Highly Successful Outcomes: How Teachers at an African-Centered Independent School Structure Mathematics Curriculum and Instruction

Dissertation
Submitted in Partial Fulfillment
of the Requirements for the

Degree of
Doctor of Education

Mills College
Fall 2014

By

Janice Lord-Walker

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

Highly Successful Outcomes: How Teachers at an African-Centered Independent School Structure Mathematics Curriculum and Instruction

By

Janice Lord-Walker

Committee Chair:

_____	_____
Sabrina Zirkel, Ph.D.	Date

Committee Members:

_____	_____
Jamal Cooks, Ph.D.	Date
_____	_____
Nikole Richardson, Ph.D.	Date
_____	_____
David Donahue, Ph.D.	Date

Approved By:

_____	_____
[Name]	Date

ABSTRACT

Africans and people of African descent have always desired the best for their children and education has been seen as the key to success (Madhubuti & Madhubuti, 1994, p. 4). When conscious African American teachers respect for students' cultural heritage and families are demonstrated in the classroom, and seen as an asset then students' ability to develop self-esteem and self-pride needed to support self in the world that we live in improves (Alim, 2014 & Gay, 2010).

This study focused on how teachers at an African-centered school in East Oakland, California structure curriculum and instruction for pre-school-8 in a way that leads to highly successful outcomes for students especially in mathematics. The following research questions guided this case study of an African-centered school. First, what are the elements of an African-centered education and culturally responsive pedagogy that ensures the academic achievement of African-American students? Second, what occurs in teachers' classrooms where students strive for academic excellence? Third, what are the school practices that contribute to the academic success of all students?

The findings are as follows in this research is that school climate and culture set the tone and expectation for all students. When students and staff are respected and valued each contribute to the success of the students and school programs with strong support inside the school (staff) and outside (family and community). Students need to be able to identify who they are and be empowered to develop agency for themselves.

The start of the school day needs to focus and center students (for example breathing exercise, pouring libation and school pledge). The placement of mathematics at

the beginning of the day is vital. The most challenging class is provided to students when most students have the most energy to focus, pay attention and stay on task. It is important for students to have extended time to think critically, to experience guided practice and independent practice.

In addition, teachers who check for understanding frequently throughout the lesson are better prepared to comprehend where students are in the learning cycle (engagement, explore, explanation, elaboration and evaluate). Cooperative learning is a communal process to learn and is beneficial to many students rather than working independently and/or competitively. Next, technology should be used in modern classes to prepare students for the real world. Finally, belonging is an essential part of this school. Students feel as if they are members of a team; the staff is the leader of the team and they ensure that all students feel connected to school through common routines and practices. There is success for all, students, staff, parents and community.

Key words: African-centered education; culturally responsive pedagogy, culturally sustaining pedagogy, mathematics acceleration program; African Americans; urban education, school practices, striving for excellence in education

DEDICATION

I dedicate this study to my mother the late Marie Clara Leacock (Lord) and all that she has instilled in me. I am part of the African Diaspora and I am proud of my African heritage. My mother advocated for me through my early education, in Montreal Quebec, Canada. Consequently, my mother has provided a model for me to advocate for my own children who were born and raised in Oakland, California. I have been an advocate for all students in the public education system in Oakland, California. Second, I dedicate this dissertation to the students in an East Oakland African-centered school and their teachers, parents, guardians, mentors, coaches and others who are involved in their education, personal and spiritual development. Third, I dedicate this dissertation to the students in public schools. Finally, I dedicated this to my forever supporters: my husband, Reginald Walker; my children, Jamaal Walker and Ahmad Walker; my sister, Allyson Lord-Charles; and my aunts, Gwendolyn Lord and late Rona (Haynes) Leacock.

EPIGRAPH

If there is no struggle, there is no progress.

Those who profess to favor freedom,

and yet deprecate agitation, are men who want crops plowing up the ground.

They want rain without thunder and lightning.

They want the ocean without the awful roar of its many waters.

This struggle may be a moral one;

or it may be physical one;

or it may be both moral and physical;

but it must be a struggle.

Power concedes nothing without a demand.

by

Frederick Douglas

TABLE OF CONTENTS

PREFACE

"I am From…"
Spoken Word Poem

I am from Mother Africa, Barbados, "Little Burgundy,"
fall and maple leaves.
Throughout my life my mother has advocated for me and empowered me
to succeed in this troubled world.
I am daughter, sister, wife, mother and loyal and trusted friend.
I am from dreams such as saving the children and making a way for them.
In my daily effort to stay on a positive track and away from things that will hinder my success I breathe.
I belong to many communities Montreal, Oakland and Mills College
through community service.
I am going towards the light of life and freedom from worries and towards
peace and tranquility.
I will surround myself with positive influences like my family who uplift me, friends who I care for and who care for me.
I am African, Caribbean, and Canadian. I am proud of my family heritage which gives me strength and courage that has brought me through higher education.
I am steering clear of toxic folks and naysayers because they have no vision or mission.
I have a bright future for myself because I am worthy. Above all else, I know that I am tall, beautiful, intelligent, strong women and by staying on my positive track anything is possible.

By: Janice Lord-Walker

ACKNOWLEDGEMENTS

I gratefully acknowledge the assistance of dissertation chairperson and advisor Sabrina Zirkel, Ph.D., for her care, support, her constructive comments and feedback on the draft of this dissertation. I would also like to thank my committee members Jamal Cooks, Ph.D., David Donahue, Ph.D., and Nikole Robinson, Ph.D., for their support throughout the completion of this dissertation.

I would like to thank the students, director and staff of Kujichagulia School (name changed to protect privacy of school and participants). I am truly grateful to Adrienne Oliver for her final format of this dissertation, Ruth Cossey, Ph.D., for her advisory role early in the journey and Tabora Johnson, Ed.D., for her insight into African-centered education. I would also like to thank the professors at Mills College for their knowledge regarding education of all students today and their support of my dissertation process.

My cohort members Mildred Lewis Ed. D., and Nolan Jones Ed.D., are invaluable to me for their unlimited support to the process of completing the dissertation program and the final product the dissertation.

I give gratitude daily for my friends Mama Okanona, Evelyn Smith, Imani Cooley, Shelia Quintana Ed. D., late Candice Minor-Mitchell and all my friends who kept my mind focus, my heart warm and my nerves still. They all played a role in supporting and encouraging me throughout this dissertation process. I appreciate the patience and support of my husband, Reginald Walker, and our sons, Jamaal Walker and Ahmad Walker. I would like to thank my late mother, Clara Lord, my late father, James Robert Lord, my sister, Allyson Lord-Charles (constant mentor and spiritual force), my aunt Gwendolyn Lord (mentor), aunt Ruth Frances Selwyn, late aunt Rona (Haynes)

Leacock, Lord family, Leacock family and Walker family for their constant encouragement and support.

CHAPTER I: INTRODUCTION

The first day I arrived at Kujichagulia School at 2:00 p.m. I opened the green gates, and walked into the yard. I observed that the playground had changed over the past 25 years since my son had attended the school in the early 1990s. The walls in the background of the yard had drawings that depicted Egyptians, other Africans working and performing other activities. Placed in the corner of the playground were a colorful metal playground swing set, slides, and bars for preschoolers to play on. The courtyard was empty at the time that I arrived. The school building and the preschool area were painted beige with many African and African American cultural drawings that surrounded the buildings. I heard children talking and engaged in lively discussions as I walked up to the first floor and entered the lobby of the school. I walked into the next room where I met with Mama Imani, the coordinator of the school, who showed me around the first floor. Then she brought me downstairs to the cafeteria/classroom/church area. At 2:10 p.m. Baba Ahmad A was teaching his science class. Mama Imani went up to him to let him know that I had arrived; then he gave her the sign that my arrival was welcomed and expected.

Background

Africans and people of African descent have always desired the best for their children and education has been seen as the key to success (Madhubuti & Madhubuti, 1994, p. 4). When African American males live in negative environments, there is a greater impact on African American males well into their adult life (Howard, 2013, p. 55). Black males constitute 4 million or 7% of the United States (U.S.) population. When African American males are studied, there are many references to their challenging

behavior. They are misunderstood in the environments where they live. Research investigates the reasons for underachievement of African Americans and interventions that can improve their academic achievement (Howard, 2013).

The research regarding African American students highlights the deficit model that uses terms such as “at risk,” “endangered,” “remedial,” “in crisis,” “uneducable,” “extinct” and “left behind.” This language suggests that African American students need to be fixed, not our educational system. We need research that assists educators with educational strategies that work best with African American students. Most strategies in educational institutions work at controlling African American students. It is important to understand that African Americans are not a monolithic group; they have multiple identities. The issues that promote the deficit model (racial prejudice, social economic status and gender) are out of the circle of control of African American students. Therefore it is crucial for African American students to write their own narratives so that educators can have a deeper understanding of what societal issues affect the learning ability of some African American students (Howard, 2013).

The current data regarding national, state and local African American students in relationship to mathematics is that only 11% of African Americans are proficient in mathematics according to the board that governs the National Assessment of Educational Progress (NAEP), which is administered by the U.S. Department of Education and generally known as the nation’s report card. The information is provided on student performance in both reading and mathematics, but the relative performance of U.S. students in mathematics is the main focus (Peterson, 2011). This information is obtained by comparing student performance on NAEP math and reading tests with the

performance of students from across the world on similar examinations. If the NAEP exams are the nation's report card, the world's report card is assembled by the Organization for Economic Co-operation and Development (OECD), which administers the Program for International Student Assessment (PISA) to representative samples of 15-year-old students in 68 of the world's school systems. The United States has a math proficiency rate of 32%. The U.S. rate of 32% proficiency compares to a 50% or better proficiency rate in Korea, Finland, Switzerland, Japan, Canada and Netherlands. In Shanghai the proficiency rate is no less than 75%. Many other nations also had math proficiency rates well above that of the United States, including Germany (45%), Australia (44%), and France (39%)(Peterson, 2011).

The percentage of students who score proficient on mathematics assessments in the United States varies considerably across students from different racial and ethnic backgrounds. Although 42% of White students were identified as proficient in math, only 11% of African American students, 15% of Hispanic students, and 16% of Native American students were so identified. Fifty percent of students with an ethnic background from Asia and the Pacific Islands, however, were proficient in math, placing them at a level comparable to students in Belgium, Canada, and Japan, if lower than that of students in Korea and Taiwan (Peterson, 2011). According to the 2012 Academic Performance Index (API) scores, the California Department of Education indicated that only 59% of elementary schools, 49% of middle schools, and 30% of high schools scored at or above target of 800 API scores in California. In the Oakland Unified School District (OUSD), students' scored 35.7% proficient in mathematics (Analysis, Measurement and

Accountability Reporting Division District, School, and Innovation support Branch, 2012).

However, Oakland has attempted to change the paradigm of African American male students' academic failure. Over four years ago, OUSD hired Christopher Chatmon, Executive Officer of African American males in Oakland, to put systems in place to ensure the academic success of African American males and to interrupt the present trend of Oakland public school students' low proficiency in mathematics. In summary, Christopher Chatmon's mission is: to increase the academic success of African American males; to reduce the suspension and expulsion of African American males; to develop routines, rituals, methodology and pedagogy that motivates and provides academic opportunities for African American males (Grady, 2012). When these changes are instituted, Christopher Chatmon endeavors to increase attendance rates that could increase the proficiency rate of Oakland Public school students. Consequently, on October 12, 2012, 34 Oakland students were awarded for perfect California standardized test scores 100%correct on the mathematics or science portion of the California Standardized or STAR test (Grady, 2012). Chatmon stated, "Tonight we celebrate the beauty and the brilliance of our children." Reporter Barbara Grady stated, "This is one of the few school districts in the nation that created a place and a space for African American boys to [be encouraged to] achieve."

Significance of the Study

Algebra is used by professionals ranging from electricians to architects to computer scientists. Basic Algebra is the first in a series of high mathematics classes that is why it is considered a gatekeeping subject (Greater school staff, 2010). In addition,

critical thinking is thinking that analyzes thought, that assesses thought, and that transforms thought for the better (Paul, 2007). The workforce of today requires workers that have the ability to think critically; students should be able to access the mathematical knowledge and think critically in order to obtain access to higher education. African American science, technology, engineering and mathematics (STEM) workers stand at the forefront of innovation in the U.S. economy. In 2011, over 620,000 African Americans were employed in STEM occupations. From 2003 to 2011, the number of African Americans employed in professional and related occupation in the U.S. grew by nearly 11%. Meanwhile African Americans total employment in STEM sectors has varied. From 2003-2011 the employment in architecture and engineering increased 21%; employment in physical and social sciences increased by 10%; employment in computer and mathematics decrease 1.5%; and employment among accountants and auditors decreased 11% (Doming, 2013). Higher mathematics skills are required to become proficient as a mathematician, accountant or auditor.

Assumptions

This study rested on the assumption that when students are knowledgeable of their cultural heritage, cultural identity, academic identity and expected success, then they learned mathematics and other subjects that lead to academic success (Murrell, 2002). In addition, African American students learn advanced mathematics when provided with the following opportunities: to experience a culturally responsive pedagogy in an African-centered school; to benefit from instructional strategies and methodology that promote learning; and to learn advanced mathematics. In essence, African American students are

as capable as any student of learning higher mathematics–but the instruction they are receiving in mathematics is not serving them well.

My aim in this work is to explore how teachers with high expectations for their students engage and motivate them to learn academic content, particularly mathematics. How do teachers do this? What does an African-centered education and culturally responsive instruction look like, and how might this apply to the diverse group of students in a typical mathematics classroom? What are the instructional strategies of each teacher in Pre-K through 8th grade that ensures the academic success of each student? I explored the school to discover what we might learn about the practices that enable African American students to succeed at such high levels. Through this case study, I hope to highlight areas we might draw from in order to better serve African American students in all schools.

Finally, my research emerges from a tradition of research on improving mathematics instruction and achievement for African Americans, with particular emphasis on African American boys (Howard, 2013; Nasir, 2008; Muhammad, 2003; Sampson, 2002; Moses, 1994). This focus on mathematics is important because mathematics is often the gatekeeper that prevents African American children from progressing to and succeeding in college. In this research, learning – even in mathematics – is tied to a social and cultural contexts; learning is not just a cognitive process, but also a social and cultural process. In addition, this work places identity as a central aspect of social and cultural practices. Individuals act with agency to define themselves, and they are positioned in the group as a member, nonmember or certain kind of member. Members understand what is required of them to achieve the task, learning target or goal

and they succeed; while nonmembers or certain kind of members are not sure how they will accomplish the task, learning target or goal (Nasir & Cooks, 2009).

Research Goal

My goal in this study is to explore how African-centered education, culturally responsive pedagogy, and an emphasis on higher-level mathematics combine in one small independent school to facilitate the academic and personal success of African American students in Oakland, California. In this study, I undertake a case study of Kujichagulia School, a small, independent African-centered preschool-8 school in East Oakland in order to demonstrate how a committed staff to the academic achievement of all students in an inner city can interrupt the failure of African American students in challenging academic courses such as mathematics. In addition, how they prepare students for rigorous course content especially in mathematics which is a subject area that prevents many African American students from reaching their full potential in high school and beyond through college.

Research Questions

The following research questions will guide this case study of an African-centered school. First, what are the elements of an African-centered education and culturally responsive pedagogy that ensures the academic achievement of African-American students in academic content areas with an emphasis on mathematics? Second, what occurs in teachers' classrooms where students strive for academic excellence? Third, what are the school practices that contribute to the academic success of all students?

Teacher Education and Background

Five staff members were born and raised in Oakland and five other staff members were born and raised outside of Oakland. Some teachers had wonderful experiences in their educational background that they wanted to replicate for other African American students today, while other teachers had terrible experiences that were all too common in a place like Oakland public schools. Teachers wanted to be a part of a school that created a difference for African American students. The combination of educational experiences provided the students with a rich educationally diverse staff environment that provided the students with content that was rigorous and relevant to them. The Director of the school, Baba Ahmad was born and raised in Oakland. In describing his educational experience, and how it informed his desire to start a school:

I had a teacher Ms. L who noticed that I had a reading problem, and I was placed in a reading group (to improve my reading skills) after that I tested high (in reading). This is a statement to my elementary teacher; I developed a love for reading. No one said that I was a poor reader (there was no mention of disadvantaged, remedial, at risk or other disparaging terms) the teacher talked to my mother (about providing me age appropriate books, comic books and Scholastic books) and set me up (for academic success). In the sixth grade Ms. L. took me to the Raiders training camp in Santa Rosa and that was the only reason why we went. She was not doing something else; at that time it was the greatest thing in my life; I met all my idols. I made modifications and I used many of the activities that I learned at Oakland Elementary School with my students (at Kujichagulia School).

It is crucial that teachers use positive language and positive images to remediate any deficiencies in students' learning early in their educational experience. Baba Ahmad benefitted when the teacher provided him with books to read that would improve his reading comprehension, also supported by his parents. If he had not had his reading comprehension remediated that would not have provided him with the reading comprehension skills needed to succeed academically in school. All students require strong reading comprehension skills to access the curriculum content and concepts in all course work areas. This is what Baba Ahmad reported:

At that time Oakland [Elementary] School set me up right. I was placed in ninth grade Algebra [in Junior High School] and at that time that was a big deal. I had high test scores [in mathematics] that set me up for [academic] success. Ms. L brought great programs to the school that inspired me to learn, programs about animals and summer school programs [that] were fun. I attended Pine High School and [I] was the classic 'Scholar Jock' guy.

Another teacher, Baba Boipelo, who had an educational experience in Oakland that did not promote academic excellence, is one of the elder teachers in the school. He had this story to tell about his education in Oakland:

I attended Bryant Park Elementary School in East Oakland K-6th grade. I was raised by my grandmother; she never pushed me to become an 'E' or 'A' student but I knew that I had to pass. I graduated as an average 'C' student. I had the pursuit [understanding] that I had to pass, without being pushed. I still did not have a desire to be an 'A' student or a 'D' student. Now, I know if students do not get that push, they may not reach their full potential.

Another teacher, Mama Aaliyah, was also raised and educated in Oakland. She described her experience of not being challenged in school and highlighted that, reflecting on this later, she wondered about the role that race had played in that process. Mama Aaliyah had the most devastating educational experience, because she demonstrated excellence in mathematics but was encouraged by neither her counselor nor parents to strive for excellence. Mama Aaliyah was not encouraged to challenge herself and advance in mathematics. Despite this, she demonstrated that she had the academic mathematical skills to do more advanced math. At Kujichagulia School, teachers assume each student is capable of rigorous curriculum and motivated to achieve academic excellence in all subject matters. This provides students the opportunity to reach their full potential in all subject areas. I noted what Mama Aaliyah stated in my observation notes:

I grew up in Oakland. At Clara Middle School, Mr. Sadiq was the first Indian teacher that I had. He taught mathematics, I liked math. At Rockridge High School, I took Geometry. I earned a 100% on several quizzes (tests). I went as far as I was comfortable. My sister took Trigonometry, and she said it was hard. Then I decided it was not for me. It may have been for me. I went to Clerical Tech; I took business math. I learn how to make change, used time clock and I learned office skills; 99% of the students were Black.

Math teacher, Mama Abbey, who was raised in Oakland and attended Kujichagulia School, had a wonderful experience in her early education. She was taught by teachers who expected her success and knew her potential because of their knowledge of African and African American history of intelligence and brilliance. I noted in my

observation notes that Mama Abbey stated, “I went to African-centered schools up through third grade. Then I went to Oakland public schools, and I was a student at Rockridge High School Health Academy and the College Prep program (English/Social Science college preparation program).”

I chose to discuss these four teachers after interviewing them because they had notably different experiences in their early education. Baba Ahmad and Baba Boipelo understood the importance of pushing and accelerating children to maximize their academic abilities and to provide them academic support to guarantee their academic success. Mama Aaliyah had a similar experience to Baba Boipelo of not being inspired to reach her full potential; she was not stimulated to excel in mathematics, even though she had demonstrated the mathematics skills to achieve. Not only was she not encouraged she was placed (positioned) in a business mathematics class rather than a Trigonometry class that would have offered her the opportunity to position herself to excel in mathematics. On the other hand, Mama Abbey was placed in strong academic programs from Kujichagulia School (elementary school) through Rockridge High School where she was enrolled in Health Academy and College Prep program (college preparation class). They all brought their educational experiences to Kujichagulia School, and teachers who had an non challenging K-12 experience had an opportunity to rectify some omissions in their own educational backgrounds to inspire, to motivate and to engage African American students academically.

CHAPTER II: LITERATURE REVIEW

Much of the research and theorizing of African Americans for most of American history has been based on assumptions that blame African American families, homes and communities for lack of achievement of African American children. This model promoted the ideas that African American students are culturally and financially deprived, deficient, and deviant in some way (Ladson-Billings, 1994). In 1980s there was some change in thinking regarding the preparation of teachers for successful work with African American learners in urban schools. The 1990s ushered in a perspective the ecological model, rooted in work of Urbie Bronfenbrenner and the work of James Comer (Murrell, 2002). The approach emphasized the importance of systemic account of social context and the interaction of the human, cultural and political systems involved in teaching and learning. The role of ethnic and racial identity development is important in the school experience, development of knowledge and the preparation of teachers (Murrell, 2002).

For now, I considered what is important for education of African American students generally and African American male students specifically. I focused on three core ideas: (a) African-centered schools, (b) culturally responsive pedagogy, and (c) academic achievement for African American students, especially in mathematics (striving for excellence and school practices). This literature review focused on what we already know about the impact of these concepts on the education of African American youth and explored what, if anything, we know about how these relate to mathematics education. To provide the reader with knowledge of African-centered Education, Ma'at (ancient Kemetic concept) and the Nguzo Saba (seven principles) that provided teachers, students,

administrators, parents and community members with principles that guided African-centered schools (Karenga, 2008). In addition, culturally responsive pedagogy (Ladson-Billings, 1994) was investigated to determine what is effective to instruct a diverse group of students. Gay (2010) argued that the academic achievement of African American students increased if teachers reflect and draw on the cultural backgrounds of students. This informative, engaging and incisive method of presenting standards based curriculum and teaching increased academic success for all students (Gay, 2010; Martin, 2009 and Moses, 1994). The next generation of standards Common Core State Standards in Mathematics (Coleman, 2010) and previous mathematics supplemental curriculum are reviewed to assess their impact on the success of African American students and especially boys (National Governors Association Center for Best Practices Council of Chief State School Officers, 2010; Khan, 2012 and Project Seed 2012). Furthermore, the literature explored instructional and curricular practices that promoted the academic success of African American males in mathematics (Muhammad, 2003; Sampson, 2002).

African-Centered Education

The use of African-centered principles for the education of children of African descent has a rich history (Asante, 2003; Asante, 1998; Murrell, 2002; Karenga, 2008; Ajirotutu &, Pollard 2000; Cleveland & Shockley, 2011; Kunjufu, 1986). According to the African-Centered Task force of Kansas City, Missouri (2013), African-centeredness is the placement of African American people at the center of human process. This is based on the belief that all humans have their physical, social and intellectual origins in Africa. Lee stated, “An African-centered pedagogy is needed to support a line of resistance to the imposition of Eurocentric biases. It is needed to produce an education

that contributes to achieving pride, equity, power, wealth, and cultural continuity for Africans in America and elsewhere" (Lee, 1994). Within these culturally customized educational outcomes, African-centered pedagogy has clear connections to culturally-responsive pedagogy (Gay, 2010; Moses, 1994; Ladson-Billings, 2009). Culturally-responsive pedagogy emphasizes the importance of creating curriculum that connects with and is relevant to students' lives. When teachers demonstrate respect for students' cultural heritage, then student are able to develop the self-esteem and self-pride needed to support self in the world (Gay, 2010). When teachers are poorly prepared to engage with and confront racial and cultural diversity in their classrooms, then they are not competent enough to effectively teach minority students (Gay, 2010).

African-centered education places the African American student at the center of the education experience as a subject rather than an object. This placement of the student at the center allows for an inclusionary process whereby one group is neither above nor below any other group. With African-centered education, the African American child is culturally placed at the center of the learning process, whereas with Euro-centric Education, African American students are culturally outside of the educational experience. African-centered education acknowledges the scientific fact that humanity began in Africa (Karenga, 2008).

In addition, Ma'at is an ancient Kemetic concept. As used by Ancient Africans, Ma'at is a concept that stands for "universal order" and Ma'at represents reality in all its manifestations both spiritual and material. It is the divine force that encompasses everything that exists. As an ethical system, Ma'at is often discussed as seven cardinal virtues: truth, justice, righteousness, harmony, balance, reciprocity, and order. "Karenga

includes the following propositions: 1. the divine image of humans; 2. the perfectibility of humans; 3. the teachability of humans; 4. the free will of humans; and 5. the essentiality of moral social practice in human development. Karenga also underscores the importance of an African conceptual foundation to overcome the cultural crisis in the African community (Lee, 1994)."

The Nguzo Saba is a term popularized by Dr. Maulana Karenga. According to Lee (1994), Karenga proposes the following in his view of African-centeredness:

- The divine image of humans
- The perfectibility of humans
- The teachability of humans
- The free will of humans
- The essentiality of moral social practice in human development

As part of Karenga's Kawaida philosophy, the Nguzo Saba are seven principles: Umoja, which means Unity; Kujichagulia, which means Self-determination; Ujima, which means Cooperative Work and Responsibility; Ujamaa, which means Collective Economics; Nia, which means Purpose; Kuumba, which means Creativity; and Imani, which means Faith. The Nguzo Saba is most widely recognized in relation to the seven days of Kwanzaa (Karenga, 2008).

…blackness itself is a trope of ethics. Thus, to be Black is to be against all forms of oppression, racism, classism, homophobia, patriarchy, child abuse, pedophilia and White racial domination (Asante, 2003, p.2).

The Afrocentric approach in education involves working with Black students to master the academic disciplines from a perspective that grounds them in an African

reality. That means children are taught about events, places, people and things, with crucial reference to and in the crucial context of the historical trajectory of people of African descent (Shockley, 2011, p. 55).

It is important for African American students to develop an African identity because the characteristics of an African identity benefits students and promotes pride in African and African American culture. African-centered education is holistic, meaning that the students are involved in cross-discipline learning, meeting state core curriculum goals and guidelines, critical and creative thinking, self-concept development, character development and moral education. African American students are exposed to a worldview experience that relates to all people, cultures, and traditions from the context of their reality which enhances their own self-esteem, positive self-imaging and higher standard of educational excellence (Noble, 1996). Therefore, African-centered education is an approach which celebrates the culture, heritage, contributions and tradition of all humans (Karenga, 2008).

The characteristics of African-centered education that furthers the understanding in mathematics and science are that African American students have self-confidence; they feel empowered and motivated to learn the lesson. Teachers have high expectations for all their students. African-centered principles, such as collectivity, engagement, sharing, and respect is encouraged and fostered (Sampson & Garrison-Wade, 2011). Students work together as a team along with the teacher to learn the lesson. Academic achievement and motivation improves significantly when protocols and procedures of teaching are synchronized with the cognitive abilities, physical and verbal style, ethnic frames of reference, and African-centered principles of African American children (Gay,

2010). This pedagogical process, coupled with the basic premise that African American students are valued, intelligent, and can and must succeed, has a significant impact on African American achievement. In order for African American students to reach their full potential, they must be: valued in the educational process; celebrated in culturally relevant experiences; connected to their cultural self; and motivated to improve academic success. Following this protocol will increase in their engagement and academic performance in subjects like mathematics and science (Covington & Clarkson, 2005; Johnstone & Clarkson, 2011).

Black students need to know that they are part of the African Diaspora; they come from a powerful, creative, intelligent and compassionate group of people. In addition, Black students need to know that they can master any content that they are taught; and that they can develop the attitudes and skills that will uplift themselves and their race. Additionally, the community should have safe places such as churches, schools and businesses that they control. The community should utilize these places to provide opportunities to interrupt the failure of Black boys. Students need to be educated not trained; it is vital that educators develop critical thinking and promote agency for Black students (Shockley & Cleveland, 2011, p. 58).

Lee (1994) argues there are seven core components of an effective African-centered pedagogy: It (a) legitimizes African stores of knowledge; (b) scaffolds productive community and cultural practices; (c) builds upon the indigenous language; (d) reinforces community ties and idealizes service to one's family, community, nation, race, and world; (e) promotes positive social relationships; (f) imparts a world view that idealizes a positive, self-sufficient future for one's people without denying the self-worth

and right to self-determination of others; and (g) supports cultural continuity while promoting critical consciousness (p. 297).

Culturally-Responsive Pedagogy

Culturally relevant pedagogy is part of culturally responsive pedagogy. Culturally relevant pedagogy is used when there is one predominate ethnic group in the classroom. If a classroom is largely African American, then life experiences and examples that connect to the curriculum should be used to explain the content of the curriculum (Ladson-Billings, 2009).

At the center of the culturally-relevant pedagogy is culture; Nasir (2008) agrees with Gay (culturally-responsive teaching) and Ladson-Billings (culturally-relevant teaching) (Ladson-Billings, 1994) about the importance of cultural connections in curriculum that is responsive to students. Nasir defines culture as the thoughts, values, beliefs, rituals and practices of a people. Culture must be honored and respected for students to develop the self-esteem and self-pride needed to support self in the world. All knowledge is connected to cultural experiences in the social and cultural world (Nasir, 2008). hooks (1994) articulates the nature and depth of the challenge so well:

As I worked to create teaching strategies that would make a space for multicultural learning, I found it necessary to recognize…cultural codes. To teach effectively a diverse student body, I have to learn these codes. And so do students. This act alone transforms the classroom. The sharing of ideas and information does not always progress as quickly as it may in more homogeneous settings. Often professors and students have to learn to accept different ways of knowing, new epistemologies, in the multicultural setting (p. 41).

Culturally responsive teaching is grounded in the idea that by taking advantage of students' cultural knowledge and incorporating cultural elements and images into their classroom experiences more students succeed (Gay, 2010). When this is done, students are more likely to consider these activities and their schoolwork as relevant to their lives.

Studies have shown that teachers who engaged in culturally responsive pedagogy can be very effective in assisting African American students to negotiate the classroom and curricular practices they encounter (Gay, 2010; Ladson-Billings, 2009). However, the weight given by these researchers to pedagogical and curricular change alone as remedies for African American students' underperformance is problematic because many African American students achieve at high levels even in schools and classrooms where these positive practices are not found.

Gay (2010) argues that the academic achievement of students of color will increase if teachers: reflect and draw on the cultural backgrounds of students; design lesson plans that engage students; and implement incisive method of presenting standards based curriculum and instruction. Then academic success will prevail for all students. At the center of my conceptual framework is culture (Ladson Billings, 1994 &1992). African-centric education is the employment of Afrocentric ideology and the use of "culturally responsive pedagogy" in order to effectively teach and reach Black children. Gloria Ladson-Billings (1994) proposes effective and culturally relevant pedagogy as education that (1) looks beyond explanations of cultural deficit, (2) seeks to improve student achievement while maintaining identity, and (3) challenges inequitable school and societal structures (p.18).

Culturally responsive education is a system of curriculum development and practice that builds cultural knowledge and cultural competence for the teacher generally, his or her students and his or her practice. Teachers develop cultural knowledge specific to their students in the classroom to maximize student learning opportunities. Culturally responsive education provides teachers with an opportunity to understand themselves and their practice. It assists teachers in identifying race and how it is manifested in the urban context. Milner (2011) stated that cultural competence is the conceptualization of culturally responsive education in an attempt to build on and from it to effectively teach students. Teachers should be mindful of whom they are teaching and the range of needs that students will bring into the classroom.

The social context that shapes students' experiences should be integral in the decisions of how to teach students. Teachers who practice culturally responsive education do so because it is consistent with what they believe and who they are. Teacher's conceptions guide their practices based on contextual realities in their work. Ladson-Billings (1992) stated that culturally-responsive education is an approach that serves to empower students to critically examine educational content. It challenges students to process content by questioning its role in creating a truly democratic and multicultural society. Furthermore, culturally-responsive pedagogy uses the students' culture to help them create meaning and understand the world. Therefore, teachers create learning environments where students develop voice and perspective and are allowed to participate in the multiple discourses available in a learning context. More specifically, students participate in learning by not only consuming information but also by helping to deconstruct and construct knowledge (Freire, 1998; 2006).

Ladson-Billings (1994) further argues that culturally relevant education uses student culture in order to maintain it and to transcend the negative effects of the dominant culture. "The negative effects are brought about, for example, by not seeing one's history, culture, or background represented in the textbook or curriculum…" p. 19. Culturally responsive teaching is a pedagogy that empowers students intellectually, socially, emotionally, and politically by using cultural referents to impart knowledge, skills and attitudes. Educators who create culturally relevant learning contexts are those who see student's culture as an asset, not a detriment to their success. Teachers actually use students to develop the skills to question how power structures are created and maintained in American society. Students are expected and empowered to develop intellectually and socially. In addition, culturally responsive education can be a pedagogical approach that assists students with witnessing the contradictions and inequities that exist inside and outside of the classroom.

Through culturally responsive teaching, teachers prepare students with skills to question inequity and to fight against the many "isms" and phobias that they encounter while allowing students to build knowledge and to transfer what they have learned through classroom instructional learning opportunities to other experiences. There are three components to culturally responsive education. First, culturally-responsive education empowers students to examine educational content and processes. This examination helps students to create, construct and deconstruct meaning. This process helps students to succeed academically and socially by allowing them to see contradictions and inequities in local and larger communities. The second component of culturally-responsive education is incorporation of student culture in curriculum and

teaching. This practice helps students transcend the negative effects of dominant culture. Lastly, the third component of culturally-relevant education is innovation, which creates classroom contexts that are challenging and focused on student learning. Through innovation, teachers can build cultural competence and link curriculum and instruction to sociopolitical realities.

The literature about culturally-sustaining pedagogy (CSP) transports culturally responsive pedagogy to the present. It demonstrates how sustaining one's culture through language and routines is vital to the future success of present-day students Paris & Alim (2014) asked , "What if…the goal of teaching and learning with youth of color was not ultimately to see how closely students could perform White middle-class norms but to explore, honor, extend, and, at times problematize their heritage and community practices?" For too long scholarship has been viewed as how to get working class students of color to speak and write like middle class white students. In this scenario the value of students' language and culture is not valued. Alim (2014) stated the following:

…as a result of continuing demographic change toward a majority multilingual society of color, fostering linguistic and cultural flexibility has an instrumental purpose for both students of color and White students: multilingualism and multiculturalism are increasingly linked to access and power in U.S. and global contexts (p. 87).

There is a movement to remove ethnic studies from curriculum at the secondary level and post-secondary levels. However, these programs assist students in accessing knowledge pertaining to the diverse population that exist in our communities, especially teachers who teach in the inner cities of America. Thus, they are important to maintain. As society becomes more multi-ethnic, CSP will be required to provide educational

equality across racial and ethnic communities. Alim (2014, p. 90) stated, "…CSP…is necessary to honor and value the rich and varied practices of communities of color and is a necessary pedagogy for supporting access to power in a changing nation."

To be clear, Ladson-Billings suggested the following as key components for teachers and students of culturally-responsive pedagogy: produce students who can achieve academically; produce students who demonstrate cultural competence; and develop students who can both understand and critique the existing social order (1995, p. 474). In culturally responsive pedagogy, students develop the ability to read, write, speak, compute, pose and solve problems at a sophisticated level. The teachers who are best suited to develop these tasks with students are teachers who observe youth culture to determine how to incorporate this culture into the curriculum. .

African American Achievement in Mathematics

Mathematics students are expected to master the content in Algebra, Geometry and Intermediate Algebra to lay the foundation for more advanced mathematics (Advanced Algebra, Trigonometry and Calculus) (see Appendix A) (Coleman, 2010). The technological world where information is at their fingertips precludes the need to memorize information. Therefore, current educational standards emphasize that students must be able to create new knowledge and interpret systems (Howard, 2013; Nasir, 2011; Paul, 2007). The ability to do so is essential for students to critical thinking and problem-solving skills. When students can think critically, they can analyze and evaluate problems. The ability to analyze and evaluate provides students with the ability to generate potential solutions. As a result, African American male students are ensured greater success in mathematics.

It is vital that strategies that increase critical thinking and build skills to develop mastery and to learn perseverance are used to ensure the academic success of all African American students. Kujichagulia School places tremendous emphasis on mathematics. By the end of eighth grade, students are expected to master the content in Algebra, Geometry and Intermediate Algebra, to lay the foundation for more advanced mathematics such as Advanced Algebra, Trigonometry and Calculus. (see Appendix A) (Coleman, 2010). The technological world where information is at their fingertips precludes the need to memorize information. In addition there must be a high quality of education in all subject matters; academic rigor is essential. Algebra is a gatekeeping course and is emphasized at Kujichagulia School because students are encouraged to promote to ninth grade having passed Algebra, Geometry and Intermediate Algebra with a grade of "A" or "B." Algebra is a subject matter that is required to be mastered to ensure that all students succeed in advanced mathematics.

Therefore, current educational standards emphasize that students must be able to create new knowledge and interpret systems (Howard, 2013; Nasir, 2011; Paul, 2007). The ability to do so and to think critically is essential to solve mathematics problems. When students can think critically about something, they are analytical and evaluate it with an end result of solving the problem. These skills ensure African American students academic success in mathematics.

When relationship-building is at the center of teaching, African American students have an opportunity to make sense of problems and persevere in solving them. In addition, African American students can practice reasoning abstractly and

quantitatively to master mathematics skills. Moreover, African American males practice modeling with mathematics and use appropriate tools strategically.

African American students read about and observe people who look like them in their studies. Teachers can integrate the contributions made by Blacks to science, technology, engineering and mathematics into their lesson plans (Muhammad, 2003). Teachers can design activities or research individuals or simply mention them and the role mathematics has played in their life. Here are a few suggestions: Imhotep (Ancient Father of Medicine), Al Khwarizmi (a great mathematician), Charles Drew (medical doctor and father of the blood bank) , George Washington Carver (celebrated botanist and "peanut man"), Lonnie Shabazz (brilliant educator), Mae Jemison (medical doctor and astronaut), Benjamin Banneker (mathematician, scientist, astronomer and surveyor), Jan Ernst Matzelger (inventor and shoemaker), Daniel Hale Williams (heart surgeon), Garret A, Morgan (inventor of the gas mask and traffic lights) and Frederick McKinley Jones (inventor of the refrigeration industry), to mention a few.

Many mathematical concepts and skills are utilized in sports. For instance, in basketball, there are free throw percentages to calculate and in baseball, batting averages. If students are introduced to model rockets, the teacher may do a lesson on altitude or velocity, then the students can visit the local amusement park on Math Day, Science Day or Physics Day and practice using their new mathematics skills with instruments that they designed such as accelerometers to calculate velocity and altitude and utimeter to determine temperature and barometric pressure (Muhammad, 2003).

In addition, teachers who provide students with higher levels of questioning increase students' opportunities to learn. When students are trapped at the lowest level of

questioning, they are simply regurgitating information, algorithms or formulas, but memorizing does not necessarily mean that critical thinking or reasoning has taken place. When knowledge has been understood and comprehended, it must take the form of application. When students can comprehend facts and rules and verify and apply them, then they begin to use their critical thinking and analyzing skills (Muhammad, 2003).

Alongside teachers, family involvement also influence African American achievement. In one study, the parents and families made the difference in student learning (Sampson, 2002). In fact, Sampson (2002) reported to a person, these formerly poor and now successful Blacks emphasized the role of their families in their success. Their family lives were remarkably similar. There was a great deal of discipline and much structure and order in their home. The children were expected to do well and were taught to think highly of themselves and their accomplishments. They were expected to assume responsibility for their actions and they were allowed few explanations for failure. Finally, the students had to demonstrate constraint and control and think always of the future (Sampson, 2002, p.6). With this in mind, teachers should work with parents and the community of stakeholders to ensure that all students succeed academically.

Conceptual Framework

African-centered schools provide Black youth with a safe place to learn. African-centered schools are not just places where the staff and students are Black. African-centered schools are about being with Black people who are conscious about their culture and identity. This lays the foundation for Black youth to know who they are and the shoulders that they stand on to move forward and empower themselves. I draw on three core concepts in this research: African-centered education; culturally responsive

pedagogy; and academic achievement (striving for excellence) for African American students in content areas with emphasis on mathematics. I will connect these three core concepts and review the school practices at Kujichagulia School that demonstrate how school practices of relationship building, small class size, teacher expectation and community involvement create an environment for learning. Together, these core concepts enable and motivate African American children to know their history and to learn challenging content area; I discuss each in turn.

Differential Treatment of African American Students

Gay (2010), Martin (2000), Martin (2007), Ladson-Billings (2009) and Moses (1994) found that differential treatment of African American students inhibits their mastery of content. These claims are based on the assumption that at the curricular level, curricular materials are based on White, middle–class standards of knowledge; they are biased against students from certain ethnic and language backgrounds. In response to these concerns, some researchers (Gay, 2010; Nasir, 2008) have attempted to design and document pedagogical and curricular practices that are particularly effective with African American students. For example, teachers who have high expectations for African American students regardless of their prior achievement are more successful (Nasir, 2008).

Furthermore, effective teachers create school cultures that counter the influence of gangs and affirm the importance of learning (Noguera, 2008). They also create classrooms with many opportunities for students to learn, and they have high expectations for all students. Noguera (2008) discovered that strong, positive relationships between teachers and students are critical to academic success. It is

important to provide a personalized learning environment with mentors, counseling, and other supports that provide an opportunity to intervene early and effectively when problems begin. Consequently, these schools have strong and effective school leaders but that does not mean they are authoritarian and intimidating. On the contrary, students reported that principals like David Banks at Eagle Academy and Tim King at Urban Prep in Chicago another urban high school with high graduation rates are regarded more like big brothers and father figures (Noguera, 2008).

Teachers are more successful when they teach new concepts and modify the lesson to make the connection, making meaning of the content and its relation to the real world (Nasir, 2008, Moses, 1994). When there is an effective effort by teachers and students to interrupt the failure of diverse students in schools, then students succeed in academics (Martin, 2009) and other areas. In addition, students should develop the ability to self-motivate, self-focus, self-discipline, self-monitor and self-correct.

CHAPTER III: METHODOLOGY AND RESEARCH DESIGN

I asked Baba Ahmad to send me data about the success of Kujichagulia School students who were a part of his original group. I wanted to know how well the students were doing academically after their experience at Kujichagulia School. Ahmad stated that he compiled the following information: High School Placement test scores, ninth grade mathematic scores and Scholastic Aptitude Test/ American College Test (SAT/ACT) scores. Out of all the students who promoted out of Kujichagulia School and transferred to ninth grade, 56% of the students attended private high schools. They all continued to promote and in 2014 the first graduating class from the new Kujichagulia School graduated and moved off to college/university. All the students who graduated from Kujichagulia School were accepted at private high schools but only 70% attended private schools. Sixty percent of the Kujichagulia School students who promoted to high school enrolled in Geometry (30%) or Algebra II (30%). The Algebra II enrollment is driven by Kujichagulia School students' partnership with Lane College. In conclusion, Kujichagulia School students at Lane College earn A's in Intermediate Algebra. This is a key component of what makes Kujichagulia School an African-centered independent school that promotes high academic achievement in mathematics.

The teachers' education and personal background allows them to put in practice those instructional best practices and cultural principles that enhance the learning of African American students especially boys in a content area that is challenging because of the rigor of the curriculum and the age of the students. The pedagogy and practices of each teacher was examined to demonstrate how certain techniques work to build self-confidence and self-pride that motivated students to succeed, without ridicule.

The daily rituals and traditions that prepared students for learning was recorded and analyzed for purpose, mission and function in instilling focus and self-determination in each student.

Context of the Study

The reason for this study is to provide a school option for teachers, students and parents who live in Oakland and attend Oakland Unified School District (OUSD). I am a resident of Oakland and a veteran educator (teacher, teacher on special assignment K-12 science and administrator) in OUSD. Many parents of diverse ethnic groups have struggled to obtain quality education in OUSD for their students. There have been several initiatives that have not created the change needed to ensure that all students succeed in all content areas. I am hopeful that Linked Learning (a college preparation Humanities program) and African American Male Achievement (AAMA) will improve the success of students. Many of these initiatives are in their early stages and they have improved the academic success of many students of color but the level of success is not at 90% to 100% advance or proficiency rate in GPA as in Kujichagulia School (independent African-centered school). Kujichagulia School has for more than 10 years produced academic scholars in all content areas and mathematics scholar who are one grade above in mathematics at a more consistent level for the last 10 years.

OUSD is a large urban school district with approximately 36,000 students and over six identifiable ethnic groups with over 40 different languages spoken. More than 30% of the students are African American, 38% are Latino, 14% Asian, 10% White, 1.2% Pacific Islander and 6.8% other. Only 29% of African American students in OUSD

are achieving a grade of "C" or better in meeting University of California/California State University (UC/CSU) requirements for graduation.

Kujichagulia School is an option for some parents of African American students to send their children to a school that ensures the success of all their students at the elementary and middle school level. Kujichagulia School is an African-centered independent school where students earn grades of "A" and "B." The school tuition is not as costly as a private school. However, it provides inner city African American students with a college preparation school option. All their students have been accepted to private high schools but not all attend private high schools. The commitment of the staff, students and parents at Kujichagulia School provides students with an academic setting that ensures their academic and social success.

Kujichagulia School teachers are responsible for guiding and instructing the children on their path to academic success. Many teachers have majored and/or minored in their content area. . They all have a bachelor's degree, except for the preschool teacher. She has an associate's degree in Early Childhood Education. Teachers at Kujichagulia School teach split classes (teach grades pre-kindergarten, or kindergarten/first, or second/ third, or third/fourth, fourth/fifth, or fifth/sixth or, sixth through eighth grade; and all teachers have at least two to three subject areas to teach. Finally, all the staff members at Kujichagulia School are committed to the school's mission, which provides them with the motivation and ability to work at the site and ensure the success of all the students (per conversation with staff at faculty meeting, Fall 2011).

The educational philosophy of the school is that all children have a right to a quality education. Kujichagulia School program is grounded in academic and cultural

principles which provide a foundation for the development of self-determined students with academic skills, scholarship skills, leadership skills, creative problem solving skills, teamwork skills and self-confidence skills. The curriculum includes Language Arts, Spanish, science, art, mathematics, computer technology, graphic arts, animation, music, dance, social science, social skills, community awareness, physical education, health and spiritual development. The instructors use a cognitive approach which includes the following: creative thinking and problem solving in a challenging and fun manner to ensure that students are highly motivated, capable and committed leaders. The principle of Ma'at (truth, justice, righteousness, order, harmony, balance and reciprocity) is followed to increase consciousness, self-awareness, identity, self-control and self-discipline. Most students are at least one grade ahead in mathematics and score as advanced on standardized tests following the Oakland Unified District Standards and State Frameworks. The passing grade to promote to the following course in a sequence is an "A" or "B" in the prerequisite course.

The school day begins with a healthy breakfast provided by Mama R; healthy snacks and lunch are also provided for the children midday. In the afterschool program, healthy snacks are provided for all the students who attend Kujichagulia School. They have a physical education class that incorporates acknowledging ancestors and reflecting on the mission of the day. Students call for their ancestors and pledge to be positive forces in the community daily. The motto at Kujichagulia School is, "What Achievement Gap?"

Case Study Setting

In order to explore school practices that might better support African American students in school generally and mathematics specifically, I conducted a case study of an African-centered K-8 school situated in East Oakland, California. This school has a long history of success with African American students earning A's and B's in the content area. Additionally, most students are a grade ahead in mathematics. The school has an extensive history of interrupting a pattern of failure among African American students, especially in mathematics. It is important to the research African American students to analyze what is occurring at this school to interrupt the failure of African American students. I observed classrooms and interviewed teachers about their educational background, their journey to an African-centered school and their curriculum and instruction to discover how they are able to achieve academic success in mathematics especially with African American males. I interviewed the Director of Kujichagulia School who is also the English, Social Studies, Science, Computer Animation and Mathematics instructor for sixth through eighth grades.

This East Oakland, California school is a small, independent African-centered school whose students are expected to master high level mathematics content by the end of the eighth grade. This school presents an excellent opportunity to learn about how routines and rituals are implemented to increase academic skills of African American students. I focused most of my attention on eight teachers who teach pre-kindergarten through eighth grade mathematics in order to learn more about how the mathematics emphasis at the school was implemented. In addition, I observed classrooms and school practices to explore what makes this school unique. My goal was to explore how this African-centered independent school ensured the academic success of all their students.

Participants

The focus of this study was to investigate eight teachers from Pre-Kindergarten through eighth grade who were teachers involved in the implementation of the mathematics program in addition to other academic programs at the school. The setting of the school was in East Oakland, California. Baba Ahmad A was the director of Kujichagulia School, which he founded in order to interrupt the failure of African American students. He created a college preparation school and chose to accelerate students in mathematics to ensure they were prepared for high school and college ready mathematics.

The school site for this study is located in East Oakland, California. It is an African-centered school created by Nia Church in 1986 to create a solution to interrupt the miseducation, the culturally and spiritually deficient education imposed on African and African American youth in public schools. The school serves children from preschool through the eighth grade. The school follows the Kwanzaa principle of Kujichagulia (self-determination). The mission of Kujichagulia School is to sustain an educational institute in the best traditions of African and African American ancestors. The school promises to give birth to the genius resident in each child.

Kujichagulia School has never had all that it needed financially to educate African American students. Tuition is extremely low compared to other private schools in the area, with tuition rates at approximately one-half that of parochial school in the area and one-third to one-fourth that of other independent schools. At the same time, the school has never had school climate or discipline issues. Most important, there is an agreement between the staff members to bring self-determination (Kujichagulia) to each

student. Parents realize that they are the first teacher of their child (personal conversation with one of the founders of Kujichagulia School, "Mama O", Fall 2011 and Baba Ahmad Director of the program, Fall 2011) and they work to control and shape their child.

The Director of Kujichagulia School, Ahmad A, also designed the mathematics curriculum for the school. He was born and raised in Oakland; he graduated from Pine High School in 1983. He went to Southern California State University where he majored in Electrical Engineering. After graduating from Southern California State University in 1991, he worked at Intel for ten years. He was responsible for designing Pentium processor, and he developed software. He continued his education, and he earned a Master's of Science in Computer Engineering from Santa Claire University. While he was at Intel, he created a "High School Engineering Program" at Castle High School, an inner city public high school, and he began teaching full-time at Lane College, an inner city junior college, in the Computer Systems department. After working at Lane College and participating at Kujichagulia School part-time, he knew that he had to give Kujichagulia School more of his time and created a school that would be a leader in academics. In addition, he worked as an adjunct faculty member in computer programming at Holy Christian University, a private university.

Ahmad A has been married for 29 years. He lives in Oakland with his wife, who he met while at Southern California State University. They have three children who attended Kujichagulia School. He serves on the Council of Elders at his church, Nia, and he has taught courses in the Medu Neter (Egyptian Hieroglyphics), Rhythms of Nature, 2000 Seasons, and others. While at Kujichagulia School he has authored several books addressing critical social studies lessons, including: *Africans in Americas*, *Black Power*

Movement, *Kemet: The First Civilization*, and *Africans Fight Against Slavery*. Ahmad has worked in industry, taught at the college level and also at the high school level; these opportunities have provided him with the skills and expertise to provide the students at Kujichagulia School with an excellent mathematics program that includes real world experiences.

Baba Ahmad A teaches a coeducational mathematics class; he teaches Algebra, Geometry and Intermediate Algebra/Algebra II. Baba Jamaal M teaches Pre-Algebra and sixth grade mathematics; Baba Boipelo teaches fifth through sixth grade mathematics to students who are not a grade ahead in the mathematics class; Mama Ada M teaches fourth and fifth grade mathematics; Mama Abbey teaches third through fourth grade mathematics; Mama Abilene teaches second through third grade mathematics; Mama Adina P teaches first grade mathematics; Mama Aaliyah and Mama Amara teach Prekindergarten mathematics and Pre-school mathematics, respectively. Students enrolled at Kujichagulia School must earn an "A" grade or "B" grade to proceed to the next course in mathematics sequence.

Data Collection and Observations

Data collection included observations from the classroom, playground, building and interviews from the classroom teachers. I observed eight different mathematics classes at Kujichagulia School over four months. I observed for more than 90 minutes in each classroom on two different occasions. In addition, I observed several middle school classes. I observed a Health class one time. Additionally, I observed both a science class and animation class 10 times each for 60 minutes. I sketched the classroom seating and recorded discussions between teacher and students. I observed the playground area and

the breakfast/lunchroom for 90 minutes at least four times: twice in the morning and twice in the afternoon. I sketched and recorded observation notes for each visit to the play area and breakfast/lunchroom (Appendix D).

Before the observations, I was provided with a course outline, lesson plans on the observation day, and any other pertinent handouts. Then I documented the content, assessment and interpersonal relationship between teacher and students. I documented how the teacher structured the lesson of the day and the response of students when students had a correct or interesting idea or incorrect response. I recorded how the teacher approached mathematical concepts discussed because it is the focus of the school and how students demonstrated their understanding of mathematics content. I recorded the warm up, do now, lesson learning target, lesson activity, check for understanding and reteach. I recorded the notes and comments from direct instruction, guided practice and independent practice. I transcribed the recorded notes and my observation notes. Finally, I categorized the notes into three sections: African-centered education (principles), culturally responsive pedagogy, and mathematics curriculum and instructional strategies and assessment demonstrated in class.

Rituals and Traditions. At African-centered schools, teachers mentor students and expect their success. A teacher-student relationship is established to provide opportunities to develop "self-determination." Students call teachers by their titles: Mama (first name) for female teachers and Baba (first name) for male teachers. All elders are respected at the school whether the students know them or not. I observed that when I walked into a classroom and a teacher was not present students who had seen me several

times at the school would asked me if they could visit the restroom or asked me questions regarding the work. They would always address me as “Mama Janice.”

It is early in the day and all the students in Baba Ahmad’s class are outside and preparing to work out to prepare their minds and bodies for the day. The teacher has instructed one of the students to put the students in three lines. Three students would not cooperate, and they resisted following his instructions. They were nudged into place by another student until they formed three lines. The teacher spread his arms out and said, “This is the safety zone.” The students copied teacher and spread themselves out. The teacher then said, “There is no whining; we are going to run around the block.” During this run, the teacher ran most of the way backwards, and students ran towards him. The students were happy, laughing and full of energy. After the run students formed a circle. While in the circle, the teacher demonstrated abdominal breathing and students repeated the same action (abdominal breathing). They repeated the breathing pattern followed by the forward bend at the waist, followed by a 90 degree bend at the knees at least five times. The students’ feet were flat during these bends. The teacher stated, “If you cannot bend your pants are too tight.” When the students bent at the waist, he told them to let their body hang. When the students bent their knees, he told them to control their breath.

I noted that all the students gathered in a circle with hands held together for the “libation.” This was another morning ritual to start the day. The libation consisted of water in a cup which is representative of life, purity, and cleanliness; small drops of water were poured on the earth as a symbol of the connection between the material world and the spiritual world, when the ancestors name was called out followed by the word Ashé. They called for their ancestors. I could hear the students call out for their grandparents

and family members who had passed away. The youngest student was confused and called for people who were still alive. The teacher explained, in a gentle manner, that ancestors were people who had passed on (passed away). The students continued to call out their ancestors names. The teacher responded with "Ashé." I stood away from the circle to provide the students their privacy. Finally, students stated the pledge: "We are one people and one nation under God…" They ended the circle with Ashé. Then students moved up to the classroom.

Call and Response. Another African-centered ritual that I observed at Kujichagulia School is the call and response method to bring the class to order. "Ago" and "Ame" is a choral response that is communal and African-centered in nature. The whole choral demonstrated that more people were paying attention. The result was a pleasant and quiet learning environment. This activity was without labeling or drama. It meant that children communicated that their behavior was in order.

There is not a behavior problem at this school. In Baba Jamaal's classroom students started to make noise and Baba Jamaal settled students with one word, "Ago." This call and response phrase was used by all staff members to quiet students. Teachers did not raise their voices to settle the class (call/response). Teachers said, "Ago" and students responded with, "Ame" (instantly complete silence). An alternative was what Mama Abilene said, "Batio" and the students responded with "Bati" and there was instant silence in the room, also. It meant that noise level in the space was too loud and it was not appropriate for learning. Teachers at the Kujichagulia School accepted the high energy level of all students, but they consistently provided a learning environment which included student engagement.

Consequently, you did not hear repeated reprimands from staff or other students. Kujichagulia School has created a safe place to learn. The students also supported each other academically and socially. There were no substitutes employed at Kujichagulia School. Either an office staff member, a former Kindergarten teacher, or an active parent covered classes for teachers in their absence. They used an alternative lesson that promoted cooperation or another valuable behavior rather than the scheduled lesson. Hence, only the teacher was the teacher of mathematics content and concepts. Therefore, teachers monitored their absences thereby reducing the absences of teachers.

Curriculum and Pedagogy in Mathematics. The math curriculum is the State Standard Math curriculum for California. The math curriculum at Kujichagulia School was structured to promote students one year in advanced in mathematics. The practice at Kujichagulia School was to place the students in math course one to two grade levels above their current grade. The K-8 teachers understood that students must master the content of the pre-requisite math classes at each grade level to provide a solid foundation for the following mathematics course in the sequence.

Secondly, teachers at all grade levels used culturally responsive pedagogy to teach the students mathematics. They frequently used examples that related to the students culture or experiences that students had in their daily lives. Baba Ahmad used examples about grades or academic scores for students to calculate a problem. He would also use examples that related to their world experiences. For example: What is the area of your bedroom or classroom? What is the shortest way to travel from your house to school? How much money must you earn to take a trip to Washington, D.C.? The students would have to think about the cost of the trip by plane, the cost of the food, the cost of the hotel

room and spending money for the trip. Again, students would have to think about ways to earn the money and how much more money they will need to just prepare for the trip to Washington, D.C. (new clothes, suitcase, toiletries, passports, and other important items).

The teachers demonstrated examples of culturally responsive pedagogy by showing how students used mathematics information in their lives. For example second grade teacher Mama Abilene had a mathematics problem regarding eating bananas and oranges and how many remained (subtraction); kindergarten teacher, Mama Ashanti reported, "We are learning about arrays, multiplication facts and subtracting regrouping." She drew balloons and pictures to assist students. Third grade teacher Mama Ada used a pizza pie to discuss her math problem. Baba Ahmad used Scholastic Aptitude Test (SAT) scores to discuss a problem in Algebra while Pre-Algebra teacher Baba Jamaal used density problems to discuss ratios and proportions. In addition, teachers stated that they told students the following: when they learned how to use math, then they will do much better in life (school and finances), and they do not have to be afraid of it.

All teachers had a long wait time (over two to four minutes of the expected time) when asking students to solve problems. This provided students with time to think critically and process the response. In addition students used manipulatives throughout the class. Teachers checked for understanding frequently during the lesson. All the teachers walked up and down the rows of desks or rows of tables and reviewed each student's work, and they would follow up with a question if they noticed errors. If many students had similar errors then the teacher would stop the class and provide more explanation or an example. Teachers checked each student's work at least three times throughout the class period. Teachers were able to know what students knew and

understood, and what they would have to revisit or reteach in the afterschool program or the next day's lesson.

The core reason that Baba Ahmad created Kujichagulia School as a college preparation school is because it is a challenge to accelerate young students in mathematics. In the literature review Lee stated that "…the teacher's role is understood to be an extension of the parental role…. This conception of teaching is one in which the teacher sees his or her own personal future in the lives of the children s/he teaches. To be successful, an African-centered pedagogy requires this type of teacher attitude "(Lee, 1994 p. 305). The success of students at Kujichagulia School cannot be accomplished without extra time applied by all staff members. I noted that some teachers arrived early, breakfast time, to support the students with their mathematics homework. Baba Ahmad was available daily to support students during breakfast session.

In addition, I noted that teachers did not permit their students to leave the mathematics class until they demonstrated understanding of content with an exit slip, a sample of student work that demonstrated understanding of content and is usually completed in five minutes. I am concerned that this practice may have students spending their free time in the classroom. Since this school is predicated on accelerating students, it occurred to me that this method may not be advisable for all students. Some students may benefit from participating in lunch (eating and playing). Some teachers stayed after school to assist with mathematics homework. However, they were not the same teachers every day. I noted that there was a high demand for teacher time on task (teaching) outside of the regular class time to ensure that all students succeed academically in mathematics. Baba Ahmad described how he accelerated students in mathematics:

We started to prepare students for the new mathematics placements in the summer of 2003. The summer program had hard core (standards based) mathematics (curriculum). We strengthen their math skills and those students are doing exceptionally well. We had one student who did not take Algebra but I noticed that this child was really sharp so I moved him to Geometry and I did what I needed to shore him up in Algebra (during the summer). He is a strong student (he earned an 'A' in Algebra during summer school). Most students did exceptionally well.

Tensions. The school placed a great deal of emphasis on their accelerated mathematics curriculum. This meant that students were challenged and no child was under-performing. However, a new dilemma emerged: The tension associated with pushing students ahead, when they may not yet grasp the content. Teachers were encouraged to stay on pace. Teachers reported that they were reluctant to move forward with the content when the majority of students did not demonstrate mastery of the content. Mama Abbey reported, "When a percentage of the class that has an understanding is greater than50%, then we move on. I do not want students who understand the work to get bored." I reported in my notes that I do not believe 50% is a sufficient percentage for a teacher to move on. Therefore, Mama Abbey students were dependent on the afterschool tutoring to maintain their grade of "B" or better. Other students had to take time away from their studies to support the students who needed more time and practice to master the content. This is an African-centered value that all work cooperatively to ensure the success of every student. However, it is important for teachers to teach the students and not just cover the material. When students are unable to

master the prerequisite to the content material, they are unable to augment the information because the foundation for the concept was misunderstood.

One way that teachers dealt with this dilemma of the accelerated mathematics curriculum was to stay at school extra hours to work with students. This also presents dilemmas. I noted that teachers were encouraged to arrive early and assist students with homework in the morning. Many teachers had young children themselves and they were unable to meet that demand. At the end of the day, teachers with young children could also not stay and assist with homework. Many teachers had other activities inside and outside of the school to attend to therefore they were not available for the afternoon tutoring program.

All teachers stated that they were concerned about the attention span of students' and they tried to make the lessons engaging, interesting and activity-based. The students were at different levels academically in the math lesson. Teachers stayed on track with a pacing guide and they reported that they would go back and forth with Baba Ahmad about permitting them to slow down the curriculum delivery when the majority of the students had not mastered the content. I believe that strategies for teaching the challenging content should be put in place to prevent students from falling behind. During the summer professional development, teachers should strategize about best practices for teaching complex content in context. Teachers reported that they move students according to how the students are learning and avoid setting them up for failure. As a result, pacing student learning is a daily challenge. Teachers stated that they are not covering the material, "You are teaching the child."

Different Age Groups. Students were placed in math classes based on performance, not by grade. Thus, mathematics classes, especially in the middle school grades, were mixed age. I asked teachers to discuss this. Baba Ahmad said, "Mathematics is the least impacted by the age group of the students; it is about the math. Everyone in the school takes math at the same time. Students attend math class that fits their ability and do their level of math." Students are taught the content of mathematics standard for the mathematics subject that they are enrolled in. A pacing guide created by Baba Ahmad is written and followed by the teachers to ensure students learn all the mathematics content and concept for their subject area. Furthermore, teachers reported that they check for understanding often to determine if students are mastering the mathematics concepts. All teachers, first through eighth grade, test students in mathematics weekly on Friday during the scheduled mathematics class. Then teachers checked the material before Monday and understood what they needed to revisit or reinforce to lay the foundation for the new mathematics concept.

Project-Based Science Class and Animation Class. The middle school students at Kujichagulia School have three years of science in the same class. The teacher is Baba Ahmad, who teaches Earth Science, Physical Science and Life Science. During one classroom observation, I noted that students had visited the Oakland Zoo to observe the primates. They had taken a grid of questions. When it was time to report their answers in class, the students were all talking at the same time. One female voice could be heard responding to several of the teacher's questions regarding the trip to the zoo. She had been very observant and had her notes as support for her classroom responses. A male student spoke, also. He did not have the same detailed notes but he had a great

recollection of what he had observed at the zoo. Since the students were directed to observe the primate behaviors and take notes, they had been given an opportunity to conduct field research. After conducting field research, they were required to write a report detailing the differences and similarities between primates.

The class was followed by the Animation class in which the teacher instructed, "Draw a diagram of the Internet system for Kujichagulia building." When you type a URL address, a student said, it sends the information to your computer. The teacher said, "Alright you have a laptop and you type an address. It has to be translated into an IP address and this is a series of four numbers and it is unique to every computing device on the Internet." He continued to talk to the students about how the Internet connects to their computer. Baba Ahmad, having worked at Intel for several years, brought his knowledge of computers and animation to the students. Students learned the language that permitted them to make action figures in animation form. The younger students were supported by the eighth graders who had more experience in creating animated characters. Again, the students demonstrated cooperative learning. In addition, I also observed the animation class students write the codes to produce action in the animated cartoon. I was invited to watch their animated cartoon characters in action.

In addition, I observed that students were able to concentrate on science and animation class in the afternoon because it was activity-based. Each student had their own laptop and sat or stood while they were at work. The students also learned to think critically about the science content and the projects that they created in both classes. For science fair students put a lever and pulley system together and brought it to Kujichagulia School for presentation. They gave a presentation of the project, and presented the

science concept, the reason for their choice of material, the reasoning behind their design and demonstrated how it functioned, the pulley system. I observed that students were on task and proud of their work and project. They also included a written report about the function of the pulley and lever system.

Teacher Interviews

Teachers were interviewed four times (February to May). Interviews focused on both teachers' individual backgrounds, teachers' knowledge of African and African American History and the mathematics curriculum and instruction at the school. In addition, the teachers' journey to an African-centered school was explained by each teacher. Teachers answered the questions about the mathematics curriculum and instruction implemented at this African-centered school to ensure the academic success of all students. The routines and patterns of the teachers at Kujichagulia School were explored to obtain a better understanding of the teachers' and students' relationships and the ways that may promote the learning of mathematics and other content areas.

I also interviewed teachers twice for approximately 30 minutes each (Appendix B). I provided teachers with the interview questions ahead of time, also. The interviews were audio recorded and transcribed (See Appendix B interview questions.) I interviewed the teachers individually to determine their educational background. Then I asked questions regarding their journey to an African-centered school. Next, I asked how they structured the mathematics instruction and assessment. After the observation, I asked the teacher to tell me what I observed during the observation session.

Data Analysis Plan

I analyzed interviews and observations to code for African-centered education (evidence of principles of Ma'at and Nguzo Saba), culturally responsive pedagogy (evidence of Africans and African-Americans in the content area), and mathematics assessment and achievement (evidence of grade level mathematics achievement). I organized the data according to emerging themes. I checked for mathematics understanding of mathematics concepts. I implemented deductive and inductive processes to interpret the results.

In the deductive process, I coded for the following categories African-centered education, culturally responsive pedagogy and understanding of mathematic concepts, instruction and assessment from Pre-kindergarten mathematics, first grade mathematics, second grade mathematics, third grade mathematics, fourth grade mathematics, fifth grade mathematics, sixth grade mathematics, Pre-Algebra, Intermediate Algebra I, Geometry through to Algebra II. After I reviewed the data to determine what information I gathered that I had not thought of in advance, then I determined how it related to the subject matter in the inductive process.

I implemented deductive analysis to code African-centered education and culturally responsive pedagogy to demonstrate how a teacher related to students background, implements meaningful and hands on activity, and I used deductive analysis to assess understanding of mathematics content. In addition, I reviewed the data with a lens of inductive analysis and recorded the observations, trends, themes and patterns that demonstrated understanding and learning to apply mathematic and application. When I found a pattern or trend or theme surface, then I named the trend or theme.

Finally, I documented the relationship between teachers and students, and I analyzed the behavior to assess the impact on instruction of mathematic curriculum and concepts for African American students. I documented the teachers' choice of words to analyze possible impact on students' self-efficacy and self-determination that lead to self-pride, self-confidence and high scores in advanced mathematics. I verified the main practices that demonstrated African-centered education, culturally responsive pedagogy, and mathematic achievement.

CHAPTER IV: RESULTS

African-centeredness and culturally responsive pedagogy positively permeated every aspect of the school. First, I reviewed African-centered education at Kujichagulia School. The way that Baba Ahmad changed the school from an alternative school to a college preparation school and the philosophy of African-centered education that followed the Nguzo Saba principle of Kujichagulia (self-determination) is evident throughout the school. It influenced the teachers' curriculum choices, practices and rituals. The central focus of Kujichagulia School–that it is an African-centered independent school–is evident in every practice, routine, ritual and tradition in the school. When you enter the front gate of the school, hallways, gathering areas and classroom, there are signs of Africans and African Americans who are prominent in history. There are historical references and murals that depict the ancient Egyptians and signs of hieroglyphics, also.

Kujichagulia School students are a part of the African-centered community; they represent students who have been schooled in an African communal setting that promotes self-determination and self-pride. In every classroom, the name of a great African or African American person is placed on the door and the classroom by grade is called by the ancestors' name. Mama Adina's kindergarten class is named Marcus Garvey (in honor of the 1920's founder of United Negro Improvement Association, UNIA); first/second grade class is named Malcom X (in honor of the 1950's minister of Islam who promoted Black separatism); Mama Ada's third grade class is named John Coltrane (in honor of the 1950's American Jazz great who played soprano and tenor saxophone with Dizzy Gillespie); Fourth/fifth grade class is named Ngola Nzingha (in honor of the

African queen from Matamba, Angola in the year 1582 to 1663); sixth grade class is named Harriet Tubman (in honor of the conductor of the underground railroad who led slaves to the North in 1850) and seventh/eighth grade is named Zora Neale Hurston (in honor of the author of the 1937 novel *Their Eyes Were Watching God*). Students are reminded daily of their ancestors, and they started to develop self-pride that leads to high expectations and Kujichagulia (self-determination). The rituals, traditions and call and response were all components of Kujichagulia School that promote self-determination and self-pride.

Observed Best Practices

It is important to know what teachers consider when constructing a class that will have all students strive for excellence. The Intermediate Algebra students worked with the teacher on content and concepts in mathematics that the students did not understand and/or had misconceptions. All students (Algebra, Geometry and Intermediate Algebra students) were focused, and they had Baba Ahmad as a mathematics teacher for several years because of the practice of looping (same teacher for more than one year). Students at Kujichagulia School were encouraged to assist each other in this communal environment (cooperative learning); I observed and noted less competition between students and more cooperative learning. I asked Baba Ahmad what the three things he kept in mind when constructing a lesson. I noted in my observation notes that Baba Ahmad reported the following:

> It is good to put sixth graders with Pre-Algebra students; Algebra students with Geometry students; and Geometry students with Intermediate Algebra students. The Algebra and Geometry student work together to support each

other's learning in the African tradition. The Intermediate Algebra students are self-sufficient (independent); they can work independently on the self-pace online package mathematics course at their pace. They can do homework and pretest online. Then they attend Lane College and take the test.

Baba Ahmad added, "The math curriculum is straight forward, fast paced and flow simple. Small class sizes allow for teachers to have one-on-one opportunities to work with students. I know each student's weaknesses and strengths and I can correct any misunderstanding of concepts." Baba Ahmad told me that he treats the boys and the girls the same. Additionally, he assured students that he would support them and "make it work," by which he meant that he created a learning environment that ensured academic success. Lastly, he told students to know that, "I love you, but get this work done."

In this chapter, I discuss key components and school practices that seem to promote high academic achievement in mathematics. Baba Ahmad had written communication with parents on a weekly basis to ensure that they were informed about what was happening at the school. Therefore, any event that students needed to prepare for was clearly communicated. The key to developing a strong academic program is establishing clear communication channels between parents, students, staff and community. The students at Kujichagulia School have a responsibility to the school for their decision-making. Students know that the school is an extension of their family. This knowledge cultivates the understanding that bringing harm or distrust to the school is a reflection of a student's relationship with the school. When students are not following the rules and responsibilities expected by the community of school, there are consequences. The disappointment is conveyed, and students are held accountable for their actions to

the group (family, staff and community). To belong to Kujichagulia School is an honor and a privilege. There is a strong connection between the staff and the students and their families. There is an expectation of self-pride and self-determination that motivates and encourages staff to give their all every day of the week at Kujichagulia School. Teachers can teach effectively when the class sizes are small, and there are multiple contacts with students throughout the class period and the day. I will discuss each of these school practices to explain how these practices lead to the successful personal and academic outcomes for the students at Kujichagulia School.

Written Communication. Baba Ahmad, the director of the school, keeps parents informed weekly with messages of up and coming events, projects, trips and homework information. This provides parents with the knowledge that students have work to complete and that the parents are responsible for students' progress. He understands that clear communication with parents assures that they are informed about curriculum content and projects that lead students to develop self-pride and self-determination.

When I read the memorandum directed to parents and guardians, I could read the clear communication that promoted high standards for all students. It was important that students earn a GPA of 3.00 or better throughout the grading periods. When students fell short of their goal, they understood what they must do to recover from the deficit. Since students knew how to calculate their grades, they were able to understand what score they required to earn to move up and forward in that particular content area. Therefore students calculated their grades often in mathematics class. This permitted students to be aware of their grade and work at improving their comprehension of the work to improve

their score. Parents understood that they must be participants in their children's early education to promote academic excellence.

Relationships. Since Kujichagulia School is a pre-K through eighth grade school, teachers are able to build strong connections with students and their families. "Relationships are important to all teachers at Kujichagulia. All teachers have a connection with all of the students. Students believe in us, school and themselves. They become self-starters," stated Baba Ahmad. All the teachers stated that they take their lead from Baba Ahmad, since he is the director. Strong mathematics students build self-confidence, which promotes academic success in other subjects. I observed that when students felt like they belonged in the class, then they asked more questions to clarify the content and concepts, and they earned top scores in the content area. Teachers built a strong relationship with all students; this was a key factor in building trust, respect, self-pride and self-determination.

School and Classroom Environment. All the classrooms are decorated with the namesake's picture and a brief profile of the named ancestor. These ancestors provide students with the inspiration daily to reach their full potential. Content posters in mathematics and science are posted on several room walls. They provide students with information regarding measurements and the processes for all mathematical procedures. Teachers also posted students' work on the walls, therefore students have exemplars of the work (excellent examples), and there are bookshelves with reading books about African and African American people and content textbooks in every classroom, when students have free time they can read these books. Teachers also read these books to students during quiet or free time.

Teachers visit the local library to do research with the students, also. They have opportunities to attend fieldtrips at the local zoo and use mathematics to calculate various measurements at the zoo. Every middle school student at Kujichagulia School has an opportunity to raise funds and participate in the annual Historical Black College Tour that includes three states and a trip to Washington D.C. to visit the National Monuments and historical sites of interest.

There are many containers of manipulatives for mathematics in the earlier grades K-5th grade. Many of the students are kinesthetic learners and manipulatives are used to enhance the learning and encourage students to engage in the lesson. In the hallways, information about upcoming events are posted, along with pictures of former classes at Kujichagulia School. Mama J, a founder and a former teacher who passed away had a large picture in her honor that hung in the entrance of the school, and there is a garden and playground dedicated to her. I reported that the sense of self-pride in what the ancestors lay as a foundation that provides the students with the incentive to always strive for excellence.

Seating Arrangements . I observed and noted that most teachers who worked with students in multiple mathematics courses in one class, such as Baba Jamaal had students section off in the class according to subject in mathematics or grade level whichever was appropriate; Baba Jamaal's students' were working on density. Students needed to take notes while listening to the teacher. The students listened, but they were slow to complete the classwork and note taking. Students were solving the problems and the teacher walked around the classroom and encouraged the students. While Baba Jamaal walked around the classroom, he joked with the students to loosen the tension in

the classroom. He sat in a seat near the door and students brought up their work. Baba Jamal then checked for understanding, and he praised students or sent them back to their seat to correct errors. When he explained work to the students, they leaned on him as if he were their dad telling them a story. All the students were engaged with the task. Off task work was met with a stern redirect. Sometimes, there was an explanation of the consequence of poor behavior.

Curriculum and Pedagogy. All the teachers and staff members at Kujichagulia School received education in Africa and African American studies or history classes or personally through reading African and African American stories and history books from public library and/or Black bookstores such as "Marcus Bookstore." What they did not obtain through direct instruction, they acquired through Kujichagulia School experiences (assemblies, teacher discussions and readings of student required reading lists). Teachers comprehended that they should be knowledgeable of African and African American history to instruct African American students about their history.

Since I only observed mathematics, science and animation classes for this research, I did not observe the teaching of African and African American history. However, during the class period I could hear teachers discuss the contributions of Africans and African Americans in mathematics and science.

I noted that teachers multitask during classroom sessions to work with all students. Teachers met with students individually to talk about the work during class time. They dealt with students who were going through personal issues. Teachers also dealt with supporting other teachers when needed by watching their children or taking on their class during their conference period. In the multi-grade classrooms, teachers taught

two to three content areas during the same classroom period. Teachers tended to keep students together in their content area groups (e.g., Algebra students with Algebra students). Teachers at Kujichagulia School wrote progress reports bi-monthly for students who were struggling for any reason. Teachers in the earlier grades sent flash cards home for parents to work with their children. Teachers reported that this strengthened students' math facts and when the information on the cards was understood, this enabled the students to excel academically. This was one way that teachers at Kujichagulia School brought parents into the learning cycle daily; I noted in my notes that this provided more support for students' success personally and academically.

Teachers constructed the lesson to engage all students. They slowed down the pace to give all students extra time. Even if teachers had to hold students in after-school tutoring support and/or recess to give a concept extra time one-on-one , they did so. Teachers also engaged parents in student learning. Teachers spent extra time with students. However, parents were expected to support learning at home as well. Teachers sent progress reports every couple of weeks, for students on task. Teachers called parents during the day when students were off task. Parents let the teacher know what happened that morning and students lost their privileges at home. Teachers had homework sheets for parents to sign, and they checked in with parents to prevent students from falling behind.

One teacher stated that she noticed that teachers at Kujichagulia School focused on critical thinking. All teachers focused on critical thinking skills and reading comprehension skills and children demonstrated better understanding of the word problems. Teachers worked on word problems and students' computation skills adding,

subtracting, multiply and dividing were mastered, in the earlier grades. When teachers provided students opportunity to think critically as a daily practice, then students built the skills to problem solve in several ways.

Baba Ahmad reported that he likes to find out who is good at math and create a pipeline to advanced Algebra Trigonometry in the ninth grade. They are eleven years old, and they are encouraged by the other students to stay on task. The students are competent; they are earning A's and B's. "You know that you start having discipline problems when the students do not understand the work. They are engaged in the lesson; it is not magic. Girls, how they adapt to math confidence? When they go off to high school, they need to be able to hold their own. Develop (mathematics) skill set then build confidence," stated Baba Ahmad.

Extended Time Schedules. Kujichagulia School schedule of the day is designed to ensure the students have good nutrition for their brain and support for building academic skills. The day starts with breakfast for each student from 7:30 a.m. to 8:30 a.m. Mama R. and her male assistant cook a nutritious breakfast for each student, daily. The teachers are present to provide any assistance with the homework. The breakfast program gives parents opportunities to talk to teachers in a causal setting. I observed several parents seated with their children prior to going off to work. The conversations were light, humorous and communal. Teachers are available to assist students at breakfast, after school and evenings.

The first class of the day for every student is 90 minutes of mathematics. Then the students have a snack time; the younger students have recess time with snack. The next class is Language class (Spanish) for 60 minutes, which is typically followed by a

Language Arts and Social Science block for 90 minutes. The students are not permitted to leave class for lunch without demonstrating an understanding of the day's content. Since students are accelerated in the math program, this practice may appear punitive but students are placed in the appropriate math class based on mastery. Therefore, this is an acceptable practice to ensure students remain on task, focused, and prepared to learn. The next class after lunch is a 60-minute science class. The day ends with a with 60-minute animation class for the middle school group.

Teachers and students have a final opportunity to meet with each other during the afterschool program. There is another snack time and the first hour of the afterschool program is to complete homework. Teachers review a lesson or assist students with individual work, also. Then students attend to their special programs: creative art, cultural djembe drumming, instrumental music, multicultural dance program, Spanish choir, Spanish, chess, football, soccer, track and field practices and other activities. These programs, at the end of the day, allow students to demonstrate their Kuumba (creativity), which is part of the Nguzo Saba.

Small Class Sizes. Class sizes are small. Each class had seven to 10 students per subject. There is only one class that exceeds 15 students, the preschool and pre-kindergarten classrooms with two teachers and 17 students. This practice of small class sizes permits teachers to have multiple contacts with students throughout the day in elementary classrooms and throughout the period in the middle school classes. All teachers have multiple opportunities to check for understanding frequently during a class because of the class size. Students have several opportunities to ask many questions and check in with teachers often throughout the class time.

Student Accountability. There is a clear discipline policy at Kujichagulia School that is based on the principle of Ma'at and the Nguzo Saba Principles especially Kujichagulia. Recall, as an ethical system, Ma'at is often discussed as seven cardinal virtues: truth, justice, righteousness, harmony, balance, reciprocity, and order. The Nguzo Saba is a part of Karenga's Kawaida philosophy, the Nguzo Saba are seven principles: Umoja, Unity; Kujichagulia, Self-determination; Ujima, Cooperative Work and Responsibility; Ujamaa, Collective Economics; Nia, Purpose; Kuumba, Creativity; and Imani, Faith.

These are some of the rules at Kujichagulia that follow the principles. First, students are expected to arrive on time for class with the homework completed. Next, students are encouraged to participate in the breakfast program, but it is not a requirement. Students walk quietly in the hallway when they move from class to class. Students have their supplies for the first two periods of the day. A class set of books are provided for students in each classroom. All students address their elders as "Baba" or "Mama" depending on their gender. They are encouraged to use positive and uplifting language throughout the day, also. Finally, students are expected to be honest and refrain from taking material that does not belong to them.

Students are proud to be Kujichagulia School students. They wear their brown and red uniforms dashikis with pride. Discipline is not an issue at this school. However, the no stealing policy was violated one day. They also have volunteer corporal punishment at Kujichagulia School. Parents must give their permission for this to occur. I was able to observe what the school does when students violate the rules in a serious way. One teacher told me that the day was starting late because three male students

violated a trust at Kujichagulia School: they took funds from the school money bucket. Baba Ahmad called a circle for the whole school which included staff, parents and students. The three students had confessed to stealing were given an opportunity to face the village (staff, parents and students) to explain what they did and to reflect on how their actions violated the Kujichagulia School family trust. This action was powerful for all who were in attendance. There was crying in the room by students, staff and parents. There was a discussion about the role that each of the three students played in the theft and the consequences for their actions. The three students received different punishments according to their age and their part in the violation of school rules. The punishment that their peers, staff and parents determined after a long discussion varied from five days suspension for the student who stole the money; the other students received a punishment of community restoration and privileges revoked at school and at home for all who had knowledge and were present during the incident. The high expectation at Kujichagulia School was not just about academics; it was about character building to develop self-pride, self-confidence, self-control, self-respect and self-determination. Students are held accountable for their behavior and decision making to the community.

Summer Camp. Baba Ahmad has summer camp for students who attend Kujichagulia School or other schools. During the summer camp students enjoy many activities such as swimming, boating, hiking and campfires at nights out. However, every morning after they call on their ancestors, students start their camp day with mathematics activities that prepare them for their next mathematics class in the sequence. Students also participate in activities that build mathematics skills that they had not mastered during the school year. Teachers know what skills and concepts students need to

improve. In addition, teachers know what math skills they need to teach to prepare students for the following mathematics course in the sequence.

Teacher Workshops for Professional Development. The teachers at Kujichagulia School are non-credentialed teachers who have a well-rounded college education which includes degrees in Engineering, Sciences, Psychology, Child Development, African American studies and 90% of the staff have earned advanced degrees. Similar to home schooling parents, teachers instruct students in all subject areas K – 8. Teachers have mathematics professional development in August to share best practices.

Teachers are also introduced to the pacing guide that provides them with their mathematics blue print for the school year. While in workshop, teachers work in groups to reinforce content-specific teaching strategies. They also review student profiles and sample work to determine any weaknesses in the mathematics skills of individual students. There is a portfolio of work for each individual student. This practice permits teachers to learn strategies that increase student acquisition of the mathematics concepts in context.

Looping. Some teachers are able to have the same students the following year, a practice called "looping." This practice provides students and teachers many opportunities to build a relationship that promotes understanding of each other and the content. When teachers know a student from earlier experiences, they can better meet the needs of the student. One instance of looping occurred when Mama Abbey was able to move a grade ahead with her students. She had seven students that she taught last year. This permitted her to better understand the students, and they were able to connect with

her. Baba Jamaal and Baba Ahmad taught two to three grades in the same class period, therefore they also practiced looping that benefitted both teachers and students. Teachers knew students strengths and weaknesses of each student and were more effective at teaching the students.

Community Celebration. On the last day of Kwanzaa or a chosen day during December there is a community celebration to bring students together to honor their ancestors. Kujichagulia School students and staff participated in the annual Mary College "Annual Black History Month Celebration: Loving Africa, Our History, Our Culture, Our People" in February, which took place in the Huey P. Newton/Bobby Seale Student Lounge. During the celebration, students honored their ancestors by pouring water—representative of life, purity and cleanliness—as part of the libations to earth as a symbol of the connection between the material world and the spiritual world. Libations were poured by Minister Afolabi H. of Nia, the church associated with the Kujichagulia School and the Youth of Kujichagulia School performed during the ceremony. Baba Afolabi communicated with the audience and asked them to join in by calling on their family members who passed and youth who had passed away.

I observed and noted that when the boys were drumming their arms were flying up and down in a rhythmic motion. The drumming boys were joined by their drumming instructor Baba M and Minister Afolabi H., which brought more intense energy to the performance. In addition, they were also drumming for the community, which brought extra energy. The girls came in dancing; their braids were flying in the air and their knees were up high. Several dances had them up and down on bended knees; their arms were bent while they moved up and down, and they were dancing with great intensity and

passion. The female teacher was singing to the dance. The audience members were on their feet clapping and some of the women were creating the clicking sound associated with South African Xhosa.

Students learned that their knowledge of Black history is important because we stand on the shoulders of our ancestors. This celebration assisted African Americans in the context of building strong communities. The performance of the students teaches them the power they bring to the community with their drumming, dancing and spoken word; the community demonstrated their appreciation of the youth. There were other youth (Young Gifted and Black group) using spoken word and honoring their ancestors. The celebration marked the annual meeting of African-centered schools with Oakland public schools who honor African Americans and African history. I thought that Kujichagulia School would stay for the whole ceremony. However they returned to the school after their performance and continued their mathematics class that they had commenced in the morning. This was a strong indication that education was serious business "number one" at Kujichagulia School and time was precious. Students returned to Kujichagulia School without complaining and continued their mathematics followed by their science presentations.

Community Alumni Day. Community Celebration of Alumni day is a celebration of academic and cultural achievements accomplished by Kujichagulia School students who have graduated from high school and are moving into college/university. In addition, fun fundraising events are always a practice for this school. They invite alumni and community to celebrate and raise funds to ensure that Kujichagulia School remains in existence. They seek support for opportunities in the form of scholarships, trips, supplies

and repairs for the school. In addition to fundraising, other community members write grants for the school, along with staff members. Therefore certain equipment, repairs and other items can be purchased.

Summary and Conclusions

Baba Ahmad desired to create a college preparatory K-8 independent school that would embrace an African-centered approach to teaching students, which was the reason why Kujichagulia School changed its mission. He wanted the school to have an active, conscientious and nurturing parent-teacher group that would ensure the success of the school. He believed an accelerated mathematics program provided a school climate and culture that would promote academic success. Baba Ahmad described it this way:

In 2003, I tried to recruit a group of eight to nine conscientious Black families to Kujichagulia School. They had breakfast together; I made a presentation to remake the school [alternative school to college preparation school]. Then they did not come [enroll their children in] to the school because of various reasons. Bankole, my son, Malcolm and other second graders who graduated from high school in the year 2014, they started in 2003. These students were at least two grades ahead in mathematics. They were super smart students.

In conclusion, African-centered education principles and culturally-responsive pedagogy create a learning environment that is conducive for learning. When teachers use cooperative learning techniques and classroom examples that relate to student life experiences, then they design a learning environment that enhances learning.

The mathematics curriculum is important and stressed on a daily basis. However, I did not observe in my monthly visits that there was the same emphasis on English and

Social Studies. Admittedly, I did not visit the English and Social Studies classes. Does a mathematics intensive curriculum hamper the development of writing skills and comprehension skills needed to excel in English and Humanities? I would suggest that Baba Ahmad as a director of the school acquire funds to hire a Language Arts and Humanities specialist to ensure that students' written communication skills were monitored with the scrutiny that Mathematics was monitored. The tension at the school is in regarding the daily time spent on mathematics. Science and animation classes were placed at the end of the day to permit more hands on activity-based learning. Students were able to move around the class and create projects based on science concepts and content. In animation class students were able to create comic strips of youthful content such as boys playing basketball.

One of the key components of what makes Kujichagulia School a school to research is that its focus is on high academic achievement, especially in mathematics, for African American students. The staff at Kujichagulia School is committed and will do what is needed to ensure the personal and academic success of each student. The staff believes that every student can succeed. When they observe students moving forward in their personal and academic life, they celebrate the success of the students. Students understand explicitly that the staff, parents and community have a vested interest in their success. The aim of every staff member at Kujichagulia School is the following: to ensure that all the students reach their full potential and are encouraged, and motivated to continue to work effectively to ensure their own success. During my observation, I noted that Baba Ahmad stated that he designed the current Kujichagulia School K-8 to ensure that students were one grade ahead in mathematics and ready for college/university in all

the content areas: Mathematics, Science, Computer technology, Language Arts, Social Science, and Foreign Languages.

Baba Ahmad's strive for excellence for all Kujichagulia School students started with the mathematics curriculum. He reviewed the K-12 mathematics state standards and determined that approximately 20% of the standards were repeated in each grade. He wanted to provide opportunities to ensure that students were eligible to obtain academic scholarships to private high schools following their experience at Kujichagulia School (recall Kujichagulia School only permits grade "A" or "B" to promote to the following grade or course). Therefore, some students are eligible to enroll in Advanced Algebra Trigonometry also referred to as Advanced Algebra II in the ninth grade, Calculus/Math Analysis in the 10^{th} grade and Advanced Placement (AP) Calculus/ AP Statistics in the 11^{th} and/or 12^{th} grade. This mathematics schedule Baba Ahmad devised for the students would assure that all the students had their mathematics requirements in place prior to entering the college/university. Baba Ahmad wanted to position students to move from high school through college/university. In this chapter, I will present evidence from my study about how these ideals were implemented in the school.

Emergent Themes Teachers provided students with rigorous content material in mathematics courses, often at one or two grades above their current academic grade. They checked for understanding often at each grade level, which provided students immediate feedback of their work. The frequent checks for understanding allowed the teacher to monitor student mastery of the content area. The teachers wanted to know what part of the learning target students were mastering and what needed re-teaching.

There is an extremely long wait time in each class on purpose. Time is provided for students to think critically about the problem or task. When students rush through a problem, they may make simple mistakes that could have been if they had taken their time to complete the problem. Students are encouraged to explain their process for solving a problem using the correct mathematic terms and principles.

High Teacher Expectations. All teachers at Kujichagulia School stated that they have high expectations for all the students at Kujichagulia School. Teachers thought about how they could improve their instruction before and after every lesson. Several teachers stated that they instructed students to follow the problem solving strategies that they posted and outlined on the walls. Mama Abbey reread them, "Follow instructions. Talk. Prove what you know. You must follow directions. Check your answer for reasonable responses." Mama Abilene told the students to "talk it out." She requested that students, "Learn to label their numbers, pull out information and check their word problems." I noticed when Mama Ada students were solving problems. Mama Ada asked, "What is the next step and why are you performing this step." The teachers always checked for understanding frequently throughout the instruction time.

Consequently, I believe that a small staff is able to have a strong relationship with every student on a personal and academic level. This provides students with many sources for motivation and academic support. The fact that teachers are required to complete their curriculum ensured that there are fewer gaps created in the learning process for students who spent K-8 grades at Kujichagulia School. Teachers are able to reflect on the daily lessons and ask their colleagues for support when needed. Mastery of

content and concepts are stressed in each class. This is an efficient manner to guarantee that each student reached his or her full potential through striving for excellence.

The class size is a student-teacher ratio of approximately 1:10 or 1:15 student-teacher in middle school; the student-teacher ratio in elementary school is approximately 1:10. Given these ratios, teachers have many opportunities for individual contact with students. This provides teachers with an opportunity to have academic conversations with students about the content, on a regular basis.

Students and their parents can contact teachers and text them when they need information throughout the evening. In addition, teachers are available before school, during breakfast, afterschool, during tutoring time and other scheduled times. Given this availability, teachers expect the students to learn the daily content with no excuses; school is about learning and teachers have high expectations for all students.

Excellence Practices. It is vital to the progress of students that each teacher provided instruction to increase the comprehension of the content area (mathematics). Each teacher at Kujichagulia School is expected to have students master their portion of the content area. Pacing guides are provided as a road map to accomplish this goal. However, teachers are encouraged to meet the needs of each student. Teachers reported that if students are engaged and motivated to learn then they achieve academically.

Elementary mathematics teachers. Kindergarten teacher Mama Ashanti stated that she used, "Activity-based lessons using manipulatives to keep students engaged…" She also stated that she, "Stimulated prior knowledge and constantly praised students." I could hear her say, "You did a good job!"

Second grade teacher Mama Abilene stated that when students were solving math word problems, "For students to stay engaged and remember their processes, students are learning to label their numbers and check their word problems." She wanted them to think about their responses did the answer make sense. I noted that several teachers stated the same concern; teachers needed students' minds on their work or task at hand to guarantee success in the content area. Students are redirected when they become unfocused because teachers understand that distracted students cannot interpret the lesson and perform at high levels in academic courses. (See Table 1)

Mama Abbey third grade math teacher reviewed multiplication processes and she stated, "I was looking at engagement. I was consciously choosing students that I knew needed extra help. [If] I was also thinking about why students chose the answer, [then] I could help fix the incorrect one." The teacher had students walk through the process stating their reasoning aloud. I noted that I observed this in several classes; the majority of the teachers had each student explain their answers to other students in the class to demonstrate the line of thinking that the student had followed to process and to solve the problem. Mama Ada fourth grade teacher worked on fractions and addition. She stated, "Students needed a visual and hands on activity before moving to unlike fractions to increase engagement (and comprehension)." I did not observe any student just copying work from another student. I always observed students working cooperatively with each other.

Middle school mathematics teachers. Secondary teachers are presently teaching their students high school mathematics courses. Fifth and sixth graders are exposed to Pre-Algebra curriculum in Baba Jamaal's class. They are encouraged to listen, to take

notes, to discuss the problems using mathematical terms and to solve the problems. This requires much focus for the students to remain on task. The sixth graders in Baba Ahmad's class are taking Algebra. They have a great amount of energy but their understanding of the content of Algebra is outstanding by Algebra state standards. I observed that they can discuss their reasoning for the method that they used to solve the problem using mathematical terminology. If there is an error in the calculation, then they know where they created the error.

The students who were able to maintain the pace were placed in Baba Jamaal's mathematics class followed by Baba Ahmad's mathematics class. In Baba Jamaal's Pre-Algebra class they reviewed metric conversions and then proceeded with a lesson on density. The unit included ratios, rates, proportions, similarities and indirect measurements. I noted that Baba Jamaal was concerned about the progress of the students and stated the following:

I remember being slightly disappointed when my Pre-Algebra students started to become confused and frustrated by basic calculations. There are some developmental gaps in their math backgrounds that make decimals and fractions a greater challenge. I'm hoping enough practice will increase their skill level and build confidence. Most of the students seemed engaged but there are several who are easily distracted. Reminding myself to move around the room, vary my tone and give tangible examples helps me to remedy these concerns, to a point.

I observed at the forefront that student mastery of content is Baba Jamaal's concern and earlier grade teachers mission to complete the curriculum without creating any gaps in understanding, also. If misconceptions of content are not resolved, then the

problem might be multiplied as the students progressed through the mathematics sequence of courses at a fast pace. Teachers' reflections are about student engagement and motivation because those two teaching practices promoted learning at all levels. I noted that several students were frustrated with the fast pace of the class. Those individuals needed to have the teacher slow down. I noted the tension with Baba Jamaal about creating content and concept gaps in the class due to the pace of mathematics class.

At Kujichagulia School, although the mission is to have all students one grade ahead in mathematics, some students fell behind. Again, the secondary teachers followed along the course sequence pathway as the elementary teachers. However at this point in the students' progress in mathematics, there may be students who are unable to maintain an "A" or "B" with the accelerated pace of the mathematics curriculum. Some students had to be placed in a grade level appropriate class with Baba Boipelo who is not a mathematics specialist.

I noted that some students did not enter Kujichagulia School during their early elementary school days; these students did not have the opportunity to build up the fundamentals skills in mathematics laid down for the other students, which would lead to mastery of mathematics content by the sixth grade and preparation for Algebra.

Baba Ahmad decided to have fifth through eighth graders in a mathematics class taught by Baba Boipelo to teach the underachieving mathematics students. I am concerned about these students; they number fifteen who were not provided with all the innovative teaching provided by Baba Ahmad, Baba Jamaal and most of the elementary teachers. They worked on the appropriate grade level work, but they were not challenged with innovative techniques in teaching mathematics. Baba Boipelo believed that the

students lacked the language skills to move forward in mathematics. He worked hard on defining words and terms. I noted in my observations that he reported the following:

The caliber of mathematics students had decreased since students come from outside of the school (Oakland Public Schools). Mechanics are sharp but their desire is lacking. The older students did what it took to get an 'A' or 'E.' The (recent) students saw their work as more work rather than the work. I deal with words more than math, word definition, reality of words… It goes hand in hand with math…Students do not want to reduce the number. They consider that more work. I have students write fifty lines. "I will remember to reduce."

I am concerned that the students are not provided with a mathematics specialist with innovative teaching methods that would have students maintain grade level work or accelerate in mathematics similar to their peer group. These students sometimes suffered as a result of this practice of remediation. Instead, these students could use mathematics computer programs to learn how to problem solve and math drills to promote learning. In addition, students could be provided the opportunity to research a mathematics problem in the community and use the mathematics content and concepts for middle school mathematics to resolve the problem. This would provide the students with the critical thinking that they needed to advance in mathematics. This would also provide them the enriched mathematics experiences that other students were provided with in the school.

Baba Boipelo is much better at teaching reading, language arts and social science. Former students have stated that Baba Boipelo really assisted them with mastering their writing skills to prepare them for high school English class and college research papers. Maybe it would be preferable if Baba Boipelo would teach English and Social studies,

subjects that he is gifted in teaching, and leave the mathematics for Baba Ahmad and the remaining teachers at Kujichagulia School.

I know that Baba Ahmad could use his talents in teaching mathematics to underachieving mathematics students. This would provide all the students at Kujichagulia School a fair chance in mastering mathematics grade level appropriate content and concepts. I believe when master teachers such as Baba Ahmad worked with academically challenging students then he would develop the creative lessons needed to remedy any learning issues. I noted earlier that he stated, "I know the strengths and the weaknesses of the students who I teach. I can remedy any misconceptions in mathematics concepts and content." Therefore, I understand if Baba Ahmad taught these students, then he would know where the gaps in learning are and he would be able to teach the students so that they can excel. Consequently, they would enter Algebra with a stronger mathematics background. If Baba Ahmad could accept students who were over achievers in mathematics then he should be able to accept students who were underachievers in mathematics, also.

Summary

Teachers adhered to the pacing guide in all classes, even if they had to extend the instructional time by encroaching on a portion of breakfast time, lunchtime, recess, afterschool or special sessions. To ensure mastery, teachers checked for mastery of the content and concepts by checking frequently for errors and misconceptions. This is a practice that sets students up for success. Teachers reteach and check in the form of conversation, quiz or test to correct errors in students' work. Students knew that they must earn a grade of "A" or "B" to proceed to the following subject in the sequence. I

observed that students knew when they knew the content and they shared their information with other students. On the other hand, students knew when they did not understand the work and they asked essential questions that directed them to the correct response rather than just asking for the answers. The students had self-confidence and they were willing, ready and able to struggle and preserve through challenging content to achieve the goal of mastering the content.

Praise and positive encouragement are used at Kujichagulia School. Some teachers have found 101 ways to praise students to motivate them to strive for excellence. Staff talked about earning A's as akin to earning money because they are aware that if students maintained a GPA of 3.00 or better they will have access to reduced tuition or free private education at the high school level and the college level through grants and scholarships.

I observed that students walked around the school, talked about content area material and engaged in the lessons with a sense of self-pride. They acknowledged that they had an opportunity to learn at Kujichagulia School that many students in their communities outside of Kujichagulia School did not experience this privilege, and they were buoyed by the fact that they felt a sense of belonging to a group that strived for them to achieve excellences in all their work and/or task that they started.

CHAPTER V: CONCLUSIONS, IMPLICATIONS, AND LIMITATIONS

The previous chapters provided a clear explanation of the African-centered pedagogy, Nguzo Saba Principles, striving for excellence values and school practices that ensure the academic success of African American students at Kujichagulia School in East Oakland, California. The school's mission is to provide students with an understanding of African history throughout the African diaspora and develop Kujichagulia (self-determination) in each child that enters the school. The strategies used to accomplish this mission are to surround students with a school climate and culture that demonstrates and exhibits excellences in Africans and African Americans throughout the day. Teachers use examples from students' lives to explain the curriculum. They use culturally sustaining pedagogy to ensure that students understand the curriculum. This increases academic achievement.

Each morning students enter the schoolyard that has drawings of Egyptians and Africans at work during ancient times. The playground has climbing structures and urban garden where fruit and vegetables are grown for the children. Students walk into the school building to a nutritious breakfast, homework support and a place for parents, students, and teachers to gather before the day starts. This force of unity, Umoja, connects each student, parent and staff member to each other. Next, students move into their classrooms where they are greeted by the teacher at the door. Students are warmly welcomed into the classroom and directed to begin their prerequisite assignment, which helps to stimulate their prior knowledge. Then students put their supplies on their desks. Then they migrate to the school yard for a morning stretch or run around the block to increase their energy level. Next, they form a circle and pour water for libations followed

by the school pledge. The act of calling the ancestors provides students with the strength, focus, energy and support that are needed to assist learning throughout the day.

The first class of the day for all students in both elementary and middle school at Kujichagulia School is a ninety-minute mathematics class. The school was setup to provide students with an accelerated mathematics program to ensure their academic success in Algebra and Geometry at the completion of middle school, and this is reflected in the extra attention that math is given in the school day. The program leads students to mastery of Algebra and Geometry before they enter high school. Recall that Algebra is a gatekeeper class, and if students master Algebra in middle school then they are ready for more advanced mathematics in high school and college. The fear of mathematics is removed and mathematics becomes a game like chess to stimulate the mind.

Chapter II provided the reader with an overall view of African-centered pedagogy and culturally responsive pedagogy, and how it manifested itself in the school. The teachers through their own personal studies or/and collegial studies have provided themselves with knowledge of African and African American history. This knowledge of self and knowledge of African and African American history empowers the teachers to teach students daily about their African heritage as they teach other content areas. Teachers can describe the contributions of Africans and African Americans such as Imhotep contributions to medicine; Dr. Charles Drew contributions to the development of blood plasma and the storage of plasma; Dr. Ben Carson neurosurgeon who separated co-join twins and Dr. Mae Jemison first Black Astronaut, medical doctor and dancer. The classrooms are named after Africans and African Americans in history. In middle school Humanities classes, great African and African Americans are studied in class for example

"The Mis-Education of the Negro" by Carter G. Woodson. The book is about how African Americans are not educated in Eurocentric schools. The higher the degree that they earn; the more disconnected they are from their cultural roots. However, at Kujichagulia School, teachers have cultural competency and they build strong relationships and trust with each student in the school and give students opportunities to study and discuss challenging literature in school. This act builds self-esteem and provides opportunities for students to develop their voice for advocacy that they will need later, after they leave Kujichagulia School.

Consequently, teachers understand that students must be challenged with rigorous content in an engaging manner to motivate them to learn. The students are positioned in classes with curriculum and instructional practices that lead to academic success by direct instruction, guided practice and independent practice with many opportunities for the teachers to check frequently for understanding. The ninety minutes class time provided extended time for long wait times and many opportunities for students to demonstrate understanding of content area. Other schools can design a master schedule to provide all students with a ninety minute mathematics class at the beginning of the day. This provides students an opportunity to have a challenging class in the morning when they are awake and focus to learn.

At this school, students work in a communal manner that fosters the use of cooperative learning to develop mastery in the content area. The students, teachers and parents support each other and students are not in competition with each other. Students, who work with each other, learn that they can learn from each other, and support each other with academic and personal challenges. They co-construct their knowledge; this act

has roots in the African American community. They are a part of building a community of learners that can support them for a lifetime.

Students are provided with the technology such as laptops and Internet access to valuable information. Students learn a computer language that permits them to create animated figures that follow what they program them to perform and tally the information generated by the action figure movements. Students make use of projects and reports to demonstrate their knowledge in classes such as science, and they use technology to demonstrate knowledge of computer coding in animation class. This is very much in line with the Nguzo Saba principle of Kuumba, creativity. Other schools can ensure that each child is provided with their own personal computer; there are several textbooks and activities online to support students rather than students obtaining textbooks that are costly and become outdated quickly. Technology provides students with up-to-date information and access to peer reviewed information.

As Lee (1994) stated whatever time, energy or strategies are required to achieve success for these children will be marshalled. The staff at Kujichagulia School remains committed to their educational duties to ensure the success of all the students who attend the school. The teachers are conscious about what they intend to provide students socially and academically. To be successful, an African-centered pedagogy requires this type of teacher attitude (Lee, 1994). Asante, 2003; Asante, 1998; Murrell, 2002; Karenga, 2008; Ajirotutu, &, Pollard 2000; Cleveland & Shockley, 2011; Kunjufu, 1986 all agree that African-centeredness is the placement of African American people at the center of human process. Lee stated, “An African-centered pedagogy is needed to support a line of resistance to the imposition of Eurocentric biases. It is needed to produce an education

that contributes to achieving pride, equity, power, wealth, and cultural continuity for Africans in America and elsewhere" (Lee, 1994). Students understand that their acquisition of academic skills, personal skills and technical skills are vital to them and the community. This is what is occurring daily at Kujichagulia School.

The second is culturally-responsive pedagogy (Gay, 2010; Moses, 1994; Ladson-Billings, 2009). Culturally-responsive pedagogy emphasizes the importance of cultural connections in a curriculum that connects with and is relevant to students' lives (realia). The teachers at Kujichagulia School conduct their classes to connect students to the world around them. When teachers provide students with examples that they can relate to the students understand the content and are able to apply what they learn. When teachers respect for students' cultural heritage and families are demonstrated in the classroom, and seen as an asset then students' ability to develop self-esteem and self-pride needed to support self in the world that we live in improves, also (Alim, 2014 & Gay, 2010). The staff at Kujichagulia School is provided with opportunities to interact with the families of the students on a daily basis. The students are able to observe the relationship that staff have for their parents and caregivers. This reinforces the communal aspect of this school. When teachers and parents have time to positively interact with each other, there are more opportunities to build relationships. In contract, there are many middle schools that discourage parents from daily interactions with staff. This is contrary to the communal aspect of Kujichagulia School that values and honors the ability to build relationships with families and the school community.

The third is the mathematics instruction for African Americans and mathematics achievement for African Americans especially boys (Howard, 2013; Nasir, 2008;

Muhammad, 2003; Sampson, 2002; Moses, 1994). In this research learning is tied to a social and cultural contexts; learning is not just a cognitive process but a social cultural process. All the students at Kujichagulia School see themselves as members of a group who are excelling in academics and African and African American cultural awareness. This model can be provided at other schools, also. African American Male Achievement in Oakland public school has improved the cultural awareness of African American males; however, it has fallen short with mathematic achievement for African American males (Retrieved from Oakland Local, 2012).

The Nguzo Saba is a term popularized by Dr. Maulana Karenga. As part of Karenga's Kawaida philosophy, the Nguzo Saba are seven principles Umoja, Unity; Kujichagulia, Self-determination; Ujima, Cooperative Work and Responsibility; Ujamaa, Collective Economics; Nia, Purpose; Kuumba, Creativity; and Imani, Faith. The Nguzo Saba is most widely recognized in relation to the seven days of Kwanzaa (Karenga, 2008). The students at Kujichagulia School develop their self-determination skills by learning their African and African American history and using terms to express themselves in a positive manner. They demonstrate intelligence daily because it is encouraged and expected from each student. Other schools can work at halting negative talk, especially negative self-talk.

In chapter IV the reader is offered information about how teachers at Kujichagulia School ensure high expectations for all the students. Students are placed on an accelerated fast pace mathematics sequence of classes to ensure that students master college mathematics requirements in Algebra and Geometry prior to leaving Kujichagulia School. The teacher are able to connect with students frequently in the classroom by

checking for understanding and posing questions that lead the students to a better comprehension of the content to persevere and solve the problem. The students are in classrooms with engaging teachers who use activity based lessons. The students use manipulatives and demonstrate their understanding of mathematics content by solving problems and clearly explain their reasoning for the solution. Teachers in the earlier grades praise students frequently, when they complete their work without errors. Teachers choose students who need help to solve their problems on the board, and teachers provide students with extended time to demonstrate their knowledge. All students take quizzes and/or tests in mathematics on Fridays to demonstrate their mastery of the mathematics content area. Exemplary student work is posted in the hallways for students and community to observe. In addition, teachers reflect daily regarding the students' level of focus and motivation to engage in the lesson. These strategies are put in place to change the energy level of the class and the level of comprehension. Teacher use extended time to ensure mastery of the content. In addition, middle school teachers ensure that students are engaged and motivated to learn, using similar methods as the elementary school teachers, also. There is a pattern of teaching and learning at Kujichagulia School preschool to eighth grade that permeates throughout the school to increase students' cognition in all content areas.

Additionally, the reader is provided with the instructional tools that teachers use to demonstrate high expectations for all students. All teachers have high expectations for all their students. African-centered principles such as collectivity, engagement, sharing, and respect is encouraged and fostered (Sampson & Garrison-Wade, 2011). In addition, students work together as a team along with the teacher to learn the lesson. Academic

achievement and motivation improves significantly when protocols and procedures of teaching are synchronized with the cognitive abilities, physical and verbal style, ethnic frames of reference, and African-centered principles for African American children (Gay, 2010). The African-centered pedagogy and culturally responsive pedagogy process, couple with the basic premise that African American students are valued, intelligent, and can and must succeed has a significant impact on African American achievement. The students at Kujichagulia School are valued in the educational process; culturally responsive experiences connect students to their cultural self and they are motivated to reach their full potential by improving their cognitive skills and academic skills. Therefore, there is an increase in their engagement and academic performance in subjects like mathematics and science and other core content areas (Covington & Clarkson, 2005; Johnstone & Clarkson, 2011).

Black students need to know that they are part of the African Diaspora; they come from a powerful, creative, intelligent and compassionate group of people. In addition, Black students need to know that they can master any content that they are taught and they learned; and they can develop the attitudes and skills that uplift themselves and their race. Additionally, the Nia Church and Kujichagulia School community has provided safe places that they control and provide opportunities for Black community to interrupt the failure of Black students, especially boys. Other schools large or small can commit to teaching students and refrain from training students who have the capacity to think critically and have agency, particularly students who are college bound and/or work bound.

Teachers are more successful when they teach new concepts and modify the lesson to make the connection, making meaning of the content and its relation to the real world (Nasir, 2008; Nasir, 2002; Moses, 1994). When there is an effective effort by teachers and students to interrupt the failure of diverse students in schools, then students succeed in academics (Martin, 2009) and other areas. In addition, students develop the ability to self-motivate, self-focus, self-discipline, self-monitor and self-correct which leads to self -determination. When students have opportunities to be mentored and provided with internships, they can develop life skills that encourage independence and self-determination.

The common way of addressing all adults as Baba or Mama is a respectful manner for all students to approach adults. This permits students to demonstrate that they have respect for their elders which is a powerful source of energy to promote learning for the day. Students demonstrate respect for their teachers. The calling on the ancestors through pouring libations supports students and staff throughout the day. This act alone reminds students that they can work effectively to achieve greatness because they stand on the shoulders of great ancestors. This also provides students with a tool for self-pride, high expectation and self-determination at the beginning of the day. Many schools could just decide to start every Monday with a call to ancestors or people who energize them.

Maintaining a safe, supportive, academic and productive climate is achieved by the call and response method to bring the class to order. Many students have experienced this method to call students to order. The students realize that the level of noise is not conducive to learning and it must be reduced. They signal that they are ready to learn by this method. There is no need for put downs or angst with this method to calm students.

Consequently, students can demonstrate engagement, focus on task (work) and content driven critical thinking discussions, manipulations and calculations. Some schools use hand signals or a counting system (5, 4, 3, 2, and 1) or a clapping signal (if you can hear my voice clap one time, if you can hear my voice class two times) to bring students to order in a non-threating manner.

At Kujichagulia School when students violate the school rules and values they are held accountable to the community of the school. The director of the school, staff, students, parents and community people gather with the students who violated a rule or trust are held accountable to the group. They must stand in front of the group explain what happened and hold themselves accountable to the group and atone for their violation of trust. This act lets students know that they are part of a group. The group has been violated because of their poor decision making. Now the student must participate in a restorative justice process. Several schools have conflict mediation and restorative justice practices that lead to solving problems in a civil manner that leads to personal growth and a sense of belonging to a large group. This also builds a strong relationship with all the parties involved. Some schools have students participate in a fire walk or ceremony around a camp fire to atone for their misgivings so they can move to the next level in their lives' example personal growth or academics college/university.

The present Kujichagulia School was created to be a college preparatory school. The director of the school decided that accelerating students in mathematics provided an opportunity for students to excel in a challenging subject. Baba Ahmad provided summer orientation support in mathematics to remediate any prerequisite skills that had not reached the level of mastery. He created an engaging summer camp school with an

emphasis on mathematics. Students are accelerated one to two grades ahead to ensure that all high school mathematics requirements can be completed prior to entering high school. The teachers and students had extended time for mathematics during school and afterschool. Many school sites have extended time for mathematics. However, few school sites can take regular students and accelerate them at such an early grade, Kindergarten in elementary school. The practice of having long wait times, frequently checking for understanding and exit tickets provide the teachers with tools to ensure all the students are learning. There are many schools that have a class size of twenty or less which provides teachers frequent opportunities throughout the class period to have one to one contact with students and some schools have ninety minutes blocks and double periods at the secondary level. This can be implemented in small schools or academies to ensure the academic success of all students.

Kujichagulia School has a strong community support with the girl's health class that provides girls with access to female community leaders that instill positive peer relationships, self-esteem building, thinking big opportunities and plans for success. The Kujichagulia School girls are encouraged to reduce the drama and bring calm and thoughtfulness to the groups and create a cycle of goodness that leads to increase opportunities for themselves. Students are encouraged to give themselves positive self-talk. Therefore students learn to work effectively to accomplish their goals and guarantee success. Female students see other female students as a source of empowerment and scholarship rather than competition. A powerful girls group can be imported into schools to encourage girls to support each other in their daily routines. The group must work on the social emotional standards not just the academic standards of achievement.

The reader is provided with cultural activities that lay a foundation for understanding self and building self-determination through being able to identify oneself. Cultural celebrations provide students and staff opportunities to share their cultural values, dances, spoken words, raps, and academic achievements with the community often, Alim (2014). There are no Heroes and Holiday celebrations that stand alone at Kujichagulia School. Learning about African and African American culture is a daily experience that up lifts all the staff and students daily. The mission of Kujichagulia School is to build self-determination and the practice is full filled daily.

Baba Afolabi the minister of the church associated with the school states that a good school and good education will provide the following: 1. Construct an authentic identity; 2. Legacy of excellence; 3. Immune from dis-ease; 4. Vision for the future; and 5. Loving and managing your emotions (Think before you act.) define who you are and demonstrate self-determination. Teachers in other schools can arrange for the incorporation of culture and history that is multiethnic and incorporate activities that promote several cultures in the school curriculum throughout the year. Staff can encourage the families and community members to share their culture in a significant manner maybe a monthly event or share in a unit from humanities curriculum or science and mathematics curriculum or the Language Arts curriculum. This reality empowers student of various ethnic groups and provides knowledge about other groups to build knowledge from other ethnic groups. This provides peers with the knowledge that all groups have something of value to offer society in all the academic content areas (Alim, 2014). Students at local secondary public schools can use academy time to teach or help

out at the local elementary school. Terms like outside work experience, OWE, and internships are other terms used in Oakland public school that serve this same purpose.

Nasir defines culture as the thoughts, values, beliefs, rituals and practices of a people. Culture must be honored and respected for students to develop self-esteem and self-pride needed to support self in the world that we live in. Social emotional needs of students must be met for students to succeed. The new social and emotional standards for the local public school meet some of the criterion needed to support students emotionally that leads to academic achievement in school (Office S.E.L., 2013). All knowledge is connected to cultural experiences in the social and cultural world (Nasir, 2008).

Teachers are poorly prepared when they confront diversity if they are not culturally competent stated hooks (1994) … (teachers can) create teaching strategies that would make a space for multicultural learning, I found it necessary to recognize…cultural codes. To teach effectively a diverse student body, I have to learn these codes. And so do students. This act alone transforms the classroom. The sharing of ideas and information does not always progress as quickly as it may in more homogeneous settings. Often professors and students have to learn to accept different ways of knowing, new epistemologies, in the multicultural setting (p. 41). In other school sites that have a diverse population staff can learn the cultural codes that permit students to feel comfortable and safe in a classroom. The students should be able to ask for assistance, ask essential questions, and offered time to complete their work. Students should engage in higher order questioning to learn how to evaluate, analyze and synthesize information. Teachers can provide students with rigorous content material and the extra support to succeed. After school student support groups in school or at the local

colleges/universities provide the extra support needed by some students to reach their full potential. At a recent conference for African American male Achievement the panel of African America, Latino and Pacific Islander male youth stated that these afterschool and extra programs are in existence throughout secondary schooling and they are the reasons for the success of many students. The sense of belonging is essential for teaching and learning to succeed (Steele, 2010).

It is important for African American students to develop an African identity because the characteristics of an African identity benefits students and promotes pride in African and African American culture. African-centered education is holistic, meaning that the students are involved in cross discipline learning, meeting state core curriculum goals and guidelines, critical and creative thinking, self-concept development, character development and moral education. African American students are exposed to a worldview experience that relates to all people, cultures, and traditions from the context of their reality which enhances their own self-esteem, positive self-imaging and higher standard of education excellence (Noble, 1996). Therefore, African-centered education is an approach which celebrates the culture, heritage, contributions and tradition of all humans (Karenga, 2008). Other schools private and public can set programs in place that provide students with knowledge of their culture, heritage, contributions and traditions from their ethnic groups. Many small charter schools are designed to support students who are not supported in the mainstream schools. They have cultural symbols throughout the school and have several culture practices that are non-European incorporated into their school plan.

The characteristics of African-centered education that furthers the understanding in mathematics and science are that African American students have self-confidence; they feel empowered and motivated to learn the lesson. Furthermore, effective teachers create school cultures that counter the influence of gangs and affirm the importance of learning (Noguera, 2008). They also create classrooms with many opportunities for students to learn and they have high expectations for all students. Noguera's research in these schools showed that strong, positive relationships between teachers and students are critical to academic success. It is important to provide a personalized learning environment with mentors, counseling, and other supports that provide an opportunity to intervene early and effectively when problems begin. Consequently, these schools have strong and effective school leaders but that does not mean they are authoritarian and intimidating. Students want to build positive relationships with their teachers. They want a social, academic not necessarily friend relationship with adults. Students want school directors, principals and school leaders to act more like father figures or big brother. Students reported that principals like David Banks at Eagle Academy and Tim King at Urban Prep in Chicago another urban high school with high graduation rates are regarded more like big brothers and father figures (Noguera, 2008). There are several schools, in the local public school system, that are succeeding due to leaders who are warm demanders with high expectations for all students.

Teachers are more successful when they teach new concepts and modify the lesson to make the connection, making meaning of the content and its relation to the real world (Nasir, 2008, Moses, 1994). When there is an effective effort by teachers and students to interrupt the failure of diverse students in schools, then students succeed in

academics (Martin, 2009) and other areas. In addition, students should develop the ability to self-motivate, self-focus, self-discipline, self-monitor and self-correct, also. Other school sites can develop programs that are similar to this school. The importance of creating curriculum that connects to students in the realia (real world) is vital to transform average schools in to schools that require lessons that are engaging and motivate students to strive for mastery in all their subject areas. There are several local schools where there are three grades A, B and F. Students are not able to move forward in the content area until they demonstrate mastery. Many schools that follow this pattern have mastery exams that permit students to demonstrate skills by units. If they fail to master a unit then they are encourage to repeat that unit not the whole class. This can occur in small schools and it may be perfect for academies (school within a school with a specific content Health Academy, Engineering Academy, Computer Academy and more).

Conclusions

My aim in this work was to explore how teachers with high expectations for their students engage and motivate them to strive for excellence to learn rigorous academic content especially mathematics. What does an African-centered education and culturally responsive instruction look like or offer to students, and how might this apply to the diverse group of students in a typical mathematics classroom? What are the instructional strategies and practices of each teacher in Pre-Kindergarten through 8th grade that supports the academic success of each student?

I drew on three core concepts in this research: African-centered education and culturally responsive pedagogy; curriculum and instruction with extra attention given to mathematics pedagogy; and striving for academic achievement for African American

students. Together, these core concepts enabled African American children to know their history and to strive for and achieve excellence in academics, especially mathematics.

The literature suggests that African Americans have strived to improve educational opportunities for African American students. African-centered education promotes learning of history that benefits students of African descent. When teachers use culturally responsive pedagogy they are able to relate to students and demonstrate respect for students' culture. The culturally responsive pedagogy is used at an African-centered school because all the students are of African descent. When students learn about their culture, they are respected along with their history. Students who learn about their identity improve their opportunities to learn; it is a source of strength that they learn and have the knowledge to defend.

In mathematics, students are expected to acquire knowledge and apply the knowledge that they are learning. Students are not expected to just regurgitate a lesson without interpreting the information in a practical manner. The technological world where information is at their fingertips precludes the need to memorize information. Therefore, students create new knowledge and interpret systems. The ability to do so and to think critically is essential to making good decisions.

It is important for students to learn about the achievements of their cultural groups in the arts, science, mathematics, technology, athletics and entertainment fields. When students see their cultural group they feel proud of their heritage. As a result of this cultural pride, they are able to see themselves in the success of others in their cultural group. Then they can visualize success in any task or work that they seek to initiate or master.

Written communication, holding students accountable for their actions, relationships, extended schedules, small class sizes, teacher professional development, looping, community celebrations, provided the elements that gave a foundation to each member of the staff and community to better educate the students. The flexible schedules and small class sizes gave teachers and students multiple opportunities to connect with each other inside and outside of the classroom throughout the day to ensure understanding of the content and concepts that lead to excellence in academics. The practice of looping, again, offered opportunities for teachers to connect with students and encourage belonging that promoted high expectations and commitment to learning by teachers and students.

In addition, the support of the community in the classroom was a source of wisdom, knowledge, access to skills and opportunities to enhance the learning of each student in the school. Hence community provided the funds to assure building repairs, equipment, college tours, educational and academic supplies and technology that support the academic mission of the school. Recall, the mission of Kujichagulia School is to sustain an educational institute in the best traditions of African and African American ancestors. The school promised to give birth to the genius resident in each child and Kujichagulia School lives up to its mission.

In conclusion, this school struggles like many other schools with accelerating student in mathematics verses remediating students in mathematics. Students who are accelerated in mathematics can take advantage of courses and curriculum in high school and college that student who are not accelerated in mathematics cannot experience. This leads to some limitation of opportunities at the higher levels for some students in regards

to mathematics, science and engineering courses. When schools struggle with funding to maintain and repair the school building is extra time and money better spent with students to increase their mathematics level to accelerate them by one or two grade levels prior to entering high school? Or should this school just ensure that all students are able to master the content and skills of sixth grade mathematics, seventh grade mathematics and Pre-Algebra and of course the other subjects? This would permit students who come from OUSD or other outside of the school to participate and benefit from the rich African-centered cultural environment of the school; rather than find themselves in a remediation class because in this school the students start middle school with Algebra rather than sixth grade mathematics. The school enrollment could increase if it was marketed as an African-centered school. However, the Director of the school believes that the college preparation of African American students in the schools improves its ability to attract and maintain more students. I was told that when students attended the summer mathematics enrichment camp then students were recruited to the school as regular students.

Here is another dilemma regarding community in the classroom and school building. My work as an administrator and teacher gives me an insight into the benefits of having the community in the classroom. When a school has a strong philosophy regarding how schools should function regularly, it is a challenge to bring in the public. The public must be well aware of the school policies, mission statements and school wide expectations so they can enhance the school program and bring money, expertise, and other talents to encourage students. Sometimes, when community is brought into the school, they bring habits that are not encouraged at the school. They have to be monitored; this does not assist a school to move students forward socially or

academically. However, when the community is an authentic part of the school such as with Kujichagulia School, then they enhance and enrich the school and bring funds, expertise, skills and knowledge that promote academic success.

Other struggles and dilemmas with pacing guides verses teacher creativity is that curriculum success needs a foundation to build on. When teachers follow pacing guides the following teacher in the course sequence has an expectation that students have mastered the previous content and are prepared for the new content. Then teachers can build more advanced mathematics skills and they can master the new standard and new content. Creativity in the lesson is good to engage students but there should be a commitment to follow the pacing guide and that is a dilemma for many schools, school staff and school administrators.

Finally many schools struggle with the consistency of the staff members (maintaining staff) in the regular program and after school program. When schools function to improve student outcomes, then the program must be structured to maintain a level of academics regardless of the staff. However, relationship building takes time and consistency is vital for all students to succeed academically. This is a major dilemma in many schools.

Kujichagulia School practices corporal punishment with parent permission. Is this the key to maintain behavior? I do not believe that to be true because corporal punishment is rarely used at the school. Modeling of proper or expected behavior is more in line with what this school delivers. We all know that focus and discipline must be expected if students are to succeed. However students must be engaged in the lessons and motivated to succeed to reach their full potential. Even if Kujichagulia School falters the

students will leave the school at grade level in all subjects and they will all have cultural enrichment that gives them self-pride and self-determination. This is the real benefit about African-centered school that practice culturally responsive pedagogy and ensure the academic success of African American students.

Limitations

The observations of eight teachers at one African-centered school can only really tell us about that school; this is a specific small school with a whole philosophy, and so there are limits to what we can generalize to what other teachers can do. However, we can still learn a great deal about teaching African American children from this school and these teachers.

In addition, I have my own biases and beliefs. My son attended this school and I chose to study it because I believe it is an excellent school. To address this, I used the California standards for the teaching profession to guide my observations in order to keep my biases and beliefs in check (see Appendix C and Appendix D). I have extensive experience observing teachers with these tools, having used it through nine years of mentoring and supervising teachers in California public schools.

The limitations of this study is this site is a small independent African-American centered school with a small staff and only approximately 100 students. The observations of eight teachers at one African-centered school can only tell us about that school; this is a specific small school with a whole philosophy, and so there are limits to what we can generalize to what other teachers can do. However, we can still learn a great deal about teaching African American children from this school with these teachers. The school practices and the development of self-determination are the foundation pieces that can be

transported to other schools in whole or in part to establish high academic standards in all content areas as I discussed in the previous section. I consider Kujichagulia School is an excellent school for African American students, especially males to establish themselves and build the skills to master the various content areas in the upper grades.

In addition, I used the California standards for the teaching profession to guide my observations in order to keep my biases and beliefs in check (see Appendix C and Appendix D). I have extensive experience observing teachers with these tools, having used it through nine years of mentoring and supervising teachers in Oakland, California public schools.

Implications

The implications regarding this research is that school climate and culture set the tone and expectation for all students in the building. When students and staff are respected and valued each contribute to the success of the students and school programs with strong support inside the school (staff) and outside (family and community). Students need to be able to identify who they are and be empowered to develop agency for themselves.

The start of the school day needs to focus and center students. Students should understand that their job of educating themselves is beginning. All their decisions of the day to ensure their academic achievement rest on the belief that their ability to stay on task, ask questions, remain engaged and motivated determines their success in all content areas. Students who work effectively succeed with teachers who are culturally competent and expect their success.

The placement of mathematics at the beginning of the day is crucial. Especially when the first thirty minutes of the day is a run or a routine that prepares students to learn. The most challenging class is provided to students when most students have the most energy to focus, pay attention and stay on task. Students can be provided with the mathematics academic competence in a conscious African-centered environment rather than a public school that struggles to increase the proficiency rate in core mathematic classes (Algebra, Geometry, Intermediate Algebra and Advanced Algebra Trigonometry). Students who leave Kujichagulia School are successful because they are culturally aware and at two grades ahead in mathematics or at least at grade level in mathematics with a built in self-esteem, self-determination and self-pride that will assist them in their future.

It is important for students to have extended time to think critically, experience guided practice and independent practice. Teachers who check for understanding frequently throughout the lesson are better prepared to comprehend where students are in the learning cycle (engagement, connect what students know and can do; explore, hands on activities with guidance; explanation, explain their understanding through reports and presentations; elaboration, apply the concept in context and evaluate, assess their knowledge skills and abilities through projects, report, assessment tool tests and quizzes).

In addition, cooperative learning is a communal process to learn and is beneficial to many students rather than working independently. In addition, technology must be used in modern classes to prepare students for the real world.

Belonging is an essential part of this school. Students feel as if they are members of a team; the staff is the leader of the team and they ensure that all students feel

connected to school through common routines and practices. There is success for all, students, staff, parents and community.

The students are being prepared to leave the school with personal and social skills that keep the focus on their goals when they enter into environments that are not nurturing. I would like to have Kujichagulia School increase its population to two hundred or three hundred students. The same school practices and culturally enriched programs could be replicated in the three different parts of Oakland (North, West and East Oakland). The seven principles of Nguzo Saba and the philosophy of Ma'at can be implemented in each school.

There would have to be a criterion for having teachers who are culturally competent and teachers can study African and African American studies courses that are provided at the local community college. Teacher should have one or more of the following majors: psychology, mathematics, science, computer technology and or foreign language (Spanish). These disciplines provide the teachers with academic tools and content to increase students' consciousness regarding culture.

The school leader and staff can create at least three K-8 Kujichagulia Schools to serve some of the African American students in Oakland public schools. Since there are 36,180 students and over 30% are African Americans (Blacks) who represent 12,000 African Americans (Blacks), it is vital to accommodate at least 1000-2000 African American students in the local area. Academic excellence is necessary to maintain hope for African American students in the local area. Kujichagulia School provides hope for many African American families in Oakland, California.

REFERENCES

African Centered Education Task Force of Kansas City Missouri. (2013). Retrieved from http://www.duboislc.org.

Ajirotutu, C. & Pollard, D. (Eds). (2000). *African-centered schooling in theory and practice.* Westport, CT: Bergin & Garvey.

Alim D.P. (2014). What are we seeking to sustain through culturally sustaining pedagogy? A loving critique forward. *Harvard Educational Review,* 85-100

Analysis, Measurement and Accountability Reporting Division District, School, and Innovation support Branch. (2012, July 1). *Academic Performance Index (API) California Department of Education*. Retrieved May 1, 2012, from API California Department of Education: http://api.cde.ca.gov

Asante, M. K. (1998). *The Afrocentric idea.* Philadelphia: Temple University Press.

Asante, M. K. (2003). *Afrocentricity: The theory of social change.* Chicago, Il: African American Images.

Cleveland, D. & Shockley, K. (2011). Culture, power, and education: The Philosophies and pedagogy of African centered educators. *International Journal of Critical Pedagogy*, 3(3), 54-74.

Coleman, D. & Zimba, J. (2010, August). *Common Core State Standards California Adopted by the California Board of Education August 2010 and modified January 2013*. Retrieved January 7, 2014, from Common Core State Standards California: http://www.cde.ca.gov/ be/st/ss/documents/ccssmathstandardaug2013.pdf

Covington & Clarkson, L. (2005). Mathematics leadership needed to close achievement gaps:A commentary in a critical issue in mathematics education. *Journal of Mathematics Education Leadership, 8*, 4-5.

Darling-Hammond, L. (2010). The flat world and education: How American's commitment to equity will determine our future. New York: Teachers College Press.

Delpit, L. (1995). Other people's children cultural conflict in the classroom. New York: The New Press.

Delpit, L. (2012). Multiplication is for white people raising expectations for other people's children. New York: The New Press.

Doming, J. (2013). *Impact of Guest Worker Visas on African STEM Workers.* Washington D.C.: Department for Professional Employees, AFL-CIO.

Education, C. D. (2012). *2012 Federal AYP and PI*. Retrieved 2011-2012, from http://api.cde.ca.gov.

Freire, P. (1998). *Pedagogy of the oppressed.* New York: Continuum.

Freire, P. (2006). *Pedagogy of the oppressed.* New York: Continuum.

Gay, G. (2002). Preparing for culturally responsive teaching. *Journal of Teacher Education, 53*, 106-114.

Gay, G. (2010). *Culturally responsive teaching theory, research, and practice* (2nd ed.). (J. A. Banks, Ed.) New York: Teachers College Press.

Grady, B. (2012, 10 12). *Oakland Local*. Retrieved November 15, 2013, from 34 Oakland kids awarded for Perfect CA standardized test scores: http://oakland local.com/article/34-oakland-kids-awarded-perfect-ca-standardized-test-scores

Great Schools Staff. (2010, January). *Why is Algebra so important?* Retrieved November Saturday, 2013, from Great Schools: www.greatschools.org/print-view/students/academics-skills/354-why-Algebra.gs?fromPage=3

hooks, b. (1994). Teaching to transgress:Education as the practice of freedom. New York: Routledge.

Howard, T. C. (2013, March). How does it feel to be a problem? Black male students, schools, and learning in enhancing the knowledge base to disrupt deficit frameworks. *Review of Research in Education, 37*, 54-86.

http://oakland local.com/article/34-oakland-kids-awarded-perfect-ca-standardized-test-scores. (2012, 10 12). Retrieved from Oakland Local.

http://publicportal.ousd.k12.ca.us/1994101028165242953/site/default.asp. (n.d.).

Johnstone, L. M. & Clarkson (2011). When the African-centered paradigmis not enough: Lessons from an urban charter school. *The Journal of Negro Education, 80*(2), 108-120.

Johnson, K. & Wilson, J. (2012). Supporting African American student's learning of mathematics: A problem of practice. *Urban Education*, 354-398.

Karenga, M. (2008, November). The moral anthropology of Marcus Garvey: In the fullness of ourselves. *Journal of Black Studies, 39*(2), 166-193.

Khan, S. (2012, September). *Khan Academy*. Retrieved 2012, from Khan Academy: www.khanacademy.org/math/alg

Kunjufu, J. (1986). *Motivating and preparing Black youth for success.* Chicago, IL: African American Images.

Ladson Billings, G & Tate IV, W.F. (1995). Toward a critical race theory of education. *Teacher College Record, 97*(1), 47-69.

Ladson-Billings, G. (1992). Liberatory consequences of literacy: A case of culturally relevant instruction of African American students. *Journal of Negro Education, 61*(3), 378-391.

Ladson-Billings, G. (1994). The Dreamkeepers: Successful teachers of African American Children. San Francisco: Jossey-Bass.

Ladson-Billings, G. (1995). Toward a Theory of Culturally Relevant Pedagogy. *American Educational Research Journal*, 465-491

Ladson-Billings, G. (2009). The Dreamkeepers: Successful teachers of African American Children. San Francisco: Jossey-Bass.

Lee, C. (1994). African-centered pedagogy: Complexities and possibilities. In M. J. Shujaa (Ed). *Too much schooling too little education: A paradox of black life in white societies* (pp.295-318). Trenton, New Jersey: African World Press, Inc.

Madhubuti, H. &. Madhubuti, S. (1994). African-centered education: Its value, importance, and necessity in the development of Black children. Chicago, IL: Third World Press.

Martin, D. (2009). Mathematics teaching, learning, and liberation in the lives of Black children. (D. B. Martin, Ed.) New York: Routledge.

Martin, D. B. (2000). Mathematics success and failure among African American youth-The roles of social historical context community forces, school influence, and Individual agency. Mahwah, New Jersey: Lawrence Erlbaum Assoicates.

Martin, D. B. (2007). Beyond missionaries or cannibals: Who should teach mathematics to African American childen? *High School Journal, 91 (1)*, 6-28.

Milner, H. R. (2011). Culturally relevant pedagogy in a diverse urban classroom. *Urban Review, 43*, 66-89.

Muhammad, S. (2003). *How to teach math to Black students.* Chicago, IL: African American Images.

Moses, R. (1994). The Algebra Project: Organizing in the spirit of Ella. *CPN*, 497-519.

Murrell, P. C. (2002). African-Centered pedagogy: Developing schools of achievement for African American children. New York, NY: State University of New York Press.

Nasir, N. & Cooks, J. (2009). Becoming a hurdler:How learning settings afford identities. *Anthropology & Education Quarterly, 40*(1), 41-61.

Nasir, N. (2008). Culture and mathematics in school: Boundaries between 'cultural' and 'domain' knowledge in the mathematics classroom and beyond. *Review of Research in Education, 32*(1), 187-240.

Nasir, N. (2002). Identity, goals, and learning: Mathematics in cultural practice. *Mathematical Thinking and Learning, 4(2-3)*, 213-247.

Nasir, N. S. (2011, February March). On defense: African American males making sense of racialized narratives in mathematics education. *Journal of African American Males in Education, 2*(1), 24-45.

National Governors Association Center for Best Practices Council of Chief State School Officers. (2010, July 1). *Common Core State Standards Mathematics*. Retrieved

November 30, 2013, from http://www.corestandards.org/Math/Content: http://www.corestandards.org/Math/Content

Noble, W. (1996). *The seven cardinal virtues of Maat and the development of student character.* Oakland: Center for Applied Culture and Educational Achievement.

Noguero, P. (2008). The trouble with black boys and other reflections on race, equity, and the future of public education. San Francisco, CA: Wiley & Sons.

Office, S. E. L. (2013, 10 23). Oakland Unified School District Social and Emotional Learning Standards. Retrieved 11 29, 2014, from Social Emotional Learning and Leadership Development Office/Overview: www.ousd.k12.ca.us/Page/10933

Paul, R. (2007). The 27th Annual International Conference on Critical Thinking. *Critical Thinking in Every Domain of Knowledge and belief*, (pp. 1-8). Berkeley,CA.

Peterson, P. E. (2011, 08 19). With a Math Proficiency Rate of 32 Percent, U.S. Ranks Number 32. *Education Next*, 1.

Project SEED. (2012). Retrieved from http://projectseed.org.

Sampson, W. A. (2002). Black student achievement: How much do family and school really matter? Lanham, Maryland: Scarecrow Press.

Sampson, D. & Garrison-Wade, D. (2011). Cultural vibrancy: Exploring the preferences of African American children toward culturally relevant and non-culturally relevant lessons. *Urban Rv, 43*, 279-309.

Steele, C. M. (2010). Whistling vivaldi: How stereotypes affect us and what we can do. New York: W.W. Norton & Company.

APPENDIX A: MATHEMATICS CURRICULUM

Mathematics common core curriculum is curriculum designed to ensure that there will be common core content established for each subject taught in the mathematics curriculum. Teachers will be entrusted to teach common core standards; this will provide teachers in the vertical sequence of mathematics courses to know what students are expected to know and understand in the content area. Students will be tested at the department level, district level and state level. The results of these examines will provide teachers important information about each individual students mastery and proficiency in content area mathematics skills and mathematics content.

For students to achieve in mathematics the most important concepts that they must demonstrate proficiency are the following according to subject matter. The most important concepts of mathematics achievement are the following for grade 6 mathematics:

1. Students must understand ratio concepts and use ratio reasoning to solve problems.
2. Students must be able to apply and extend previous understandings of multiplication and division to divide fractions by fractions; students must multiply and divide multi-digit numbers and find common factors and multiples; next students must apply and extend previous understandings of numbers to the system of rational numbers.
3. Students must be able to apply and extend previous understandings of arithmetic to Algebraic expressions; students must be able to reason about and solve one-

variable equations and inequalities and next students must represent and analyze quantitative relationships between dependent and independent variables.

4. Students must solve real-world and mathematical problems involving area, surface area and volume.
5. Finally sixth grade mathematics must provide students with opportunities to develop understanding of statistical variability and students must learn to summarize and describe distributions.

Teachers must have mathematical practices that allow students to demonstrate the following skills:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularly in repeated reasoning.

In grade 6 mathematics classes, instructional time should focus on four critical areas: (1) connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems; (2) completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers; (3) writing, interpreting, and using expressions and equations; and (4) developing understanding of statistical thinking.

The most important concepts of mathematics achievement are the following for grade 7 mathematics:

1. Students must be able to analyze proportional relationships and use them to solve real-world and mathematical problems.
2. Students must be able to apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.
3. Students must be able to use properties of operations to generate equivalent expressions; and students must be able to solve real-life and mathematical problems using numerical and Algebraic expressions and equations.
4. Students must be able to draw, construct and describe geometrical figures and describe the relationships between them; next students must solve real-life mathematical problems involving angle measure, area, surface area and volume.
5. Students must be able to use random sampling to draw inferences about a population; then students must draw informal comparative inferences about two populations. Next students must investigate chance processes and develop, use and evaluate probability models.

Teachers must have mathematical practices that allow students to demonstrate the following skills refer to grade 6 mathematical practices.

In grade 7 mathematics classes, instructional time should focus on four critical areas: (1) developing understanding of and applying proportional relationships; (2)

developing understanding of operations with rational numbers and working with expressions and linear equations; (3) solving problems involving scale drawings and informal geometric constructions and working with two- and three- dimensional shapes to solve problems involving area, surface area, and volume; and (4) drawing inferences about populations based on samples.

The most important concepts of mathematics achievement are the following for grade 8 mathematics:

1. Students must be able to know that there are numbers that are not rational, and approximate them by rational numbers.
2. Students must be able to work with radicals and integer exponents.
3. Students must be able to use properties of operations to generate equivalent; and students must be able to understand the connections between proportional relationships, lines, and linear equations; next students must analyze and solve linear equations and pairs of simultaneous linear equations.
4. Students must be able to define, evaluate, and compare functions; and use functions to model relationships between quantities.
5. Students must be able to understand congruence and similarities using physical models, transparencies, or Geometry software; then students must be able to understand and apply the Pythagorean Theorem. Next students must solve real-world and mathematical problems involving volume of cylinders, cones and spheres.

Teachers must have mathematical practices that allow students to demonstrate the following skills refer to grade 6 mathematical practices.

In grade 8 mathematics classes, instructional time should focus on three critical areas: (1) formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations; (2) grasping the concept of a function and using functions to describe quantitative relationships; and (3) analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem.

The most important concepts of mathematics achievement are the following for high school mathematics Number and Quality:

1. Students must be able to extend the properties of exponents to rational exponents and classify numbers as rational or irrational.
2. Students must be able to reason quantitatively and use units to solve problems.
3. Students must be able to perform arithmetic operations with complex numbers; and students must represent complex numbers and their operations on the complex plane; next students must use numbers in polynomial identities.
4. Students must be able to represent and model with vector quantities; and perform operations on vectors; next perform operations on matrices and use matrices in applications.

The most important concepts of mathematics achievement are the following for high school mathematics Algebra:

1. Students must be able to interpret the structure of expressions and write expressions in equivalent forms to solve problems.
2. Students must be able to perform arithmetic operations on polynomials; and understand the relationship between zeroes and factors of polynomials; next, use polynomial identities to solve problems.
3. Students must be able to create equations that describe numbers or relationships.
4. Students must be able to understand solving equations as a process of reasoning and explain the reasoning; solve equations and inequalities in one variable; and solve systems of equations; next represent and solve equations and inequalities graphically.

The most important concepts of mathematics achievement are the following for high school mathematics Functions:

1. Students must be able to understand the concept of a function and use function notation; and interpret functions that arise in applications in terms of the context; next analyze functions using different representations.
2. Students must be able to build a function that models a relationship between two quantities; and build new functions from existing functions.
3. Students must be able to construct and compare linear and exponential models and solve problems; and interpret expressions for functions in terms of the situation they model.

4. Students must be able to extend the domain of trigonometric functions using the unit circle; model periodic phenomena with trigonometric functions; next prove and apply trigonometric identities.

The most important concepts of mathematics achievement are the following for high school mathematics Geometry:

5. Students must be able to experiment with transformations in the plane; understand congruence in terms of rigid motions; prove geometric theorems and make geometric constructions; understand similarity in terms of similarity transformations; prove theorems involving similarity; and define trigonometric ratios and solve problems involving right triangles; next apply Trigonometry to general triangles.
6. Students must be able to understand and apply theorems about circles; and find arc lengths and area of sector of circles.
7. Students must be able to translate between geometric description and the equation for a conic section; next use coordinates to prove simple geometric theorems algebraically.
8. Students must be able to explain volume formulas and use them to solve problems; and visualize relationships between two dimensional and three dimensional objects
9. Students must be able to apply geometric concepts in modeling situations.

The most important concepts of mathematics achievement are the following for high school mathematics Statistics and Probability:

1. Students must be able to summarize, represent, and interpret data on a single count or measurement variable; and summarize, represent, and interpret data on two categorical and quantitative variables; next interpret linear models.
2. Students must be able to understand and evaluate random processes underlying statistical experiments; and make inferences and justify conclusions from sample surveys, experiments and observational studies.
3. Students must be able to understand independence and conditional probability and use them to interpret data; and use the rules of probability to compute probabilities of compound events in a uniform probability model.
4. Students must be able to calculate expected values and use them to solve problems; and use probability to evaluate outcomes of decisions.

All high school mathematics teachers must have mathematical practices that allow students to demonstrate the following skills refer to grade 6 mathematical practices (National Governors Association Center for Best Practices Council of Chief State School Officers, 2010).

APPENDIX B: TEACHER INTERVIEW QUESTIONS

The teachers' educational background:

1. What were your own educational experiences in elementary and middle school? What about high school?
2. How did you decide to become a teacher? What drew you in this direction?

Their journey to an African-centered school:

1. How did you come to be teaching at an African-centered school?
2. Where did you learn about African history and culture? What was your journey to an African-centered school?

Curriculum and Instruction

1. How do you see the mathematics curriculum structured at this school?
2. Is that different from other schools in which you have taught?
3. What is the thinking behind the mathematics curriculum you are delivering at (the age of child you are working with)?
4. How do you think about the multiple ages and /or grades you have in your classroom in the mathematics instruction?
5. What are three things you keep in mind when patterning your daily lessons?
6. What are you thinking about while you are teaching mathematics?
7. As you look at the boys and girls in your classroom, and in your planning, are there different issues that you think about with boys and girls?

Observation questions:

1. Can you tell me what I was observing today? What materials are you covering and how does it fit within a unit?
2. What were some of the things that were going through your mind as you were teaching today?
3. What were you observing in students as you taught? What were you thinking about during the lesson?

APPENDIX C: CALIFORNIA STANDARDS FOR THE TEACHING PROFESSION

Standard one: Engaging and supporting all students in learning

1.1 Connecting students' prior knowledge, life experience, and interests with learning goals

1.2 Using a variety of instructional strategies and resources to respond to students' diverse needs

1.3 Facilitating learning experiences that promote autonomy, interaction, and choice

1.4 Engaging students in problem solving, critical thinking, and other activities that make subject matter meaningful

1.5 Promoting self-directed, reflective learning for all students

Standard two: Creating and maintaining effective environments for student learning

2.1 Creating a physical environment that engages all students

2.2 Establishing a climate that promotes fairness and respect

2.3 Promoting social development and group responsibility

2.4 Establishing and maintaining standards for student behavior

2.5 Planning and implementing classroom procedures and routines that support students learning

2.6 Using instructional time effectively

Standard three: Understanding and organizing subject matter for student learning

3.1 Demonstrating knowledge of subject matter content and student development

3.2 Organizing curriculum to support students understanding of subject matter

3.3 Interrelating ideas and information within and across subject matter areas

3.4 Developing student understanding through instructional strategies that are appropriate to the subject matter

3.5 Using materials, resources, and technologies to make subject matter accessible to students

Standard four: Planning instruction and designing learning experiences for all students

4.1 Drawing on and valuing students' backgrounds, interests, and developmental learning needs

4.2 Establishing and articulating goals for student learning

4.3 Developing and sequencing instructional activities and materials for student learning

4.4 Designing short-term and long-term plans to foster student learning

4.5 Modifying instructional plans to adjust for student needs

Standard five: Assessing student learning

5.1 Establishing and communicating learning goals for all students

5.2 Collecting and using multiple sources of information to assess student learning

5.3 Involving and guiding all students in assessing their own learning

5.4 Using the results of assessments to guide instruction

5.5 Communicating with students, families, and other audiences about student progress

Standard six: Developing as a professional educator

6.1 Reflecting on teaching practice and planning professional development

6.2 Establishing professional goals and pursuing opportunities to grow professionally

6.3 Working with communities to improve professional practice

6.4 Working with families to improve professional practice

6.5 Working with colleagues to improve professional practice.

APPENDIX D: OBSERVATION NOTES TEMPLATE

	Evidence 1	**Evidence 2**	**Evidence 3**
	African-centered Education/Culturally Relevant/Responsive Pedagogy	Excellence in Mathematics achievement	School Practices
I. Engaging and supporting all students in learning			
II. Creating and maintaining effective student learning environment			
III. Understanding and organizing subject matter for learning			
IV. Planning and designing instruction/learning experiences for all students			
V. Assessment			
VI. Professional development			

APPENDIX E: INFORMED CONSENT FORM

I,_____state that I am over 18 years of age and that I voluntarily agree to participate in a research project conducted by Janice Lord-Walker, Ed.D. student at Mills College.

The research is being conducted in order to explore how teachers with high expectations for their students engage and motivate them to learn academic content especially mathematics. African-centered education and culturally relevant instruction will be analyzed to determine how they might be applied to the diverse group of students in a typical mathematics classroom. The instructional strategies of each teacher in Pre-K through 8th grade will be examined to determine how the teachers ensure the academic success of each student. The specific task I will perform requires an initial interview one hour in length where I will discuss my educational background, my journey to African-centered Independent School, and the curriculum and instruction that I use to ensure the academic success of African American students, especially males. Next I will be observe while I teach mathematics and I will meet with the researcher after the observation to discuss what occurred in the classroom observation, what was I thinking about during the lesson and what I observed in the students. I understand that I have the right to answer only the questions that I feel comfortable answering.

I acknowledge that Janice Lord-Walker has explained the task to me fully: has informed me that I may withdraw from participation at any time without prejudice or penalty; has offered to answer any questions that I have concerning the research procedure; has assured me that any information that I give will be used for research

purposes only and will be kept confidential. I understand that my participation will be kept confidential and that my name will not appear in any written documentation.

I understand that any use of the audio recording that result from my participation in this study will not be used for purposes that are not directly related to research venues, such as presentation in meetings or conferences open to the public or press, without my further written consent. I understand that individuals associated with this research may request now or at some other time in the future an extension of the permissions for the use of this information that I consent to here.

All transcribed documents will be locked and password protected to maintain the privacy of the participants.

I understand that I may contact Janice Lord-Walker (510-326-2255) or her advisor, Sabrina Zirkel, Ph.D. (510-430-3380) if I have questions about this study at a time following my participation.

_____	_____
(Signature of researcher)	(Signature of participant)
_____	_____
(Date signed)	(Date signed)

APPENDIX F: EMAIL FOR PARTICIPANTS

Dear_____,

I am sending you this email to ask you to participate in a research study I am conducting for a course that I am taking at Mills College. I am a graduate student working on my Ed.D. in Education Leadership. The research study is being conducted in order to explore how teachers with high expectations for their students engage and motivate them to learn academic content especially mathematics. African-centered education and culturally relevant instruction will be analyzed to determine how they might be applied to the diverse group of students in a typical mathematics classroom. The instructional strategies of each teacher in Pre-K through 8th grade will be examined to determine how the teachers ensure the academic success of each student. I will facilitate the interviews. In order to minimize any discomfort you may feel about participating in this study, I will ensure that all comments made by participants will remain anonymous and recorded in such a way that individual staff identities will not be identifiable. You may decline answering any question you feel you do not wish to answer and may decline contributing to the study in other ways if you wish. All information you provide will be considered confidential. No other faculty member will be present during the session and your name will not be identified by name in the dissertation. Furthermore, I will ask you to keep in confidence information that identifies or could potentially identify a participant and/or his/her comments.

My goal in this research is to study the aspects of African-centered Independent School pre-k through eighth grade school, culturally relevant curriculum and instruction

and mathematic curriculum that ensures the academic success of African American students, especially males.

If you have any questions about participation in this research, please feel free to contact me at 510-326-2255.

Thank you for your assistance with this study.

Sincerely,

Janice Lord-Walker

TABLE 1: MATHEMATICS TEACHERS' CLASSES AT KUJICHAGULIA SCHOOL

Grade	Teacher	Course	#of students	# of student contact by teacher	Engaging and motivating remarks	Motivating redirects
Preschool	Mama Amara	Preschool	5 boys 3 girls	5 contacts/student	Good job! = 3x Nice job! = 3 x Great job = 3x	2x
PreK	Mama Aaliyah	PreK	6 boys 3 girls	5 contacts/student	Nice work = 8x Good = 8x Great = 8x	2x
K	Mama Adina	1st grade math	4 boys 4 girls	5 contacts/student	You can learn anything = 5x Talk about ancestors = 5x Good job = 5x	5x
1	Mama Abiline	2nd grade math	6 boys 5 girls	5 contacts/student	Libations Talk us through = 5 x Good job = 5x	1x
2	Mama Abbey	3rd grade math	7 boys 2 girls	3 contacts/student 5 contacts/new student	Focus = 2x Good job = 5x Pull out what you are asked = 3x	Follow along = 2x Pay attention = 3x
3	Mama Ada	4th grade math	4 boys 7 girls	3 contacts/student	Good job = 5x Focus = 3x Slow down = 3x	1x
4/5	Baba Jamal	6th grade math	6 boys	3 contacts/student	Focus = 3x	3x
		Pre-Algebra	4 boys 2 girls			
6 – 8	Baba Ahmad	Algebra, Geometry Intermediate Algebra	4 girls 8 boys	3 contacts/student	Good = 12x	2x