

## **Mathematically successful sons: the roles perceptions, and experiences of African American<sup>1</sup> parents**

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### **Abstract**

The stories of four mathematically successful middle schools African American boys are used to describe the roles, perceptions, and experiences of their parents. The parents of played multiple roles for their sons: (a) guardians of opportunities, (b) standard setters, (c) resources for mathematical knowledge, and (d) models of success. As guardians of opportunities, these parents were advocates, protectors, and supporters. As standards setter, parent placed high value on education and succeeding academically. As resource for mathematical knowledge, parents provided or served as a resource. As models of success, parents provided or served as roles models. Each of these roles shaped the mathematical experiences and contributed to the development of a mathematical identity that shaped the boys' understandings of and persistence with mathematics.

Key words: African American, Parents, Critical Race Theory, Culture and ethnicity

### **Introduction**

Calvin is a sixth grade African American student in a suburban school district located in the south-eastern part of the United States. As an elementary school student, Calvin earned the highest level of achievement on standardized mathematics tests given in state for grades three, four and five. In addition, in grade four he scored in the ninety-eighth percentile on a national standardized achievement test in mathematics. On all objective measures in mathematics, Calvin performed well and in most cases he excelled. In addition, he earned good grades in mathematics by earning A's and B's consistently.

Calvin's mother acknowledges that her son is in need of a variety of stimulation in order to prevent boredom. She knows that Calvin needs to feel that his teachers are interested and cares about him in order for him to be productive in class. Calvin and his mother admitted that mathematics is his favourite subject. Both Calvin and his mother admit that he can be a handful in class. His behaviour is not always that of a model student; however, they believe his behaviour is well within acceptable classroom norms.

At the end of fifth grade, Calvin was excited about going to middle school. At that time, teachers identified students to take a mathematics placement test to gain entry into an upper-level pre-algebra mathematics course for sixth graders. Calvin was upset because he was not selected and there were students selected to take the test who he considered were not as "good at math." Calvin's mother inquired about the criteria for selection of taking the placement test and

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<sup>1</sup> The term African American is a descriptor that includes many different segments of the American population referred to as "black" or Americans of sub-Saharan African ancestry. I am using this term to refer to those individuals of African descent who have received a significant portion of their socialization in the United States (Sellers, Smith, Shelton, Rowley, & Chavous, 1998). The term African American is culturally bound to a group of people within the context of American society.

discovered that Calvin met all criteria except one, teacher recommendation. Calvin's fifth grade teacher indicated that although Calvin scored well on assessments, his behaviour and his inability to sit still would not make him a good candidate for pre-algebra in sixth grade. In a conference with the guidance counsellor, Calvin's mother inquired about his being placed in pre-algebra. The guidance counsellor responded that she would not want to place Calvin in a class he could not pass. The counsellor assumed that Calvin would not pass the class without considering his previous performance. The principal at the middle school evaluated Calvin's situation and argued that pre-algebra is a rigorous course for sixth grade students and only disciplined students are capable of passing this course. Even though Calvin had performed well in mathematics throughout his schooling, school personnel focused their attention on behaviour rather than academics when evaluating his mathematics potential. When the sixth grade school year began, the pre-algebra class had no African American male students.

Calvin's mother felt that race was a motivating factor in Calvin not gaining access to the sixth grade pre-algebra course. Calvin's school district's mission statement focuses on excellence and fairness and enabling all students to acquire knowledge, skills and insights necessary to live productive lives in an ever-changing society. Consequently, the school district is concerned about the mathematics achievement gap. Calvin's story raises questions about whether school personnel are committed to the mission statement and beliefs that school personnel hold for African American boys.

Calvin has a mother who served as an advocate for him and worked to challenge school personnel to help Calvin gain entry into the pre-algebra course the second week of the new school year. Unfortunately, Calvin's story is not unique; African American boys are often confronted with lowered expectations even when they have shown that they are capable of achieving. School personnel are gatekeepers of power because they possess a great deal of autonomy and control over who gains access to advanced curricula, human and material resources, and quality instruction (Yosso, 2002). Access to advanced mathematics curricula in middle school impacts students' opportunities to learn rigorous mathematics in high school (Lubienski, McGraw, & Strutchens, 2004). The advocacy of Calvin's mother provides insights to concerns about the number of capable African American boys who are denied access to a rigorous mathematics curriculum, pushed out of the advanced mathematics pipeline, met with lowered expectations, and not provided with the support to achieve in school mathematics.

There is a dearth of research in mathematics education that considers the perspectives and experiences of African American parents. Mathematics education reform documents acknowledge that parental involvement and parental experiences have an impact on students' mathematical experiences (National Mathematics Advisory Panel, 2008; National Council Teachers of Mathematics (NCTM), 2000). These documents have identified parental involvement as an important goal for student success. However, calls for increased parental involvement have an underlying normative notion of White and middle class (Martin, 2006). Martin argues that the extant mathematics education research, with a few exceptions, has failed to present sufficient characterizations of the mathematical beliefs, experiences, and advocacy of parent of colour. This paper provides characterizations of the mathematical experiences and advocacy of African American parents in the lives of their sons who have experienced success in mathematics. Specifically, it examines the roles of the parents of eight African American boys who experienced success with middle school mathematics. For this study success is defined as middle school students enrolled in Algebra 1. Calvin's story is highlighted at the beginning because it represents the type of advocacy and obstacles these boys and their parents faced when working to gain access to rigorous mathematics.

Researchers have documented four factors in an effort to understand and explain African American parents' roles, experiences, and perspectives with regard to mathematics

education. These factors are: (a) African American parents' perspective of mathematics as a tool to help children overcome structures and barriers that limit opportunities; (b) African American parents role in the mathematics reform discourse; (c) deficit assumptions educators with regards to African American students' mathematics practices and parents' roles with children with regard to mathematics literacy; and (d) African American parents' perspectives and experiences of the power and mathematics education. These factors are not beneficial exclusively to African American parents; rather these factors provide insights to perspectives rarely addressed in the literature. To situate the research reported in this work, study that focused on African American parents and mathematics education are highlighted in this review of literature. The four broad factors are discussed in the context of the studies throughout this literature review.

Martin's (2006) used ethnographic and participant observation methodologies to reveal that mathematics learning and participation can be conceptualized as racialized forms of experience. This study involved the perspectives and experiences of three groups of African American parents. The parents in Martin's (2006) situated their struggle for mathematical literacy within race-based frameworks. He found that as these parents attempted to become doers of mathematics and advocates for their children's mathematics learning, discriminatory experiences subjugated some of these parents, whereas others resisted subjugation based on a belief that mathematics knowledge can be used to change the conditions of their lives. Additionally, these parents were less concerned with whether their children were experiencing traditional or standards-based mathematics instruction and more concerned with whether they were receiving "the kind of mathematics that will help their children penetrate closed structures, improve their conditions in life, and overcome the barriers that they will likely encounter as a result of their African American status" (Martin, 2003, p. 8). Martin also found that the parents in his study made a reinvestment in mathematics by becoming doers of mathematics. That is they sought ways to deepen their mathematical understandings and skills by enrolling in courses. This reinvestment in mathematics had an impact on the ways they engaged their children mathematically because they encouraged their children's mathematical development and saw mathematics as a way for their children to participate in the larger opportunity structure.

Anderson and Gold (2006) used the lens of mathematics as situated social practice to focus on four African American children in an urban preschool classroom. They followed these children between home and school sites to shed light on their persistent underachievement in mathematics. Anderson and Gold described the ways in which numeracy practices travel with children between home and school. They found that school imperatives such as assessments and socialization curricula, obscured teachers' views of children's mathematical practices. Additionally, deficit assumptions about parental and community support for children, and limited interaction between parents and teachers, contributed to school personnel overlooking the mathematical practices children bring with them to school.

Remillard and Jackson (2006) analyzed the practices of the educators and perspectives of the low-income African American parents in their study who were trying to make sense of an elementary mathematics reform curriculum. They interviewed ten African American parents and held two focus group meetings, during which parents shared their experiences with mathematics as students themselves and as parents of children using a Standards-based curriculum. Remillard and Jackson (2006) found that even though parents saw themselves as critical to their children's mathematics learning, the implementation of the curriculum disempowered parents. Parents had little understanding of the curriculum's approaches, and thus limited parental access to the discourse of reform. Leaving parents out of the conversations about mathematics education reform and denying them access to the discourse of reform can compromise parents' confidence in playing active roles in their children's schooling (Allexsaht-Snider, 2006). Remillard and Jackson (2006) argued that if educators are to develop

partnerships with parents of varied class and ethnic backgrounds in mathematics education, they cannot ignore power differentials between parents and teachers/administrators.

Peressini (1996) explored the role of parents in the reform of mathematics education at three urban high schools. He used semi-structured interviews with parents, teachers, mathematics department chairs, and principals. Peressini questioned the ways in which parents have been positioned with respect to mathematics reform. He found that parents were denied access to the discourse of the reforms and parents were powerless with respect to their children's learning of mathematics because mathematics educators and school personnel held little regard for parents' interests or concerns.

The studies in this literature review focus on the African American parents' roles, perspectives, and experiences. A common theme among these studies is the intersections between race, opportunities, and mathematics. These studies are broadly situated in that they range from parents of preschool aged children to parents of high school aged children. This study is narrow in its focus because it focuses on parents of African American middle school aged boys who have been successful with school mathematics. This narrow focus allows us to determine if the experiences of these parents are parallel to the broader group of African American parents.

### **Theoretical framework**

An understanding about the experiences and the adaptive responses of African American parents who have sons who are successful with school mathematics can be gained through using a "critical equity lens" (Gutstein, Middleton, Fey, Matthew, et al., 2005; p. 95). A critical equity lens provides a perspective in which will allow an examination of race as a social construct and its intersections with mathematics. For this study, critical race theory (CRT) is the theoretical framework because it allows us to examine the complexities of the mathematical experiences of African American parents and their sons, and its intersection with equity and social justice.

CRT draws from a broad literature in law, sociology, and history and is being extended into education and women's studies (DeCuir & Dixson, 2004; Ladson-Billings & Tate, 1995; Solorzano & Yosso, 2001). Historically, its roots can be traced to legal studies. CRT consist of some basic insights, perspectives, and methods that seek to identify, analyze, and transform structural aspects of education that maintain subordinate and dominant racial positions within and out of the classroom (Solorzano & Yosso, 2001). There are at least five elements that form its basic model: (a) the centrality of race and racism; (b) the challenge to the dominant ideology; (c) commitment to social justice; (d) the centrality of experiential knowledge; and (e) a transdisciplinary perspective. Critical race theorists utilize methods such as storytelling, counter-storytelling, narratives, chronicles, scenarios, biographies, and parables to portray the lived experiences of people (Delgado, 1995).

As a theoretical framework, CRT was fitting for this study, because it uses mathematics as a context to provide the insights and perspectives of African American parents. This study transcends disciplinary boundaries because it moves beyond traditional mathematics education research to examine the experiences of African American parents from an anthropological and sociological viewpoint. Common to work arising from CRT, this study uses counter-storytelling.

Phenomenology is a good methodological match for this study within its theoretical framework of critical race theory because it recognizes understanding one's subjective interpretation of individuals' lived experiences. A phenomenological study describes the meaning of the lived experiences for several individuals (Creswell, 1998; Tesch, 1987). This is consistent with methodologies of critical race theory. The phenomenologist selects a

phenomenon that is of interest and is stimulating in such a manner that it draws the phenomenologist into the world of those individuals who share the lived experience (Pinar, Reynolds, Slattery, & Taubman, 1995). This study draws from a larger study; consequently a common framework was used for this analysis. The larger study focused on African American middle school boys who have been successful with school mathematics and the elements of their experiences that led to their success. Phenomenology and critical race theory was fitting for these investigations. The literature overwhelmingly situates academic achievement for African American boys in terms of failure thus, success for African American boys was perceived as a phenomenon for these studies. The primary research question for this study is, “How do parents of African American middle school boys who have been successful with school mathematics conceptualize their roles in their sons’ mathematical experiences?”

### **Participants**

In a phenomenological study, the participants may be located at a single site or multiple sites. It is essential that the participants experience the phenomenon being explored and can articulate their conscious experiences (Creswell, 1998). The primary participants in this research were the parents of eight African American boys who experienced success with middle school mathematics.

Identification of the boys was done through a pre-college program’s database. The pre-college program database included the approximately 1000 students in 19 public schools (12 middle schools and 7 high schools) in four school districts located in a south eastern state of the United States. The pre-college program was used as an initial starting point because its mission is to increase the number of historically under-represented students in mathematics and science by providing enrichment opportunities.

The four middle schools selected for this study are located in the same urban school district. After identifying four middle schools, one Algebra 1 class in each school with at least two African American boys enrolled was selected for the study. The initial intent of having two African American boys in the same class was to compare the experiences. However, it was found during data collection that experiences of the boys were similar. Once the boys were identified their parents were invited to participate.

The enrolment of African American boys in Algebra 1 at each of the four middle schools was five, two, four, and four. This urban school district has 46 schools (8 middle schools) with approximately 32,000 students. The racial composition of the school district is approximately 55% African American, 25% White, 14% Latino/a, 2% Asian, and remaining students are classified as other. There are approximately 51% girls and 49% boys within this school district. It is interesting to note that in a school district with a majority African American student population, the pool of African American boys enrolled in Algebra 1 was so small.

### **Data collection**

#### **Establishing trustworthiness**

Credibility, transferability, dependability, and confirmability were the criteria used to verify trustworthiness of the data (Lincoln & Guba, 1985). Credibility was verified by providing for prolonged engagement with the participants, data triangulation, and validity check. Providing rich descriptions of the stories established transferability. Dependability was established through overlapping methods and data triangulation. An audit trail of transcripts, audio recordings, field notes, and documents established confirmability.

#### **Approaches to data collection**

Phenomenological research explores the personal construction of a person's world through in-depth, unstructured interviews (Polkinghorne, 1989; Tesch, 1987). This research reported here focuses on the parental interviews. The purposes of the parental interviews were to: understand parents' perceptions of their son's mathematical abilities; get parents' insights into their son's mathematical history; and gain insights into the ways parents advocated, encouraged, and helped their sons. I used an interview protocol; however, all of the parents provide in-depth data after all the protocol questions were answered. All sessions moved from semi-structured interviews to conversations amongst friends. Seven parents were interviewed twice and the length of the interviews ranged between one and two hours. The interviews were audio-recorded and transcribed.

In the larger study, the boys were interviewed three times, they completed a questionnaire, wrote a mathematical autobiography, observed in during their mathematics class, their academic records were reviewed, and their teachers were interviewed. While the data reported here focuses on parents, the data sources collected from the boys were shared with parents.

### **Data analysis**

CRT influenced the analysis of this study by allowing me to place racialized experiences at the centre of analysis (Martin, 2006). The intersection between CRT and phenomenology provided the framework to look for the interrelationships between the parents' experiences and perceptions and issues of race. The analysis of data used a nonlinear approach, which allowed us to look for recurring themes that could be explored in greater depth. It also allowed for progression through the following processes: data management, reading and "memoing" (see Creswell, 1998; p. 143), describing, classifying and interpreting, and representing and visualizing.

*Atlas TI*, a qualitative computer software program, was used for data management. *Atlas TI* allowed us to create a document system to store and retrieve text, search for words or phrases, and create coding systems for text data. Because analysis occurred in conjunction with data collection, we created memos within the raw data. Memoing allowed for some initial coding and document areas where more depth was needed. The codes used during the memoing came from the review of literature. Once data collection was completed, we reread and re-coded the entire database to refine and verify the initial coding to assure consistency. After this, we sorted the database by codes then reread and re-coded the database. At this point, we looked for themes within each section (code) to see if there were dimensions that required the data to be further discriminated. Through this process, themes emerged from the data.

### **Researchers' identities**

Asante (1980) argued that researchers should give themselves over to the act of research. That is, one has to delve deeply into oneself to reveal to the reader the motivation and the perspectives one brings to the research. The researcher should present sufficient information about himself or herself to enable the reader to assess how and to what extent the researcher's presence influences the choice and outcome of the research (Reviere, 2001). One's life experiences influence all aspects of the research process; thus, judging a researcher's work should raise questions about truthfulness, fairness, and honesty.

In order to be truthful, fair, and honest, I will reveal information about myself so that readers can assess my presence in this research. I am an African American man who taught school mathematics. For me, the roles of researcher, learner, and teacher are intertwined and complement one another. I cannot discount the fact that my race, gender, social class, and

political views affected the research process. Rather than minimize this influence, I used my multiple identities as an interaction quality in the research process. In collecting the data for this study, the fact that I am an African American man was an obvious strength for me to create discourse the parents.

### **Findings**

The presentation of the findings is based on the analysis of the data from the parents of eight boys who participated in the larger study. Bilal, Cordell, Clayton, Jabari, Darren, Phillip, Akil, and Andre are the boys discussed in the findings. Names of people and places within the stories are pseudonyms. The parents of these boys played multiple roles for their sons: (a) they were guardians of opportunities, (b) standard setters, (c) resources for mathematical knowledge, and (d) models of success. Each of these roles shaped the mathematical experiences of their sons and contributed to their son's development of a mathematical identity and shaped their son's understandings of and persistence with mathematics.

Parents as guardians of opportunities situated these parents in the roles of advocates, protectors, and supporters. As advocates, these parents advocated early on to ensure their sons' proper mathematics placement. As protectors, these parents wanted to protect their sons from low expectations. As supporters, these parents were involved in academic activities. Parents as standard setters stressed the importance of doing well in mathematics which will allow access to broader opportunities. Parents as resources for mathematical knowledge positioned the parents as primary resource for mathematics. Parents as models of success situated these parents as mathematical role models.

For these boys, their families were critical to their success. Their parents were keenly aware of the intersection between race and gender as it relate to African American males.

#### **Parents as guardians of opportunities**

Seven of the parents did not trust their sons' schools. These parents were not intimidated by educational authority figures, and were cautious about accepting opinions offered by school personnel. Because of their distrust, these parents were involved with school related activities and adopted the roles of advocates, protectors, and supporters. Advocacy works to ensure that their son's needs are met and they receive equitable treatment, and convey a message to school personnel that the student is expected to succeed. Advocacy overcomes passivity of schools that allow prejudiced behaviours to interfere with students' learning. Five of the sons were identified as gifted prior to fourth grade. The gifted designation put the sons on a track they would allow them access to a high tracked mathematics group. This placement gave parents the perceptions that their sons' would receive richer mathematics instruction in elementary school. Four of the sons' gifted placement came in spite of teachers' failure to recognize their potential. It was the advocacy from parents that garnered their sons' placement in the gifted program. Without this advocacy, these four boys would have been placed at a disadvantage and could have potentially altered their mathematical experiences.

Initially, educational gatekeepers perceived four sons', Cordell, Phillip, Clayton, and Bilal, behaviour as inappropriate for the gifted recognition. In Cordell's case, he was bored with school and he started to cause behaviour problems. Cordell's mother perceived race was a factor in school's decision not to initially test Cordell for the gifted placement. She stated, "I raised the question with the school and asked them to test him...nothing was being done, so I went up to the school and stayed on them." She felt that race was a factor in Cordell not being tested for the gifted program earlier by stating, "I do feel like if he was not Black they probably would have taken it upon themselves to make sure he was in the right class." Phillip's mother had similar perceptions and experiences and believed that race was a factor her son not initially being

recognized as gifted. Phillip's second grade teacher, who was White, pre-diagnosed him with Attention Deficient Disorder, and his third grade teacher, who was African American, recognized him as being gifted. The second grade teacher focused on behaviour rather than cognitive abilities, whereas Phillip's mother believes that her son's third grad teacher understood Phillip culturally and saw Phillip's academic potential. In Clayton's case, his parents believed Clayton was overlooked because he is an African American male. Bilal's mother recounts the story providing a context as to why Bilal was not initially recognized as gifted by stating:

He happened to have a good White friend whose mother really cared for him [Bilal] and spoke up for him a couple of times even when my husband talk to the school about him being tested for academically gifted. The response at the time was that he was not able to handle the work so she [the teacher] did not want to recommend it. It was actually his friend's mother, [the white friend's mother], who bought it up to the principal and the next thing we know he is being tested for AG. And of course, he tested well enough to be AG.

As protectors, these parents believed that schools were not immune to issues of subordination that affect African American males in the larger society. These parents were felt that schools had low expectations of African American boys, and they wanted to protect their sons from low expectations. Having a presence is critical for Bilal's parents; his mother asserted,

We find being African American and by our son being an African American male, that we have to make sure that our presence is always at the school, with the teachers. Because if not, while he is smart, he will still be placed by the wayside

They perceived their presence, both physically and figuratively, in the school as an indicator to the teachers that they have high expectations for their sons' academic performance. Phillip's mother stated,

I have to be at my son's school to make sure he is treated fairly. I speak to the teachers and the principals, letting them know that I am involved in his education and education is important [to me].

As supporters, these parents were involved in academic and non-academic activities. They supported their sons' schools by serving on school committees, working on fundraising events, and chaperoning events. With regards to mathematics, these parents were highly involved with a pre-college program that is a partnership between the school division and a major university. The pre-college program's mission is to increase the number of historically under-represented students in mathematics and science by providing enrichment opportunities. These parents saw participation in this program as an additional educational opportunity for their sons. They supported the program by making sure their sons attended monthly Saturday academies at the university, participate in mathematics and science competitions, and worked with teachers to ensure that the school had the necessary support materials. By supporting school activities, they further delineated their presence in the school; this presence relayed clear messages to their sons and school personnel that they valued educational experiences, both academic and non-academic.

### **Parents as standard setters**

Parents placed the highest value on education and succeeding academically. All of the parents stressed the importance of doing well in mathematics and school. Cordell's mother stated, "...I

just expect him to do well in school...if he does not do well he had better have a good excuse.” With regards to mathematics performance, Clayton’s mother expected Clayton to well in mathematics because he is capable. She stated, “Children tend to live up to your expectations...don’t bring home C’s.” Jabari’s mother had similar sentiments as Clayton’s mother by stating,

I know the ability is there, we just have to make sure we nurture and help bring out the better part of him in it. So, we are going to be on his case one way or the other. I’ll put it this way; he is going to do well

Darren’s mother declared, “I think my job is to motivate him...he has to put in the time with Algebra I to do well.” Likewise, Akil’s mother has strong expectations for her son by stating “I just want my son to his best [in mathematics]...his best is getting all A’s.” The message the parents gave their sons was that not doing well in mathematics and school was not an option. The parents constantly pushed their sons to achieve academically. They told their sons they could achieve and expected exemplary performance in school.

### **Parents as resources for mathematical knowledge**

Seven parents served as a resource for mathematics knowledge. This does not imply that the parents understood Algebra 1; rather, these parents probed and asked questions of their sons. Five parents openly admitted that they did not understand their sons’ Algebra 1 work. Akil’s mother stated “I make him show me how to do it so that I can understand...if I understand then I know he can do it.” When the sons were in earlier grades their parent helped them with their mathematics homework. The parents quizzed their sons on mathematical concepts, asked their sons to show them how to do problems, and made their sons re-do problems/work they deemed as insufficient. Even when the parents did not understand the mathematics, they asked their sons to explain the mathematics to them.

Seven parents emphasized the importance of their sons’ preschool experiences and exposure to educational materials early, as a way of ensuring that their sons receive early academic experiences. Andre’s mother stated, “We played games with him when he was younger. I think this help him learn math.” Similarly Clayton’s father discussed that, “Clayton has been going to my tutoring program at our church since he was in pre-school...he learned a lot of math helping me tutor.” These parents discussed their sons’ academic readiness as a way to circumvent potential problems they perceived that Black boys encounter early in school. Parents discussed their sons’ experiences with educational toys and materials, such as workbooks, flashcards, computers, educational videotapes, and other materials that supported early academic development. Phillip’s mother stated, “I would just quiz him on his [additions and multiplication] tables when we were riding around town.” These parents focused on helping their sons’ develop addition and multiplication skills. Interestingly, the sons’ perceived this as a contributing factor to their early success with school mathematics.

### **Parents as models of success**

The sons found models of success in their parents, other family members, and people they admired. Four of the sons spoke fondly of their fathers. They saw their fathers as a model of high achieving and successful African American men. The sons spoke of their fathers as their primary role model and described how hardworking their fathers were and how they often learn from their fathers. Jabari said, “My dad knows all about math; he majored in math in college.” Andre stated, “My dad is the smartest person I know, he knows everything.” Bilal stated:

I get it [mathematics] from my father. My father helps me by making me do math problems on his job or when he works, he makes me figure out how much to pay the people that is working for him by the hourly wage...I like working with my dad...he is the smartest person I know.

Not all of the sons had fathers in their lives. However, they did have other models of success. These role models served in similar capacities as the fathers described earlier. Akil described his mother by stating:

My moms she's mainly the one who motivates me. Like sometimes I feel like I don't know it, I can't get it; she will say keep trying or whatever. I guess I get it from her because she is really a math person and she is all about school.

### Discussion

African American boys are confronted with significant academic and social challenges in their quest for education. The parents in this study are keenly aware of the ways that society, including schools, devalues their sons' African American status. The popular press often reports that African American boys are overrepresented in low ability group classes, underrepresented in gifted and talented academic programs, and underrepresented in upper level mathematics classes. Consequently, parents of African American boys in this study advocated, protected, and supported their sons' from the subordination they are likely to encounter.

Martin (2006) questioned if race mattered in the mathematics learning and participation of African American parents. Martin concluded that race mattered. Likewise, in this study, race mattered to these parents. The centrality of race was a theme that was interwoven across all the roles that parents in this study played in their sons' lives and mathematical experiences. The parents in this study framed race as a being socially constructed; consequently, they recognized areas their sons received differential treatment and circumvent potential situations where their sons would be denied mathematics opportunities. These African American parents recognized the influential nature of educational gatekeepers as hindrance to their sons' academic position and exposure to high tracked mathematics. This is significant because it raises concerns about other African American boys whose academic and mathematics potential are not recognized and who may not have parents or adults to advocate, protect, and support them. It is highly plausible that their mathematically talented African American boys who are relegated to being underserved in their experiences.

Several questions arise when looking at the implications from this study. The questions are: (a) How can we raise teachers' expectations for teaching African American males? (b) How can we inform teachers about African American cultural style and learning preferences? (c) How can teachers and parents collaborate in assessing African American boys' academic potential? High expectations from teachers reduce the likelihood that African American males will experience failure with school. Knowledge about African American cultural experiences provides educators with a means for interpreting students' and parents' thoughts, feelings, and actions while raising expectations for student success (Bennett 2001). African American learning preferences are connected to African American cultural experience. Boykin (1986) identified nine interrelated dimensions of the African American cultural experience:

- a. Spirituality is the conviction that non-material forces influence people's lives;
- b. Harmony addresses the notion that people are interrelated with other elements;
- c. Movement emphasizes the interweaving of pattern, rhythm, music, and dance;

- d. Verve is a propensity for high levels of stimulation, to action that is energetic and lively;
- e. Affect focuses on emotions, feelings, and nurturing;
- f. Communalism is an awareness that social bonds and responsibilities transcend individual privileges;
- g. Expressive individualism is the cultivation of a distinct personality and a preference for novelty, freedom, and personal distinctiveness;
- h. A social time perspective is an orientation in which time is treated as passing through a social space;
- i. Oral tradition is a preference for oral modes of communication in which both speaking and listening are treated as performances (Boykin and Toms 1985, p. 41).

Although African Americans share common cultural, historical, and social experiences, not all cultural characteristics uniformly apply to all African Americans. Having an understanding of research associated with the African American culture can help increase student learning when pedagogy is compatible with the cultural style of African American learners (Bennett 2001).

Shade (1997) described the African American learning preference as an aggregate of holistic, relational, and field dependent learning styles. Holistic learners seek to synthesize divergent experiences in order to obtain the essence of experiences. Relational learning preference is characterized as freedom of movement, variation, creativity, divergent thinking, inductive reasoning, and focus on people. Field dependent learners need cues from the environment, prefer external structure, are people-oriented, are intuitive thinkers, and remember material in a social context (Shade 1997).

Irvine and York (1995) suggested that the research on learning preferences and culturally diverse populations should be interpreted cautiously. Irvine and York stated,

Although it is clear that culture, particularly ethnicity, is a powerful force that influences students' predisposition toward learning, it must be emphasized that cultural practices are learned behavior that can be unlearned and modified. Culture is neither static nor deterministic; people of color are not solely products of their culture. Consequently, culture affects individuals in different ways.

Culture and ethnicity are frameworks for the development of learning preferences; however, other factors play a significant role in cultural and learning preferences (Irvine & York, 1995).

Utilizing knowledge of the multiple roles — (a) they were guardians of opportunities, (b) standard setters, (c) resources for mathematical knowledge, and (d) models of success — parent played in this study can provide insights into perspectives that are not represented and sometimes not valued by the mainstream. These roles represent a lens that is critical of the schooling and perhaps a more critical lens from parents is necessary to address some of the inequities that exist in schools. Additionally, the roles represent empowerment. Oftentimes, the African American lens is discussed and frame within a deficit framework. These roles serve as an example of the power that African American parents have to assert themselves in an institution that, at times, devalues their perspectives. Despite being undervalued these African American parents exhibit positive agency and advocacy on their sons' behalf.

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