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Article

Narratives of black mothers: Experiences in advocating for mathematical success in public education

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Abstract: This study employs an analysis of narratives method with interviews of three Black mothers whose children participate in a United States university-based Science, Technology, Engineering, and Mathematics (STEM) program. The findings reveal three themes that are as follows: Black mothers are (1) deeply committed to their children's mathematics learning; (2) encounter epistemological barriers rooted in educational terminology; and (3) face systemic challenges advocating for advanced math placement and special education accommodations. While prior research has acknowledged racial disparities in education, this work demonstrates the role of Black mothers in dismantling discriminatory gatekeeping in educational pathways. The study highlights systemic barriers and the resilience of Black mothers in advocating for their children's mathematical success, which can provide actionable insights for educators to improve transparency and equitable communication.

Keywords: mathematical advocacy; gatekeeping; mathematical gatekeeping; tracking; educational pathways; special education; public schools; mothering; m/othering

1. Introduction

As a Black mother-educator, I am in a perpetual space of teaching my children and advocating for their education in public school—particularly in mathematics. My own personal experiences navigating public school spaces have been fraught with complexities. Throughout data collection and analysis, I engaged in self-reflection and dialogue (e.g., journaling and peer debriefing) to ensure I did not project my own assumptions onto participants' stories. Mothers are deeply attuned to the needs of their children, and educational advocacy is an extenuation of m/othering. Exploring mothering in terms of mathematical advocacy is a counterstory to the narratives that Black parents are uninvolved in their children's education. The instinctive need to educate a child is the epistemological basis of m/othering pedagogy. Ladson-Billings and Tate [1] illustrate that discussions surrounding Black American students are typically framed from a deficit perspective with gaps in standardized scores between Black students and their peers highlighted [2]. Moreover, during the COVID-19 pandemic, students' gains in mathematics learning were lower in 2021 than in 2020, particularly for minority students [3,4]. While the data for Black, Latino, Hispanic, and Native American students may show learning loss, a qualitative look at Black mothers may offer insight into why these divides still exist. The objective of this study is to examine the experiences of Black mothers as they advocate for their children's success in mathematics, navigating systemic barriers, tracking policies, and special education accommodations.

This research is the culmination of focus interviews and observations with Black mothers whose children are participants in a local United States university-based Science, Technology, Engineering, and Mathematics (STEM) enrichment program. Mothers were asked to discuss their greatest challenges when interacting with teachers in grades K-12. This study is novel because it centers the voices of Black mothers. Their narratives were analyzed and the themes that emerged from the discussions were as follows: (1) advocacy by Black mothers for their children; (2) gatekeeping within educational pathways (tracking system); and (3) special education accommodations. Analysis of narratives uncovered commonalities that existed across multiple sources of data [5]. The guiding research question for this study is as follows: What do Black mothers identify as needs and challenges to enhance their children's mathematical success? This research seeks to contribute to existing literature on Black mothers and mathematics advocacy and expand insights through analysis of narratives .

2. Literature review

2.1. Parental involvement in education

Hoover-Dempsey and Sandler [6] define parent involvement as home-based activities related to learning: reviewing a child's work, helping with homework, and providing enrichment activities pertinent to school success. Mothers are a child's first teacher and the success of school education depends on the earliest years of life [7]. Compared to their Caucasian counterparts, Black parents are frequently characterized as being less involved in their children's educational experiences [8,9]. Archer-Banks and Horenstein [10] assert that Black parents have been discouraged from fully participating in their children's academic experiences due to racial biases within schools. Furthermore, Martin [11] suggests that many Black parents situate their struggle for mathematics literacy within race-based frameworks. Their Blackness is seen and felt as an inhibitor in understanding mathematics because they do not see themselves represented in the mathematics [12–14]. A recent study with Black parents [15] further confirmed that they are reluctant to engage with school personnel due to prior negative mathematics experiences with teachers and school officials.

Patricia Hill Collins coined the term motherwork, which refers to the "reproductive labor" that women of color engage in to ensure the survival of family, community, and self. By asserting their knowledge and experiences related to teaching and learning, Black women center their motherwork on Black children. Collins [16] contends that the m/othering work of women of color entails preparing children to survive and adapt to systems of racial oppression. I assert that the advocacy efforts of Black mothers in supporting their children's mathematical success can be understood as a form of motherwork.

Furthermore, Black moms are uniquely positioned to advocate for and support their children in mathematical success. M/othering is a performative and active practice that is always incomplete, indeterminable, and vulnerable [17]. With memories of their own personal school experiences, they may be seeking better learning outcomes for their children. McGee and Spencer [18] discovered that Black parents, $n = 24$, supported their children's mathematics participation and learning in and outside of school settings through enrichment programs. Critical theory can assist

in analyzing the power dynamics that lead to social inequality [19], which may help explain Black mothers' interactions with public-school personnel. By examining Black mothers' interactions with public education through a critical theory lens, Kim [20] demonstrated that the educational system serves to direct youth into an economic system that reflects class identifications.

According to Kim [20], "correspondence thesis" refers to the relationship between school norms and capitalist structures of inequality. The correspondence thesis manifests itself in schools by the following: (1) subjecting students from different social classes to varying school experiences in terms of curriculum and teachers' expectations of them; and (2) hidden curricula and tracking systems that assign students to specific coursework [21,22] that matches their social classes while simultaneously conditioning them to accept social inequality [20]. Therefore, the ideology of a class system is reproduced in the tracking practices in public schools, placing children on predetermined and immutable pathways [23]. Bourdieu's research showed schools serve to legitimate and reward the specific habitus and cultural capital of dominant groups; therefore, denying the cultural capital of non-dominant groups [24]. In public schools, Bordieuan thought manifests itself in public education through the concept of doxa, the unspoken assumptions, beliefs, and values that underpin the educational system. Furthermore, Apple [25] details how parents can gain access to hidden cultural resources for their children through resources that include camps and after-school activities, which are both natural and operate as a collection of cultural resources. This pattern of behavior enables parents to decode and make use of marketed forms for their own advantage by utilizing habitus.

Delpit [26] examines critical theory through a cultural lens in relation to public education and classroom microaggressions that are core to the doxa of public education. This cultural lens is influenced by the values of upper- and middle-class Americans, those in power. Delpit's insight into power dynamics reflects the complexities that people of color face when navigating the educational system. Delpit [26] proposes a "culture of power" with four tenets.

1) Issues of power are enacted in classrooms. This includes the power of the teacher over the student. Schooling prepares people for jobs, and the type of job a person has determines economic status; thus, schooling is related to that power.
2) There are codes or rules for participating in power; that is, there is a culture of power. This term refers to the rules governing communication, writing, dressing, and social interaction. People in positions of power have their own rules that guide their behavior. Children from lower-income families have a culture but not the codes or rules of power of the middle class.
3) If you are not already a participant in the culture of power, being told explicitly the rules of that culture makes acquiring power easier. This is similar to full language immersion and understanding appropriate dress and hidden meanings.
4) Those with power are frequently the least aware of—or the least willing to acknowledge—its existence. Those with less power are often most aware of its existence.

Ladson-Billings and Tate [1] claim that it is necessary to hear and consider the perspectives of people of color to conduct a thorough analysis of the educational system. Often Black moms' voices are marginalized because the system upholds

barriers that create systemic inequity. Likewise, to ensure that many students do not pass through the gatekeeping points, school personnel will pretend these barriers do not exist [26]. To advance in public schools to classes with a more rigorous curriculum, students must perform well on standardized tests and earn favorable recommendations from their teachers [27]. These tests utilize language and examples from middle-class white America. Race, ethnic origin, and social class all influenced teachers' perceptions of students' suitability for various curriculum tracks, which create barriers to advanced math courses [28,29]. According to Delpit [26], schools have a culture of power that supports the dominant group, White and middle class, and fail to reveal the rules because they are unwilling to acknowledge the cultural power, they hold over other people's children.

2.2. Black parental advocacy & challenges

To counteract this culture of power, Black people will engage in code-switching, which involves changing mannerisms, appearance, behavior, and expression to better suit the needs of others in exchange for equal treatment [30]. Black mothers are placed in a position to code-switch while interacting with public-school personnel to advocate for their children [18,31]—being seen through the lens of Blackness and then motherhood. Dubois [32] describes double consciousness as the strange sense of always looking at yourself through other people's lenses and measuring your soul against the tape of a universe that looks on with amused contempt and sympathetic pity. Martin [33] investigated the historical underpinnings of Black parents' negative experiences, as well as their rationalizations for their own lack of success in mathematics, which are rooted in their racial identity, to better understand mathematics achievement in their children. Black mothers actively engage in advocacy to support their children's mathematical achievement, confronting hidden norms and discriminatory power dynamics within schools.

2.3. Mathematics as gatekeeper and tracking

Furthermore, the culture of power manifests itself in tracking in the public schools in the United States, beginning as early as kindergarten. For example, when working with students in the early grades, teachers frequently employ some form of within-class achievement grouping [34]. According to Douglas and Attewall [35], during the post–World War II era, the majority of U.S. high schools adopted an academic tracking system, with students divided into college-preparatory, general, and vocational tracks, each with their own curriculum. This academic tracking system created educational pathways that have the potential to alter college readiness trajectories. One disadvantage of school tracking systems is that their ability to transition students between tracks varies significantly over time. Domina et al. [36] refer to this aspect of school tracking as "track stability," highlighting the fact that students have few opportunities to move up or down the tracking ladder. Often, placement on the tracking ladder rungs is rigid and inflexible. As a result, mathematics has developed into a significant gatekeeper in the high-school curriculum [37,38].

Harding et al. [39] consider that sometimes a family knows exactly what they want for their child, but educators may not believe that they have the necessary

knowledge to make the best decision for their child's future. This misalignment between a parent's expectations and those of the educator can result in epistemological barriers. Mathematics' role as a gatekeeper can have an impact on students' ability to enroll in honors or advanced placement mathematics and science courses [40,41]. Inevitably, this results in students being unable to apply for STEM-related college majors, effectively excluding them from potentially lucrative economic opportunities. Within this context, tracking in public school transitions to economic inequality. Most educators do not see this as racially biased but rather as a convenient way to group students with similar abilities; however, when looking at data from the highest-tracking classes (honors, advanced placement, and gifted and talented), the majority of the students are White [42].

Additionally, the implications for improved student learning outcomes differ depending on the level in high school. Among the many educational advantages that students in high-track classes enjoy over their low-track counterparts are the opportunities to interact with and learn from high-achieving peers, high expectations from educators, and rigorous instruction [36,43] The low-track placement of students of color makes them the least likely to be provided with these opportunities [44]. Mathematics functions as a significant gatekeeper within the United States K-12 schools, thus reinforcing social reproduction by limiting access to advanced coursework and economic opportunities for marginalized students.

Tracking begins as early as kindergarten, perpetuating rigid academic hierarchies that disproportionately disadvantage students of color, thus reproducing racial and socioeconomic inequalities.

2.4. Special education

Additionally, when special education needs of students and the tracking system are coupled, Black students (1) are disadvantaged by lesser quality academic programs [45]; (2) are limited in their opportunities to take courses that prepare them for college or high-wage careers, which leads to lower high school graduation rates and decreased access to postsecondary opportunities [46,47].

Hirano and Rowe [48] state that many factors can contribute to low expectations of students, including implicit bias and even overt bias in the form of racism or classism when special education accommodations are necessary. Students of color are disproportionately represented in special education [49–51] and continue to be significantly underrepresented in identification for gifted and talented education [52–54]. Holler and Zirkel [55] assert that schools often provide 504 plans instead of individualized education plans (IEPs) to students who may require additional support. The 504 Plan is designed to make sure that a child with a legally recognized disability who is enrolled in an elementary or secondary educational institution receives accommodations that will ensure academic success [55,56]. These theories are the underpinnings for interpreting participants' narratives in this study.

Booth-Womack et al. [57] demonstrate that a group of Black American parents (n = 20) actively engage in adult workshops while their children participate in a local university's Saturday morning STEM enrichment program. Parents assist their children with mathematics problems on computer-based software during the week [57].

In collaboration with parents, this university-based enrichment program aims to improve mathematics proficiency in elementary and middle-school students. This may suggest that when goals are clearly articulated to parents and they believe that the program's organizers have a vested interest in seeing their child succeed, Black parents may be more inclined to take part in such enrichment activities. Some parents educate their children outside of school because they oppose the mastery of knowledge discourse that is prevalent in the school system and the exclusion it implies [17]. Furthermore, parents can act as influential educational change agents, as evidenced by Head Start studies, which consistently demonstrate that parents actively advocating for their children's educational needs [58].

3. Conceptual framework

This study employs a critical lens to examine how systemic inequities shape Black mothers' experiences advocating for mathematics in public education. The study integrates the concepts of motherwork Collins [26] and culture of power Delpit [16] to illuminate the mathematical advocacy of Black mothers. Motherwork [26] is a framework that demonstrates Black mothers' relentless commitment to ensuring their children's educational survival and success. Additionally, drawing from Delpit's [16] notion of the "culture of power," this analysis illustrates how implicit norms and communication codes embedded within schools systematically marginalize non-dominant groups. These hidden norms create epistemological barriers through hidden curricula and tracking systems, which complicate mothers' advocacy efforts. The conceptual framework for the Black mothers' narratives in this study is grounded in the theories of Delpit [16] and Collins [26]. These frameworks offer a lens through which to gain a comprehensive understanding of their acts of resistance and provide a systemic critique of public education.

3.1. Sample

Participants included three Black mothers aged 35–55 from diverse socioeconomic and educational backgrounds. These moms and their children are participants in a university Saturday STEM enrichment program. This data is taken from the focus interviews of three Black moms. The program aims to increase the number of students who are eligible to enroll in Algebra I by the seventh grade. The children's component of the program consists of computer-based instruction with ALEKS and a STEM project. The parents participate in parent sessions where they learn about a wide array of topics, from teaching their child common core mathematics to better sleep habits, problem-solving, and growth mindset. Pseudonyms are used to protect the participant's confidentiality.

3.2. Methods

This qualitative study uses an analysis of narratives method to explore the lived experiences of three Black mothers whose children participate in a university STEM enrichment program. I examined specific themes using analysis of narratives, paying close attention to relationships between categories [5]. Using a purposive sampling method [59], I recruited three Black mothers with children who are enrolled in a

university STEM enrichment program [57]. The participants were selected based on their completion of the consent forms and their ability to attend the virtual group interview session, which was conducted via Zoom. The mothers who participated were informed of my positionality as a mother of two Black girls attending public school and a former middle grades and secondary mathematics teacher. This aligns with the approach used by Powell and Coles [60], who employed an "altar call" sampling method with Black mothers. In their study, the researcher made their background known to participants and invited them to share in a safe and supportive space. Similarly, in this study, participants were invited into a space where they could openly share their experiences. By situating myself both as a researcher and a participant in this program, I am afforded a unique perspective. I can understand the phenomenon of interest from the participants' perspective, adopting an emic or insider's viewpoint, as opposed to an etic or outsider's perspective [61].

The mothers come from a variety of socioeconomic backgrounds, and all have completed a 2-year or 4-year college degree. Their ages range from mid-30 s to mid-50 s who are Indiana residents. I gathered data through in-depth group interview with parents, personal observations, field notes, and videos. During the 1-hour semi-structured group interview, I began with an open call for participants to share challenges they faced in supporting their child's educational opportunities, support they received in mathematics as children, the consequences of that support or lack thereof in mathematics classes, and the ways in which their experiences contrasted with those of their own children. Participants engaged in a friendly conversation responding to each other without interruption from me as they shared their experiences. Observational data, surveys, field notes, and interview data were transcribed and coded. To enhance validity and reliability, I triangulated the data. Member checking was done with one participant after the group interview to check the validity of the results. By comparing and contrasting these diverse sources, I ensured a comprehensive understanding of the Black mothers' experiences advocating for their child's mathematical success.

Using Otter.ai (commercial transcription software), the interview with the focus group was transcribed. All participant words were included, and no cleaning was performed. I compiled field notes and oversaw data management. Analysis of the parent transcripts with NVivo (licensed software) yielded thirteen distinct themes. During the first cycle of coding, I used descriptive coding [62]. The themes were coded in the following manner: (1) adversarial relationships with school personnel; (2) code switching; (3) discrimination; (4) tracking; (5) inequitable disciplinary practices; (6) negative math experiences; (7) positive math experiences; (8) parental advocacy; (9) parental intervention; (10) positive relationships between parents and teachers; (11) school deficiencies; (12) special education discrimination; and (13) child test anxiety (See **Table 1**).

Table 1. First cycle coding.

Theme	Definition	Supporting Quotes	Code
Adversarial Relationships with School Personnel	Conflicts between parents and school personnel, often involving miscommunication	"I went to the principal. I did say tracking and he was like, 'We don't really do certain things until they are in the eighth grade."	School Conflict, Barriers to Access, Power Struggles
Code Switching	Parents adjusting language, tone, or behavior	"There are honor classes for math and maybe I'm not explaining it correctly." "Can someone tell me how to communicate with these people?" "Advocacy is important. We don't know what we are walking into. There are certain words that they use in education."	Language adaptation, cultural navigation, survival strategies
Discrimination	Instances where, from the parental perspective, there may be a slight.	"My child has the grades and the scores, yet they still require another test before he can enter advanced math."	Unequal Opportunities
Tracking	The system of grouping students by ability levels.	"I noticed the tracking after he got to 1st grade." "I had my son tested for high ability in 1st grade because I saw he was getting bored and finishing his work really fast."	Academic Gatekeeping, Placement Bias
Inequitable Disciplinary Practices	Perceived harsher disciplinary measures.	"The principal said that she would address this. Oh, and now my child is getting a phone call from home. The backlash is on the kid and you don't want to create that animosity. You know what I mean and sometimes educators take the aggression out on the kid. Now, I quote, I told the boss, Now, my child has behavioral issues."	Punitive Policies, Classroom Management
Negative Math Experiences	Students experiencing anxiety, disengagement, or alienation due to past negative encounters with math instruction or assessment.	"My son is always good at math. I remember he came to me about his day. He was upset. They were working on some routine math problems. He continues to provide the right answer. The teacher assistant said that he needed to give other people an opportunity to answer the questions. He said that he wished he never had answered the question."	Math Anxiety. Disengagement.
Positive Math Experiences	Positive reinforcement, motivation or achievement in math.	"My child likes math." "My son is always good at math."	Math Confidence, STEM Engagement
Parental Advocacy	Parents advocating for their child's access to better classes or educational resources.	"You don't run to the principal until you go to the classroom. That is the teacher's space. We all need to talk to the teacher first."	Educational Advocacy
Parental Intervention	Direct parental action to intervene in the child's education, requesting meetings, contacting teachers or administration.	"I had my son tested for high ability in 1st grade. They told me he was testing above grade level."	Direct Parent Action, System Navigation, Escalation
Positive Relationships Between Parents and Teachers	Instances where parents and teachers establish beneficial relationships for the student.	"How do we establish good relationships with the teacher and is there anything my child should be doing?"	Teacher Collaboration, Supportive Relationships, Student Success
School Deficiencies	Lack of transparency in communication or poor communication.	"I went to the principal. I did say tracking and he was like, We don't really do certain things until they are in the eighth grade."	Systemic Barriers, Administrative Challenges
Special Education Discrimination	Issues surrounding special education accommodations.	"We are all working for our child and the student may not be doing well and the child struggles to achieve work, and I worked with the child to get a 504 and some of the schools are not willing to give accommodations."	Special Education Bias, Limited Access, Gifted Program Exclusion
Child Test Anxiety	Anxiety caused by high-stakes testing. Performance pressure that leads to stress.	"The students can be held back. It makes the kids more afraid than anything. If I don't do this one thing right. It's a burden on them. Lila [the child] has brought the test up and they sent us a practice test. I have to calm that down."	Testing Pressure, Academic Stress

During the second cycle of coding, I merged overlapping narratives involving discrimination and adversarial relationships with school personnel into a single code (See **Table 2**).

Table 2. Second cycle coding.

Second Cycle Themes	Description	Supporting Quotes	First Cycle Codes
Early Tracking Initiatives	Experiences and observations about how tracking begins as early as elementary school and how it can shape academic trajectories.	"I noticed the tracking after Charlie got to 1st grade… and now in the 4th grade.	Tracking, Academic, Gatekeeping, Placement Bias
Gatekeeping in Advanced Courses	Barriers parents face when seeking advanced placement for their children, which includes misinformation and lack of transparency from school personnel.	"My child has the grades and the scores, yet they require another test."	Systemic Barriers, Lack of Transparency, Educational Advocacy
Code Switching in Advocacy	Adapting communication style or behavior to navigate the school to advocate for their children.	"Using my calm voice… I have had to learn not to attack." "There are honor classes for math and maybe I'm not explaining it correctly."	Code Switching, Language adaptation, cultural navigation, survival strategies
Negotiating with School Personnel	The tension and strategy involved in direct interaction with educators and administrators during the advocacy process.	"I wanted to snatch the teacher from across the table… This is my child."	Adversarial Relationships, Parent School Communication

4. Results

The three most prevalent themes in their interactions with public education were: (a) tracking (25.66 %), (b) parental advocacy (14.7 %), and (c) discrimination (14.48 %). Discrimination in comments was interpreted as when participants retold narratives of being denied information or when school personnel blocked access to programming.

In the tracking theme, participants discussed not understanding how the tracking system in public schools operates, advocating for their children to gain access to advanced math programs, and the levels of discriminatory practices by school personnel when attempting to gain information about high-ability math programs, which even rose to the level of lying by school personnel. Based on the results of the NVivo analysis, this paper will focus primarily on tracking, parental advocacy, code switching, and discrimination. Due to the limited size, I acknowledge that the results are not generalizable.

M/others' advocating vs. mathematical gatekeepers

Alyssa is in her mid-30s. Her son is an honor roll student and enjoys playing football. She speaks candidly about her pride in his excelling academically and athletically, as his interest in mathematics has improved since enrolling in the university STEM program. Her long-term goal is for him to graduate from college.

"I went to the principal. I did say tracking and he was like, "We don't really do certain things until they are in the eighth grade." I was looking at some of the kids and I see my child is still in the same classes. When he was in the second or third grade, he took a test. And then he took that test and he passed that, and he did good. There are honors classes for math and maybe I am not explaining it correctly. I pray that my son will gain confidence in his math skills."

In the theme of educational pathways, Alyssa specifically went to the principal and asked about tracking and placement of her son, a fifth grader, into a more advanced mathematics course. She was told that tracking did not occur until the eighth grade. This statement by the principal is untrue. According to the Indiana Department of Education website, tracking begins in kindergarten. This statement by the principal can also be classified as discriminatory due to the untruthful nature of the statement. Furthermore, Alyssa's narrative intersects with parental advocacy. Alyssa's tone was introspective, and she appeared confused by her interaction with the principal because she said, "Maybe, I am not saying it correctly." Alyssa noticed her child excelling in mathematics and standardized tests. She attempted to learn more about her child's placement in an advanced mathematics class and inquired about the tracking system. In general, parents who participate in the university-based STEM enrichment program [56] have a limited understanding of how to prepare their children for college and honors or advanced placement programs. Alyssa expressed frustration with a system that she does not fully understand.

Educational pathways are inconspicuous and often go unnoticed by parents. When parents begin to realize the structure of the mathematics placement, students are already installed onto the rungs of the ladder, and upward mobility can be challenging. Alyssa was specifically concerned about the placement of her child into more challenging mathematics classes, and the principal denied the existence of advanced mathematics courses and spoke untrue statements. However, the various tracks for grade levels are listed on the Indiana Department of Education website as high ability [63]. We learn that Alyssa prays for her son's confidence to improve in mathematics on a written survey. Her act of prayer reflects the urgency of her advocacy, highlighting a reliance on divine intervention to overcome systemic obstacles.

Alyssa was never afforded an explanation of the rules. Anita described the same outcomes as she quickly chimed in, "I noticed the tracking after Janie got to first grade. Only now, in the fourth grade, her grades are dropping because there are more children in the classroom and it kind of bothered me, but I hope to get her back on track." Anita is cognizant of the system but trying to get her child back on track. She recognizes that she can use educational pathways to aid in her child's mathematical development. In this context, Anita is learning the codes and frameworks because this will help her child have upward mobility in a system that continues to marginalize Black moms' efforts. Anita is beginning to create her own frameworks to decode the system [16].

Mothers like Alyssa are aware of educational pathways and support their children to defy expectations associated with tracked mathematics curricular access. For example, Megan's daughter enjoys music and is beginning to see success in mathematics. Elena plays violin in the school orchestra and enjoys spending time with family outside of school. Megan is in her mid-50 s and holds a graduate degree. She describes herself as highly involved in her daughter's education.

Megan provided a lengthy description of her struggles with the public-school system.

"I have had to advocate for my child and I know that we talk about that mindset and growing into the mindset and not looking for that letter grade. It's a quagmire. The schools are looking for grades. Twenty-First Century Scholars [a program designed to provide up to four years of in-state undergraduate tuition to income-eligible students]

are looking for grades and she can't get it [access to the supports in Twenty-First Century Scholars] until she has a certain GPA. Sometimes we speak of reasonableness. Sometimes it feels like on the parent's side, "Why can't my child learn this?" I do go to a counselor and look at what I am advocating for my student. Lots of pressure too. Indiana doesn't spend a lot of time on math. They just have to go through so much math. I will even call the board of education. I am trying to get understanding so that I can help my child. School is about educating them. Using my calm voice."

We are all working for our child and the student may not be doing well and the child struggles to achieve work and I worked with the child to get a 504 and some of the schools are not willing to give accommodation. I have had to learn not to attack. I didn't know she was struggling. I didn't like the way he (the counselor) was talking to the student. Advocacy is important. We don't know what we are walking into. There are certain words that they use in education."

Similarly, Megan reported trying to advocate for her child and reported similar levels of frustration. Megan is a mother advocating for her child and working with the school to draft a 504 plan to ensure that she has the appropriate learning environment for her child with special needs. She demonstrates passion and clearly states that she is using a calm voice to express her frustration with an oppressive system that she believes is ignoring the needs of her child. It appears that her calls for help go unanswered. Megan does not know the correct vocabulary, i.e., codes [64] to advocate for her child. Delpit [16] refers to cultural capital as the accouterments of middle-class values. The inability to know the codes to negotiate within a system affords mothers like Megan less cultural capital. Although she has a master's degree, it does not give her an advantage when it comes to advocating for her child. Ultimately, she only wants an equitable education for her child, just like everyone else's child gets. The complex maze of rules and vocabulary inhibits parents from understanding how to support their child in a public-school setting. Parents continue to be subjected to discriminatory experiences that are situated in a racialized context, according to Martin [11], despite their efforts to become doers of mathematics and advocates for their children's mathematics learning.

At one point during the session, Megan's frustration became palpable. She exclaimed, "Can someone just tell me how to communicate with them?" Megan has not been able to engage in successful code-switching with school personnel. Her statement shows the epistemological barriers that she faces when talking to administrators. She is striving for fair treatment for her child, but the intricacies of navigating educational pathways are overwhelming. In their study, Domina et al. [36] acknowledged the difficulty of overcoming educational pathways stability in K-12 public schools. Their research indicates that once a student enters a pathway their placement is static. Megan's advocacy brought attention to the fact that Elena was unable to move up the academic ladder. Oftentimes, Black females' interest in mathematics is disregarded by teachers. As previously stated, higher tracking classes are predominantly White, as is the case at Elena's school [44].

During the meeting, strategies to establish a positive rapport with teachers were shared, which included calling, emailing, and establishing a positive rapport with the teacher, but it was still frustrating, and I had a feeling that she left the meeting confused and yet still with the sinking feeling that she would not be able to help her child.

Ultimately, Alyssa's child earned placement in Algebra 1 in the eighth grade. She was excited that she was able to break down that barrier to help her child overcome because Black mother's communication efforts with school personnel are often met with marginalization. School officials may be unwilling to open the doors to more advanced math courses to their children, and the lack of communication they exhibit is only a symptom of the problem.

Mothers like Megan, Alyssa, and Anita know that there is a dominant power structure within the school and attempting to navigate hidden frameworks has been exhausting and overwhelming for them.

5. Discussion

The mothers' voices in this qualitative study offer a counter-narrative, that Black mothers are active and present in their child's educational journey. I assert that their stories are not unique and might be representative of other Black mothers' experiences and roles in advocating for their children. The mothers in this research are actively seeking out resources to help their children obtain an enhanced educational experience in elementary and middle school. Although their experiences in motherwork are draining, they remain resilient in the face of adversity [16]. As noted in the findings, advocacy for resources within the tracked system that may be unfamiliar to many outside public school is a challenging undertaking.

Faced with a wall of opposition, these moms have a strong sense of defiance toward a system that marginalizes their efforts, and they are ready to step into that quagmire. These narratives provide an epistemological foundation for improving the trajectory of Black students and changing how public educators interact with the parents of their students. In the three cases, the mothers are fighting against a system that does not recognize their existence. Their feelings of double otherness—mother and minority—push them to become their children's academic champions. In a system that marginalizes their identity, Black mothers seek to understand the rules to advocate for their children. While they cannot fully comprehend the systems against which they are fighting, they have developed a profound awareness of their identity due to their desire for their children to attain better mathematical outcomes.

6. Conclusion

The participants' narratives in this study provide a clearer understanding of the dynamics of educational pathways. As illustrated in **Figure 1**, these pathways highlight the multifaceted challenges that Black mothers face in their efforts for mathematics advocacy. These challenges include the need to navigate educational jargon while negotiating with school personnel, often requiring code switching. While public schools are tasked with the responsibility of educating everyone fairly, there are inequitable structures that exist that create barriers between mothers and the school. The findings of this study are exploratory and not generalizable due to the limited sample size. According to the study's findings, public school personnel should alter their communication with Black mothers and be more transparent about mathematics class academic hierarchies to serve students effectively. By recognizing the existence and experiences of Black mothers and by actively involving them in decision-making

processes, public educators can foster a more inclusive and supportive educational environment. If Black mothers gain a better understanding of educational pathways (tracking system), they will be better equipped to assist their children in increasing their math proficiency, which will likely result in increased representation in STEM fields.

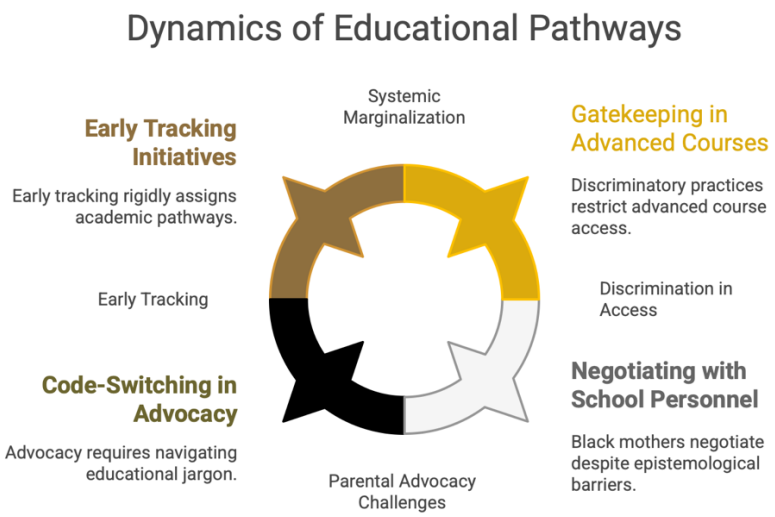

Figure 1. Dynamics of educational pathways.

By centering the voices of Black mothers, this research seeks to disrupt deficit-based narratives and highlight their active resistance and resilience in the face of inequitable schooling practices. The insights provided here offer valuable guidance for educators, policymakers, and administrators who seek to dismantle discriminatory gatekeeping practices, increase transparency, and improve communication with families. These findings are specific to Black American mothers in a United States context. Future research could expand the sample size of Black parents or explore advocacy narratives across different regions within the United States or in other countries. Additionally, including other racial minority groups may provide further insights and enhance the generalizability of these findings.

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