the interviews with the principals. The principal's experiences reflected their commitment to creating pathways of access for minority students, their commitment to selecting the best educators for their students, their focus on creating and sustaining student supports, and their understanding the importance of instructional leadership. While collectively the principals shared many similarities in their beliefs and practices, Principal B represented a more dogmatic leadership style as she leads a school with a incompatible demographics compared to School A and School C. Principal B's leadership style coupled with her methodical planning around getting students on a more rigorous mathematics pathway beginning in sixth grade could suggest that her beliefs and actions are greatly influenced by her school having greater challenges than the other two schools participating in this study. Meaning and interpretations were negotiated with human data sources because of the researcher's attempt to reconstruct (Creswell, 2003). Questions from the interviews were aligned with the three research questions. Each of the research questions aligned with the core topics and subtopics which emerged from the interviews (see figure 1.)

Figure 1 Relationship between Research Questions and Core Topics & Subtopics



Summary

In this chapter, the data analysis and findings for this qualitative case study have been presented. The process was outline for the data collection, explanation of participants' roles, and confidentiality. Data collection was done through a questionnaire, which collected background information on each participant, and personal interviews. The participants sense of self-efficacy was confirmed their shared experiences. Participant experiences showed sources of all four sources of self-efficacy, -mastery experiences, vicarious experiences, verbal/social experiences, and affective/emotional experiences, which will be further explored in chapter five. Throughout the interviews, principals shared mastery experiences that reinforced their belief in their capabilities to complete tasks and be successful leaders as it relates to minority student success in mathematics in middle school. Finally, the researcher was able to identify and examine themes that emerged from the interviews with principals from three successful middle schools. The data collected shared poignant beliefs about each participant's ability to have high success rates for minority students completing Algebra I by the end of eighth grade. In the next chapter the researcher presents conclusions and recommendations based on the findings of the study.

Chapter 5: Summary, Recommendations, and Conclusions

This study described the perception of the self-efficacy beliefs of three middle school principals who had high enrollment and success rates for minority students taking Algebra I in middle school. The purpose of this qualitative study was to explore the perceptions of each principals' self-efficacy beliefs and leadership practices regarding the success of minority students taking Algebra I by the end of middle school. This chapter is organized into the following sections: research summary, summary of findings, recommendations for future research, recommendations for practice, and conclusion.

Research Summary

Context for the Study

This study took place in Burnett County Public School (BCPS) system, which has a quickly rising percentage of minority students enrolled over the past decade. One of the benchmark targets for middle schools in BCPS was to have middle school students complete Algebra I successfully by the end of eighth grade. An overarching focus in the school system was to eliminate the achievement gap in schools so that access to rigorous courses and student success in those courses were not predictable by race. Middle school principals sought out ways to not only address the achievement gap within their schools, but looking specific at the Algebra I benchmark through the lens of race and equity to create successful opportunities for minority students in middle school mathematics.

Research Problem

Middle school principals who hold high expectations for students and provide access for minority students to excel in rigorous course work prior to entering high school prevent minorities from being locked out of “gate keeper” courses leading to higher education (Evan et al., 2006; A. Johnson, 2010). The beliefs, thoughts, and actions that influence their level of self-efficacy impacts their successes or failures as school leaders. African American and Latino students continue to lag behind their White and Asian peers in enrollment and achievement in advanced courses-Algebra I specifically in middle school. Research has indicated that principals have an influence on the student learning that occurs in their schools (K Leithwood & Jantzi, 1997; Marzano, Waters, & McNulty, 2005). Creating the conditions for minority students to enroll and achieve in Algebra I in middle school falls under the leadership of the principal. While there are many leadership influences that impact a school, the principal remains the central source of leadership influence that impacts student achievement, and particularly equitable practices that level the playing field for African American and Latino students (Singleton & Linton, 2005). There is limited research examining the impact that principal leadership beliefs have on minority student enrollment and success rates in Algebra I in middle school. This study seeks to add an understanding of three middle school principal’s beliefs and leadership practices that produces high success rates of minority students taking Algebra I in middle school. A person’s sense of efficacy is about their belief about their ability, not their actual ability. This study explores evidence that may suggest that school leaders’ individual sense of self-efficacy is directly connected to minority student achievement in mathematics. Because most leadership effects are indirect, the study

will help to discover the link between the school leaders, beliefs and actions (self-efficacy beliefs) to student success.

To support and further this area of research, this researcher conducted a study of middle school principals with high success rates of minority students completing Algebra I by the end of eighth grade in middle school. This question was formed by research outlined in the literature review, which supports the theory that principal beliefs and practices impact student achievement. To further explore this theory, this qualitative study explored three research questions:

Research Question #1

What are the beliefs and leadership practices of middle school principals with high success rates for African American and Latino students in Algebra I?

Research Question #2

What are the principal's experiences as an educator and/or leader that have impacted their thoughts about minority student achievement in mathematics?

Research Question #3

What have principals done as leaders to influence their student success rates?

Research Methods

The experiences of three middle school principals were examined in this case study to describe the perceptions of their self-efficacy beliefs and how it relates to minority students access and high success rates of Algebra I in middle school.

Chapter 3 explained the research design and methodology used in this study, while chapter 4 provided background information about each principal, their schools, and a summary of findings from the interview data collected. After selecting the principals against a specific criteria outlined in chapter 3, the researcher conducted interviews, which followed an interview protocol. The researcher recorded, transcribed, and analyzed the interviews to identify themes in the qualitative data. The analysis of that data produced findings regarding the principal's perceptions of self-efficacy beliefs outlined in the summary below.

Summary of Findings

Study Participants

Each participant in this study shared responses that reflected the four sources of self-efficacy: mastery experience, vicarious experience, social persuasion, and affective states. While each of the four sources were identified in every principal's responses, all three principal's successful leadership practices were related to a mastery or vicarious experience which impacted their perceptions of self-efficacy. Each principal was selected through a process of examining Algebra completion data (students earning a grade of C or better by 8th grade collected from all middle schools in BCPS). The researcher then checked to ensure that at least 50% of the Latino and African American students enrolled matched a rate of 50% of their combined enrollment. These principals were selected to participate in this study because 60% of their minority students enrolled in Algebra completed the course successfully with a grade of C or better over a two year period. After agreeing to participate in this study, each principal agreed to participate in an interview to collect data on their

perception of self-efficacy and leadership practices that contributed to minority student success in Algebra.

Principal A has been the leader of her school for 5 years. School A's FARMS rate is 10.7%. While her combined student minority population represents roughly 24% of the student body, Principal A expresses a strong sense of self-efficacy through evidence of her expectation that excellent instructional strategies are being implemented by teachers in the classrooms. Principal A experienced mastery experiences previously as a staff development teacher in which she influenced teachers by teaching them and she observed good teaching practices positively impacting student learning. As a principal, she shared how the same instructional leadership on her part as a building instructional leader has positively impacted minority student achievement in Algebra I at her school. Principal A's successful experiences (mastery experiences) previously as an instructional leader contributed to her feeling equipped and prepared to achieve the same positive results in her current school. She explained that as a principal, she has to ensure that opportunities are being given to avoid gatekeeping, and when they are given, students are receiving great instruction in the classroom and extra supports if needed to ensure their success. Principal A indicated that under her leadership, other school leaders have come to realize that it has to be a collective effort to provide students access in higher level courses, specifically minority students in mathematics.

Principal B has been the instructional leader at Middle School B for 4 years. School B has a FARMS rate of 44.7% and a combined student population of African American and Latino students of roughly 60%. Principal B expressed a strong sense

of self-efficacy through evidence of her belief to create the opportunities of access for minority students. Moreover, Principal B's biggest focus is on providing students access to rigorous courses and hiring practices to get the most skilled and encouraging teachers who have a belief system aligned with her vision for the school. Principal B has a sense of personal connection to the work with students through evidence of her supervision of the math department as well as her expectation that the teachers at her school analyze student data to address performance needs. Principal B's leadership style, actions, and ability to manage a significantly impacted school revealed not only the importance of a principal's personal investment, but how the ability to be courageous and confident as a leader contributes to student academic success within a school building.

Principal C has served as the principal at School C for 12 years. School C's combined minority student population is 19.2% and the FARMS rate is 7.3%. Principal C expressed a strong sense of self-efficacy through evidence of her working with school leaders to create opportunities for minority students to move up in math and not be tracked to take lower level courses. She shows passion towards minority students being on the right track to take rigorous courses in high school in preparation for college. Principal C is invested in her teachers being successful in teaching students in math and building relationships so that students will feel comfortable taking risks in the classroom.

Commonalities

There were four aspects that were consistent in each of the participant's responses when asked to describe their background and describe what inspired them

to each become a middle school principal. The commonalities with each of the principals were: their race (African American), their gender (female) and each of them were inspired by an experience that they had or observed that related to minority students getting limited access and support to higher level mathematics. The three principals in this study are included in the 26% of African American female middle school principals in BCPS. While two out of the three principals were inspired by other school leaders, they each expressed a desire to impact change for students. Each of the principals shared their personal investment to the challenge of closing the achievement gap. In addition to this factor, all three principals presented examples of how they delivered courageous messages about minority student achievement to their stakeholders and established programs and systems that support the vision of closing the achievement gap in their schools.

Bandura (1995) shares the four sources of self-efficacy-mastery experiences, vicarious experience, social experience, and affective states- all influence an individual's efficacy beliefs that regulate human functioning. Mastery experiences are the most powerful source of self-efficacy beliefs because they provide demonstration of one's dedication to success. The most frequent experiences shared by the participants were described as mastery experiences. This supports research that explains that mastery and vicarious experiences are ones that are most influential in the sources of efficacy to an individual. These participants each shared successful experiences, prior to becoming principals and while serving as principals that shaped their personal belief about creating opportunities and academic success for minority students that have influenced their leadership practices. These mastery experiences,

of which they each felt destined to replicate as principals, helped shape their beliefs and actions that have directly influenced minority student access and academic success in Algebra I by the end of middle school.

Discussion of findings: Middle School Principal self-efficacy beliefs related to minority student success rates in Algebra I

Finding #1: Create Pathways of Student Access:

The principals in this study felt that it was a priority for them to lead the charge of working with others to create pathways for minority students to be able to enroll in Algebra I and pass it by the end of eighth grade. As such, participants created opportunities to collaborate with their school leaders, elementary schools, and parents to support their vision of minority student's accessing rigorous courses like Algebra. All of the participating principals spoke of how they worked closely with the school leaders (specifically counselors and the math resource teachers) to ensure that processes were being implemented to support minority students being enrolled into rigorous math classes. Additionally, the principals collaborated with the school leaders to establish and monitor systems to support students to increase their chances of receiving a C or better in the class. Two of the three principals said that they discuss course articulation expectations with the feeder elementary schools so that the math course recommendations were aligned with having high expectations of students, particularly minority students having access to rigorous coursework. All three principals shared their practice and commitment of engaging parents of minority students in conversations to encourage them to support their child's enrollment in challenging course options as well as develop their understanding around the effects of tracking on the student's academic future.

One of the most important functions of a principal is the supervision and leadership of the teaching staff (Glickman, 2002). In that role, principals are tasked with helping teachers and teacher leaders develop their skills so that they can better facilitate student learning. Patterns of tracking are in part a function of prior placements of students in tracked courses in earlier grades, sometimes due to counselors' views that they should advise students in ways that are "realistic" about their futures, and in part due to the greater effectiveness of parent interventions in tracking decisions for higher socioeconomic status students (Kelly, 2009). Because tracking becomes highly formalized by junior high school (Darling-Hammond, 2007) principals must create structures in schools exhibiting high expectations of student performance. In order for students to succeed in mathematics, particularly higher level mathematics courses like Algebra II and Pre -Calculus, they must have access to gateway courses such as Algebra I (Moses & Cobb, 2001). Principals in this study showed commitment to collaborating with others to create opportunities for minority students to access and successfully complete Algebra I in middle school. Bandura's theory shares that persons with a high sense of self-efficacy are more willing to attempt challenging tasks, particularly when faced with difficulty, and they demonstrate higher levels of performance (Bandura, 1993). Each principal in this study reflected a strong sense of efficacy regarding their impact on behaviors supporting the academic achievement of minority students in Algebra I in middle school. All three participants felt that it was a priority for them to lead the charge of working with others to create pathways for minority students to be able to enroll in Algebra I and pass it by the end of eighth grade. As such, participants created

opportunities to collaborate with their school leaders, elementary schools, and parents to support their vision of minority student's accessing rigorous courses like Algebra.

Emotional arousal usually has a negative effect on a person's self-efficacy, yet high achievers view arousal as an energizing facilitator (Bandura, 1997). As the principal's discussed their frustrations of visiting higher level classes such as Algebra and seeing minimal minority students, it was apparent that their emotional state connected to their experiences-affective state experiences. Their positive enthusiasm to reverse a negative situation/observance impacted these principal's self-efficacy to embrace a challenge (Hoy & Miskel, 2001). Each principal felt a strong responsibility to address this issue and not ignore it. Their comments mirrored a strong belief that it was their responsibility to lead others to see the importance of creating this opportunity for minority students to take Algebra I and pass it in middle school to prevent tracking. The participants stressed their belief that minority students need advocates (school leaders) who would look for inequities and address them to create a more level playing field for African American and Latino students in education.

Finding #2: Teacher Selection

The principals' perceptions of their beliefs about their role in hiring teachers with high expectations for students as well as skilled teachers in teaching their content, increased the success rate of minority students who were in their Algebra classes. Throughout the principal interviews, the value of the teacher rapport with students, combined with their content knowledge and skilled practices, was noted as a large influence factoring into the success rates of minority students in Algebra I.

Each participant mentioned the importance of minority student's having teachers who are encouraging, show belief in their abilities to achieve, and commit to designing their instruction to meet the student needs.

Teachers are a vital part of student success. Their attitudes and comfort level in the content they teach is significant. Principals in this study emphasized the positive effects of hiring teachers who have beliefs embedded in having high expectations of all students and who have a strong knowledge of math content combined with implementing good instructional practices in the classroom. Research literature over the last quarter century has consistently supported the notion that teachers having high expectations for all is one key to closing the achievement gap between advantaged and less advantaged students and for raising the overall achievement of all students. An effective principal makes sure that notion of academic success for all gets picked up by the faculty.

The principals in this study were able to observe the successes of teachers with great relationships and who model good instructional planning and practices to support the success of minority students. According to Dillard (2013) vicarious experiences impact efficacy beliefs through observing others who have success or fail at specific tasks. Bandura (1997) suggested that the more skilled the model, the greater is its impact on individual self-efficacy. These vicarious experiences of observing successful teachers with high expectations and strong instructional skill sets impacted each leader to support the necessity to have these teacher qualities present for minority students who are enrolled in Algebra I. The principals each

stressed the importance of teachers having this commitment to students and as principals, they shared this expectation with staff consistently.

Finding #3: Student Support

It was consistent that all three principal's in this study felt that it was a priority for students to receive instruction in Algebra that would support their differentiated needs. It was noted in the interviews that this practice is particularly important when working to build the confidence of minority students in rigorous course work. Each of the schools had different ways of supporting students who were in Algebra to ensure their success; some provided additional programs outside of the structured school day. In spite of these differences, each principal specifically spoke about teachers being creative and planning their daily classroom instruction to address student academic needs. All principals shared that the student-teacher relationship was as important as the teacher's practice of teaching.

Research has shown that minority students face many academic barriers to achievement, both inside and outside of the classroom (Barton, 2003). One factor is that minority students are often exposed to less rigorous curriculum. Due to this unfortunate occurrence for minority students, there must be structures in place to support them when they are placed in more rigorous courses to provide encouragement and provide support to ensure their success. A challenge that teachers reported about their ability is that they feel unqualified to work effectively with minority students in class due to the fear of not being able to motivate and reach them in class (A. Johnson, 2010). This research further explains the importance of teachers

developing positive relationships with students that can contribute to establishing a high functioning classroom environment for the students and the teacher.

Bandura's theory of triadic causation shares that human agency occurs within a dynamic interplay among three components: behavior, internal personal factors, and external environment (Bandura, 1977). Two of the principal's spoke about how the students love the feedback and support from the teachers who provide this support to them in the Algebra classes, particularly if they find it challenging. Social persuasion relates to reinforcing the idea that one is capable of completing a task (Bandura, 1977). The principal's comments were reflective of their self-efficacy being impacted as they observed positive social interactions between teachers and students, particularly when the student supports were in place for students to receive feedback about their progress in Algebra.

Finding #4 Instructional Leadership

Participants revealed that establishing effective PLC's and monitoring student data were essential components of the instructional leadership that led to high levels of minority student achievement in Algebra 1 courses. As the leader of the school, the principals offered their teachers math specific professional development, encouraged PLCs by allotting time for departmental collaboration, and used formative and summative assessments to gauge student learning. Math specific professional development and the use of PLCs help to create a mathematics community within the school thereby increasing teachers' comfort level in mathematics and better preparing educators to work with diverse student groups (A. Johnson, 2010). Likewise, the use of student data allows principals and teachers to

assess what the strengths and weakness of the students individually and the department as a whole.

Educational researchers have noted that highly successful schools have strong leaders (Jackson & Davis, 2000). An essential component in principals' leadership ability is their sense of self-efficacy. The principals who participated in this study reflected a strong sense of efficacy with regard to their own personal factors and the impact of their behavior. They commented about their knowledge and experience planning good instruction (persona factor) and their ability to provide teachers with meaningful feedback about instruction as well as engage them in conversations about their student performance data. This supports Bandura's theory of triadic causation focusing on behavior, internal personal factors, and the external environment (Bandura, 1997). Due to each of the principal's previous experiences (prior to becoming a school administrator), they each had mastery experiences as leaders responsible for supporting the instructional growth of staff. These experiences have shown a direct correlation to their beliefs and actions as principals. Their mastery experiences of instructional leadership supports their actions of communicating their instructional priorities in the school improvement goals as well as expectations outlined for work completed in math department teacher professional learning communities within their schools.

Research consistently shows that highly successful schools have strong, competent leaders (Jackson & Davis, 2000). In a comprehensive review of leadership research, Leithwood and Riehl (2003) found that school leadership had significant effects on student learning. The role of the principal is also one that is complex as

they are faced with the demands of creating and sustaining positive change in their schools. Bandura's social cognitive theory confirms that an individual's self-efficacy beliefs play a vital role in how the individual approaches tasks, challenges, and stressful situations (Bandura, 1977, 1997).

The insights gained from this study suggests that the three middle school principals who had high passing rates for students in Algebra I who participated in this study had a strong belief in their ability to impact change for students, understood the importance of providing minority students the ability to access rigorous courses, and they each implemented actions to exhibit their high expectations of minority student achievement. The principals each stressed the importance of creating opportunities to increase student access to rigorous courses, selecting teachers who exhibited a strong belief and commitment to student achievement, providing differentiated student support based on needs, and providing focused and supportive instructional leadership. Additional insights learned from this study indicates that the principal's perceptions of self-efficacy benefit from situations where mastery, vicarious, verbal, and effective states were gained and supported.

Implication for Practice

Recommendation #1: Districts should establish training programs where principals can go through a process to define their self-efficacy beliefs about race and equity as it relates to minority student achievement and instructional leadership to address their actual preparedness for the work as a school principal, particularly around closing the achievement gap.

Recommendation #2: Each principal in this study found it necessary to build capacity within their school leaders to establish access for minority students to succeed in rigorous math courses in middle school. Establishing a plan to collaborate with staff, feeder elementary schools, and parents to outline high expectations for student performance in rigorous math courses were essential practices that led to successes documented in this study. Middle school principals should build systems of collaboration with others (staff, school leaders, parents, feeder elementary school staff, etc) to support minority student success in middle school mathematics. Middle school students' access and success in Algebra opens up many opportunities for more challenging courses in high school, leading up to preparation for college. School systems should work with middle school principals to actualize programs that would prepare minority students who are tracked to take lower level math courses to enroll in and successfully pass Algebra by the end of eighth grade.

Recommendation #3: District's should closely monitor the successful schools, particularly those who are addressing the adaptive challenge of closing the achievement gap, and have those school leaders share best practices to support the learning of others.

Recommendations for Future Research

The insights from this study reveal the importance of principals benefiting from being involved in efficacy-informing situations that reflect mastery experiences, vicarious experiences, verbal experiences and experiences that produce affective states. Principal self-efficacy is an area that is still limited in research. For this study, the researcher examined the self-efficacy beliefs of a small sample of middle school

principals. This study was limited by the size of the sample and by samples being selected from a single district. There is also more research needed to explore what drives the beliefs and practices of successful middle school principals and the link to student achievement. To add to this field of study, suggestions for future research include:

Recommendation #1: Greater insights about principal self-efficacy could be gained by examining current school principal perceptions of their self-efficacy on a larger scale.

Recommendation #2: Examine the relationship between the principal's self-efficacy and the impact on their leading for equity. School leaders across the nation are engaging in conversations about the need to close the achievement gap in education and this research could add to that work.

Recommendation #3: Examine the self-efficacy beliefs of principals with high success rates of minority students in middle school, including a comparison of principals from several districts.

Conclusion

The findings that were presented in this study share the self-efficacy beliefs of three middle school principals who had high success rates of minority students in Algebra I. Research has indicated that school principals have significant influence on student learning (K Leithwood & Jantzi, 1997; Marzano et al., 2005). Principals tend to be more successful when they believe in their own capabilities and have a desire to impact change in schools. Bandura's social cognitive theory showed how individuals form their self-efficacy beliefs- through mastery experiences, vicarious experiences, social experiences, and affective states. This research provides the opportunity for

there to be more in depth future research to marriage the topic of self-efficacy to the work of race and equity of school principals. To further enhance the work of school leaders who exhibit high self-efficacy creates many windows of opportunities for all students to succeed to their highest potentials.

Appendix A: Letter of Introduction to Participants

Dear _____,

The purpose of this letter is to invite you to participate in a study that examines the self-efficacy of middle school principals in schools with high success rate of minority students in Algebra I. This research has been approved by (BCPS). I am seeking your assistance in collecting data to support this study.

Your school is one of three middle schools selected to participate in this study based on your trend data for two years reporting that African American and Latino students in your school are completing Algebra I successfully with a grade of C or better. I would like to invite you to participate in an interview with me at a time and location that works best for you. You will be asked to complete a preliminary form with background questions that covers demographic data. You will be asked to participate in a personal interview with me that will last approximately 1 hour. I will provide an explanation of the interview process prior to conducting a formal interview.

If you decide to participate in this study, I will send you a consent form that you may return to me in a self-addressed, stamped envelope that will be provided.

Thank you in advance for your participation and response. If you have any questions, please feel free to contact me via email at Monifa_B_McKnight@mcpsmd.org or by calling me at 301-xxx-xxxx.

Sincerely,

Monifa B. McKnight

University of Maryland Doctoral Student

Appendix B: Consent Form

Project Title	Examining the self-efficacy beliefs of middle school principals with high success rates of minority students in Algebra I
Purpose of the Study	<i>This research is being conducted by Monifa McKnight at the University of Maryland, College Park. I am inviting you to participate in this research project because you have been a principal at your school for a minimum of three years and you have a high success rate of minority students completing Algebra I successfully by the end of the eighth grade. The purpose of this research project is to identify leadership practices that may contribute to the success rates of minority middle school students in mathematics.</i>
Procedures	<i>The procedures involve interviewing middle school principals in Montgomery County Public Schools. You will be asked to volunteer to be interviewed for the study. If you agree to participate, I will send you a questionnaire to gain some background information about yourself and set up a time and a meeting place where you feel comfortable speaking. The interview will take place between January 2014 – February 2014. Participation consists of responding to interview questions, which will take approximately 60 minutes. Interview questions will focus on your beliefs and leadership practices as a middle school principal with high success rates for African American and Latino students in Algebra I. Examples of questions include: “What are your beliefs about your role as a principal as it relates to minority student achievement in mathematics?” and “What were some of your experiences as an educator and/or leader that impacted your thoughts about minority student achievement in mathematics?” and “What have you done as a leader to influence your student success rates?” You will be informed of the researchers wish to audiotape the interview for purposes of accuracy; however, you have the right to decline being audio recorded. Your participation will be voluntary, and you may withdraw from the study at any time. You will be asked to sign a consent form. You may be re-contacted if the researcher wants to get further clarification about any of your responses.</i>
Potential Risks and Discomforts	<i>Because individuals who participate in these interviews may be audio recorded, this project presents the potential risk of loss of confidentiality to participant. Therefore, this project presents some risk to you. The potential risks and benefits will be explained to you before your participation begins.</i>
Potential Benefits	<i>There are no direct benefits to you, but some possible benefits include a greater understanding of leadership practices, and the factors that play significant roles in student success. Outcomes of the project may include providing further data on leadership practices that support minority student achievement. In addition, it may inform principal preparation programs and support school improvement within school systems. . The potential risks and benefits will be explained to you before your participation in the study.</i>

<p>Confidentiality</p>	<p><i>In order to protect your privacy, your identity will remain confidential. The student investigator will assign a pseudonym to you. Your actual name will not appear on interview data. The key linking you to the pseudonym will be kept in a separate document on the student investigator's computer in a separate folder, away from the folder with the interview data. Information identifying you will be disclosed only if you give consent to provide such information. All electronic data will be securely stored in a password protected file on the principle investigator's password protected office computer. Hard copies of data will remain in the principle investigator's office in a locked file cabinet. All data will be destroyed (i.e., shredded or erased) when their use is no longer needed, but not before a minimum of ten years after data collection. The principal investigator will be the only person to have access to the data.</i></p> <p><i>If I write a report or article about this research project, your identity will be protected to the maximum extent possible. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law.</i></p> <p>___ I agree to be audio-taped. ___ I do not agree to be audio-typed.</p>
<p>Right to Withdraw and Questions</p>	<p><i>Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify. You will not be negatively or positively affected by your participation in the study.</i></p> <p><i>If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigator:</i></p> <p><i>Monifa B. McKnight 301-980-8536 Monifa_B_McKnight@mcpsmd.org</i></p>
<p>Participant Rights</p>	<p><i>If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:</i></p> <p style="text-align: center;">University of Maryland College Park Institutional Review Board Office</p>

	<p style="text-align: center;">1204 Marie Mount Hall College Park, Maryland, 20742 E-mail: irb@umd.edu Telephone: 301-405-0678</p> <p><i>This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.</i></p>	
Statement of Consent	<p><i>Your signature indicates that you are at least 18 years of age; you have read this consent form or have had it read to you; your questions have been answered to your satisfaction and you voluntarily agree to participate in this research study. You will receive a copy of this signed consent form.</i></p> <p><i>If you agree to participate, please sign your name below.</i></p>	
Signature and Date	NAME OF SUBJECT [Please Print]	
	SIGNATURE OF SUBJECT	
	DATE	

Appendix C: Background Information for Survey Participants

Interviewee Code: _____ Date _____

Directions: Please answer the following background questions and submit responses to [Monifa B. McKnight@mcpsmd.org](mailto:Monifa_B_McKnight@mcpsmd.org) in preparation for your interview.

1. Please indicate your gender:
 - a. Female
 - b. Male
2. Please indicate your ethnicity:
 - a. American Indian
 - b. African American
 - c. Asian-Pacific Islander
 - d. Caucasian
 - e. Hispanic-Latino
 - f. Multiracial
3. How many years have you been a principal?
 - a. 1-2 yrs
 - b. 3-5yrs
 - c. 5-9 yrs
 - d. 10-15 yrs
 - e. 15 or more
4. How many years have you been a principal in your current school?
 - a. 1-2 yrs
 - b. 3-5yrs
 - c. 5-9 yrs
 - d. 10-15 yrs
 - e. 15 or mo
5. What influenced you to want to become a middle school principal?

Appendix D: Leadership Practices Interview Protocol and Questions

Interview Protocol

Thank you very much for agreeing to participate in this study, which explores the factors that influence a principal's leadership practices. As I mentioned, this interview is part of my research study as a doctoral candidate at the University of Maryland. I am interested in examining the self-efficacy beliefs of middle school principals with high success rates of minority students in Algebra I. This research is conducted under the supervision of my advisor, Dr. Carol Parham.

The interview will last about 60 minutes and will focus on your leadership practices as a principal. For example, one question asks, "What are your beliefs about your role as a principal as it relates to minority student achievement in mathematics?" Another example of a question is, "What were some of your experiences as an educator and/or leader that impacted your thoughts about minority student achievement in mathematics?"

Any potential loss of confidentiality will be minimized by storing data in a secure location, i.e. investigators' computers. In addition, your name will not be identified or linked to the data at any time unless you give your express consent to reveal these identities. The data you provide through your responses will not be shared with others who supervise you. Only the principle investigator will have access to the participants' names. If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report any injury related to the research, please contact the principle investigator, Monifa McKnight by telephone (301-980-8536) or e-mail (monifa_b_mcknight@mcpsmd.org). If you have questions about your rights as a research participant or wish to report a research-related injury, please contact the Institutional Review Board Office at the University of Maryland, by e-mail (orb@umd.edu) or telephone (301-405-0678). This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.

Do you agree to participate? [If yes, continue. If no, stop]

The interview will last about 60minutes, and I would like to ask your permission to record this interview for accuracy. The recording will be available only to me, and your identity will be kept confidential. Your identity will not be revealed

in any report. If your words are included in the results, any identifying information will be removed.

Do you agree for me to record this interview? [If yes, turn on the recorder.]

_____ **I do agree** _____ **I do not agree**

Let us start with the questions.

1. What are your beliefs about your role as a principal as it relates to minority student achievement in mathematics?

2. What were some of your experiences as an educator and/or leader that impacted your thoughts about minority student achievement in mathematics?

3. African American and Latino students are sometimes tracked to take lower level mathematics rather than Algebra in middle school.
 - a. Why do you think this occurs in middle schools?

 - b. What have you done as a principal to influence minority student course selection in mathematics in your school?

4. What are your beliefs about your leadership ability and the impact of your practices on the enrollment and success rate of African American and Latino students in Algebra I?

5. Your school has a high successful completion rate of African American and Latino students in Algebra in the district.
 - a. What have you done as a leader to influence this student success rate?

Conclusion

- 1) These are all of my questions. Is there anything else you would like to add about your leadership practices?
- 2) Last, if I have questions regarding your answers, could I contact you in the future?

Thank you very much for your time and sharing your experiences, I very much appreciate it.

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