

ABSTRACT

Title of Dissertation: AGAINST ALL ODDS: ACCESS AND
ACHIEVEMENT OF AFRICAN AMERICAN
ADOLESCENT MALES IN ADVANCED
SECONDARY MATHEMATICS

Darrian Tyron McCarter, Doctor of Philosophy,
2019

Dissertation directed by: Professor Andrew Brantlinger, Chair
Department Teaching and Learning, Policy and
Leadership

Adopting a critical race theory stance, this study examined the intersectionality of race, class, and gender and their influence on the educational outcomes of six African American males, who against the odds, have demonstrated success in advance secondary mathematics. Consistent with critical race theory, the purpose of the study was to create counter narratives that push back against dominant narratives about the academic abilities of African American males, specifically in mathematics. This study explored the ways in which this historically marginalized student group self-identify and communicate their social, cultural, emotional, and academic experiences and the development of strategies to navigate environments in which they are underrepresented.

At the broadest level, the African American male participants individually and consistently addressed the following four themes in their semi structured interviews: (1) inequitable [institutional] practices rationalized by the dominant narrative, (2) caring and

influential relationships, (3) early access to enriched and accelerated mathematics curricula, and (4) intrinsic and extrinsic motivators for success. First, the participants collectively spoke of a range of racialized and sometimes gendered barriers (e.g., teachers and peers who doubted the abilities of Black learners) that they faced as African American male learners of mathematics. Second, and in response to these racialized-gendered barriers, they each reported drawing on relationships and positive interactions with their parents, teachers, peers, and African American male role models. Third, all six participants communicated the value added of exposure to high quality schooling experiences to include early identification as strong mathematics students, enrollment in specialized schools and programs, early exposure to rigorous mathematics content, and active participation in extra/co-curricular opportunities. Fourth, and mediated by their relationships and early exposure to advanced mathematics, they all reported developing intrinsic and extrinsic motivations that sustained their success. In terms of the last point, and in their own ways, they were motivated, in part, to push back on dominant, racist narratives regarding the academic abilities of African American males as they navigated implicit racial bias from their teachers, peers, institutional practices, and the larger society.

AGAINST ALL ODDS: ACCESS AND ACHIEVEMENT OF AFRICAN
AMERICAN ADOLESCENT MALES IN ADVANCED SECONDARY
MATHEMATICS

by

Darrian Tyron McCarter

Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2019

Advisory Committee:

Professor Andrew Brantlinger, Advisor and Chair

Professor Lawrence Clark

Professor Tara Brown

Professor Daniel Chazan

Professor Julie Park

© Copyright by
Darrin Tyron McCarter
2019

Dedication

“For I know the plans I have for you,” declares the LORD, “plans to prosper you and
not
to harm you, plans to give you hope and a future.”

Jeremiah 29:11

Dedicated to My Parents

Mrs. Carolyn Denise Jones

And

Mr. Dexter Tyron McCarter

With Honor and Love

Table of Contents

Dedication	ii
Table of Contents	iii
List of Tables	v
Chapter 1: Introduction and Background.....	1
Significance of the Study	1
Statement of the Problem.....	4
Purpose of the Study and Research Questions.....	7
Definition of Key Terms	8
Chapter Conclusion.....	11
Chapter 2: Literature Review.....	14
The Achievement Gap	14
The Dominant Narrative	15
Inequitable Practices and Outcomes Justified by Dominant Narrative	16
Deficit Thinking and Lower Academic Expectations.....	17
Academic Tracking.....	18
Pedagogy of Poverty	19
Systemic Demoralization	21
Low Graduation Rates	22
Disproportionate Access to Higher Level Mathematics	23
Critical Race Theory	25
Counter Narratives of African American Males Success	27
Counter Narratives: Relevant Stories of Success.....	30
Chapter Conclusion.....	35
Chapter 3: Methodology	37
Research Design and Methods.....	37
Narrative Inquiry.....	38
Role of the Researcher	39
Research Questions	41
Participant Selection Criteria and Recruitment Process	41
Selection Criteria	42
Recruitment Process.....	43
School Overviews	45
Data Collection and Analysis.....	47
Data Collections.....	47
Narrative Data Analysis	51
The Pilot Study	54
Location and Participants.....	54
Objective	55
Data Collection	55
Pilot Conclusion.....	59
Chapter Conclusion.....	60
Chapter 4: Findings Illustrated Through an Analysis of Salient Themes.....	62
Inequitable Practices	62
Specialized Schooling.....	63

Table of Contents (continued)

The Pressures of Being the Select Few.....	65
Deficit Thinking and Lower Academic Expectations.....	68
Negotiating Stereotypes about Black Males.....	70
Caring and Influential Relationships.....	73
Parental Support and Advocacy.....	74
Caring Teachers.....	78
Positive Peer Support.....	80
Early Access to an Enriched and Accelerated Mathematics Curriculum.....	83
Early Identification as Mathematically Advanced.....	84
Rigorous Course Enrollment.....	85
Extra-Curricular/Co-curricular Opportunities.....	86
Motivators.....	88
Self-Efficacy.....	89
Creating a Counter Narrative.....	90
Academic Lineage.....	91
College and Career Aspirations.....	92
Chapter Conclusion.....	94
Chapter 5: Findings Illustrated Through Participant Narratives.....	96
Adrian’s Narrative.....	97
Chris’s Narrative.....	108
Eric’s Narrative.....	116
Greg’s Narrative.....	126
Javian’s Narrative.....	135
Nick’s Narrative.....	142
Chapter Conclusion.....	155
Chapter 6: Discussion and Implications.....	156
Summary of Key Findings.....	158
The Role of Relationships.....	159
Access to Rigor, Achievement, and Greater Opportunities.....	165
Cultivating Positive Academic Identities.....	168
A Complex Narrative.....	170
Limitations.....	172
Implications and Future Research.....	174
Implications for Policy and Practice.....	174
Future Research.....	176
Chapter Conclusion.....	178
Appendices.....	180
Appendix A.....	181
References.....	186

List of Tables

<u>TABLE</u>	<u>PAGE</u>
1. Complete Sample of Participants.....	43
2. Codes for the Mathematical Experiences of High Achieving African American Males	52
3. Pilot Study Coding Table.....	56

Chapter 1: Introduction and Background

According to Howard (2013), “researchers have fallen short in providing a more holistic and affirming account of Black males in education” (p. 57). The dominant narrative about African American male adolescents is characterized by low achievement in mathematics and other subjects, discipline problems, poor health, and limited access to learning support in the home. This narrative is harmful because it promotes victim-blaming (i.e., Black students and parents) and overlooks student resilience in the face of racism and other forms of discrimination.

Consistent with critical race theory and counter-storytelling, this study seeks to provide an affirming and holistic account of African American male students’ experiences with secondary mathematics. Its broadest goals are to promote equitable educational access and academic *success* in mathematics for African American male students. A goal of counter-story methodology is to tell the stories of people whose experiences are not often told; in the case of this study, African American adolescent males. Further, as Solorzano and Yosso (2001) observe, “counter-story is also a tool for exposing, analyzing, and challenging the majoritarian stories of racial privilege. Counter-stories can shatter complacency, challenge the dominant discourse on race, and further the struggle for racial reform” (Solorzano & Yosso, 2001, p. 32).

Significance of the Study

Success in mathematics is uniquely critical to students’ ability to prosper in the global marketplace, reflected in the fact that mathematics is studied by K-12 students in every developed nation (Baldi, Jin, Skemer, Green, & Herget, 2007). A working knowledge and proficient understanding of mathematics is required to ensure that students have access to and the ability to succeed in college and thrive in an increasingly

high-tech workplace (Educational Testing Service, 2007). Mathematics lays the foundation for inquiry in many disciplines and has long been recognized as one of the fundamental building blocks of formal education (Gowers, 2002). Educators, students, and families must understand that, even for those who do not plan to attend college, success in foundational mathematics is necessary (Isaacs, Sawhill, & Haskins, 2010), and many assume its necessity is increasing. As expectations for students to meet high academic standards have risen over the past two decades, so have the expectations for students to complete, and excel in, more rigorous mathematics courses (Leinwand, 2012).

Many states and school districts have been aggressively pushing for a larger and more diverse pool of students taking Algebra I before entering high school. According to the Civil Rights Data Collection (2018), across all grades, approximately 4.4 million students were enrolled in Algebra I during the 2015–2016 school year. During this year, the CRDC reported there were nearly 30,000 public schools in the United States that served students enrolled in either grade 7 or 8. Of the schools with 7th-graders, approximately 21 percent offered Algebra I classes. Of the schools with 8th-graders, approximately 58 percent offered Algebra I. As schools push for college and career readiness for their students, these numbers continue to rise. Gamoran and Hannigan (2000), cautioned that there would be a need for more teacher professional development as the pool of students for early entry into Algebra I became more diverse. They contended that the greatest professional development need was around combating teachers' beliefs about who can succeed in Algebra I.

According to the National Council of Teachers of Mathematics (2014), educational policies historically limited eighth-grade Algebra to a select group of

students who demonstrated an above-average mathematical performance. During the standards reform movement in the 1990s, NCTM challenged schools to examine longstanding curricular policies that restricted early (i.e., eighth grade) study of Algebra to selected students while withholding it from others based on readiness. Concurrently, the NCTM advised schools to increase the rigor of mathematics instruction in earlier grades, back mapping into elementary grades (Kindergarten thru 5th grade), to create an infrastructure for readiness among the student population and to open the doors to Algebra I for more students in eighth grade (Spielhagen, 2006). The push for early algebra is evident in the Common Core State Standards for Mathematics in which informal algebra topics are woven into the elementary mathematics curriculum.

Furthermore, Algebra I is widely accepted as a critical gateway to pre-collegiate mathematics courses and career opportunities in science, technology, engineering, and mathematics (STEM) related fields (Chen, 2009; Gladioux & Swail, 2000; Matthews & Farmer, 2008). In addition to providing students with the opportunity to pursue STEM majors in college and STEM careers later in life, the completion of Algebra I can provide students with a host of other tangible benefits. For example, Gamoran and Hannigan (2000) found that early enrollment in Algebra I was correlated with higher cumulative achievement in mathematics by the end of high school. The earlier a student proceeds successfully through Algebra I, and then on to courses such as Geometry and Algebra II, the more opportunities he or she has for reaching higher level mathematics courses such as AP Calculus in high school.

Statement of the Problem

It is widely recognized that the disparity in mathematical access and achievement between African American male students and their middle class European American counterparts is large and growing. According to the CDRC, White students constituted 58 percent of the students enrolled in Algebra I in Grade 8 while Black students represent only 11 percent. Of the total population of students who passed Algebra I in Grade 8, 64 percent were White, and 9 percent were Black. Many educators and policy makers are not aware of, or simply do not take into consideration, the vast historical, social, emotional, and economic factors plaguing minority students, specifically, African American students and, even more specifically, African American male students. School systems often fail to meet the needs of students from diverse backgrounds, are not prepared to effectively teach students from lower socioeconomic areas, and fail to sustain their students' cultural heritages (Irvine, 2003; Sleeter, 2001). This is due, in part, to the fact that White educators, over-represented in teaching, lack experiences with students from ethnic, linguistic, socioeconomic, and cultural backgrounds different than their own (Lazar, 2007; Mysore, Lincoln, & Wavering, 2006).

Woodson (1919) presented a narrative of the education of African Americans during the colonial period of the mid-eighteenth century. His work analyzed the debate among Whites about whether to permit enslaved African Americans to participate in and benefit from formal public education. Powerful Whites, slave owners in particular, initially conceived that African Americans would be better suited to their roles and duties as a slave if they were educated. However, through a series of conversations and observations regarding literacy and education, plantation owners abruptly called for the

termination of formalized education for African American slaves for two reasons: the global industrial movement and the belief that educated Black men were a greater threat to the social order than uneducated Black men (Woodson, 1919).

Dubois (1903) provided an in-depth analysis of the psychological and emotional implications of African American males' attempt to awaken social consciousness within the context of a racialized America. Dubois offered work on "double-consciousness," through which Blacks most not only view themselves from their own unique perspective, but through how they are perceived by the outside White world. This continues to speak to the frustration and agony of African Americans having to develop their identities through the lens of White hegemony. Dubois not only provided a narrative of America's overt disenfranchisement of underserved communities, but it offered education as an impetus for empowerment and restoration.

Revealing the genealogy of the African American struggle for educational attainment reminds scholars and educators that the achievement gap cannot be fully explained as a matter of individual ability or effort. Rather, it is rooted in centuries of unequal distribution of privilege, power, and knowledge that has hindered African Americans from reaching their fullest intellectual potential. The African American struggle for educational attainment is therefore rationalized through racist narratives about Black inability and lack. The experiences of African American males in particular, including in mathematics classrooms, are shaped by social, psychological, and cultural challenges derived from their unique socio-historic position in the U.S. educational system (Civil & Planas, 2004; Dixson & Rousseau, 2003; Gregory, Skiba, & Noquera, 2010; Terry & McGee, 2012).

As a lasting outcome of historical academic inequities, enrollment and performance in higher level mathematics courses are too easily predictable by race, class, and gender, in the case of certain subgroups like African Americans. It is not surprising that unequal academic access to and preparation in school mathematics between African Americans and European Americans has resulted in racialized opportunity and achievement gaps between them. Adding gender and class to the mix exacerbates that gap.

A major factor in African American males' struggles for academic access is deeply rooted racism. Its effects are often manifested as racial stereotypes, racialized experiences, unequal access to opportunity, and the interrelationship between racial stereotypes and teacher expectations, which are key components in many African Americans' performance in schools, including their participation in mathematics classrooms (Lewis, 2003; Martin, 2009a, 2009b; Moses & Cobb, 2001; Stinson, 2008). African American males have long been disproportionately represented and over-assigned to lower level classes and special education programs (Blanchett, 2014). More broadly, African American adolescent males are often confronted with lowered expectations in schools even when they have shown themselves capable of achieving at accelerated levels (Berry, 2008).

Generally unnoticed and unheard, however, are the resilience and successful academic outcomes of many African American adolescent males in upper level secondary mathematics and other STEM fields (McGee & Pearman, 2014). Research documenting and sharing stories of success is needed with the goal of providing powerful counter stories that work against the myriad negative images of African American

adolescent males. Needed is research that explores the ways in which African American males self-identify and communicate their social, cultural, emotional, and schooling experiences and needs as they access and achieve in upper level secondary mathematics against the odds and what they attribute as the most influential factors to their academic success. This is needed for educators, policy makers, and researchers to better program and support African American males' access and achievement in mathematics.

Purpose of the Study and Research Questions

The purpose of this study is to identify and document the personal, familial, cultural, social, and schooling experiences that African American males name as having the most effect on their access to and achievement in higher level secondary mathematics courses, specifically successful completion of Algebra I in middle school and access to AP Calculus in high school. Adopting a critical race theory stance, this study aims to create counter narratives that push back against dominant narratives about the mathematical and academic limitations of African American adolescent male students. This study also examines the intersectionality of race, class, and gender and its influence on the educational performance of African American males. To be clear, researchers using a critical race theory (CRT) lens and other critical multicultural educators engage in countering negative, victim-blaming stories about African American adolescent male underachievement and misbehavior – negative stories promoted, or at least not countered, by the general education and achievement gap literatures (Gutierrez, 2008; Martin, 2009).

Further research is needed that explores how policymakers, district leaders, and school systems should equitably respond to the needs of African American males in mathematics. Important information can be gained from comparing student perspectives

with current reform ideologies, interventions, programs, and school policies. Ultimately, this can inform a process for creating relevant professional learning programs and resources that support student needs, for the educators and policymakers alike.

Three research questions guide this investigation:

1. What are the thoughts, feelings, and lived experiences of high achieving African American adolescent males who have demonstrated success in advanced high school mathematics courses?
2. What are the most influential factors that high-achieving African American adolescent males attribute to their access and achievement in advanced high school mathematics?
3. What individual, institutional, and societal barriers do high-achieving African American adolescent males report having to navigate during their pursuit of access and achievement in advanced high school mathematics courses?

Definition of Key Terms

The following definitions of terms will assist the reader in understanding the complexities of qualitative research methods proposed in the study as well as specific definition:

Achievement Gap. The achievement gap is a significant disparity in educational achievement among groups of students as determined by a standardized measure (e.g., standardized tests). When analyzed according to race or ethnicity, achievement disparities negatively impact children of color on a consistent basis.

Advanced or Upper Level Mathematics Courses. Rigorous math courses beyond what is required for graduation (Algebra I, Algebra II, and Geometry). For this study AP Calculus is identified as the advanced or upper level math course.

Advanced Placement (AP). High school courses identified as having rigor equivalent to those offered for college credit.

African American: African Americans (used interchangeable with Black in this study) are an ethnic group of Americans with total or partial ancestry from any of the Black racial groups of Africa. The term typically refers to descendants of enslaved Black people who are from the United States. All participants in this study self-identify as being Black or African American although some of them are second generation immigrants from Africa or a Caribbean nation.

Algebra I. A mathematics course taught in K-12 schools with emphasis on equations (e.g., linear and quadratic), quantities and relationships, expressions (variables, operations, and numbers), and arithmetic operations.

Deficit Thinking. Assumptions that low income children, children of color, and their families are limited by cultural, situational, and individual deficits that schools cannot alter. As a result, these children received fewer educational and social advantages (Oakes, 1995).

Educational Equity. Educational equity is a trending topic among educational researchers and reformers. Tokunaga and Douthirt-Cohen (2012) defines educational equity as equal achievement to. What this suggests is that individuals with similar levels of schooling, regardless of subgroup, should have similar levels of access and achievement.

Minority. The American Heritage Dictionary of English Language (2000) defines minority as a group who differs in race, religion, or ethnicity from the majority. European Americans has historically made up the majority within the school district from which participants in this study are drawn. Although students' demographics have drastically changed in the district, African Americans still have the greatest numbers. The minority group to be considered for this research is African American males.

Parental involvement. Parental involvement is also known as parental engagement. In its broadest understanding it involves creating ways to help parents understand how to support students' achievement. It is also a required component that Title 1 school have in place to receive special funding (Epstein, 2005).

Resiliency. The ability to recover from a stressful event or some other adversity that is not necessarily an event but more of a life circumstance, such as living in an economically impoverished community (Ungar, Brown, & Liebenberg, 2007).

School climate. The character and quality of life within a school that is shaped by its organizational structure, physical environment, instructional practices, interpersonal relationships, and overarching values, objectives, and customs (Cohen, McCabe, Michelli, & Pickeral, 2009). Positive school climates have been linked to increased academic performance and social skills among students and the retention of quality teachers (Keiser & Schulte, 2009).

Socioeconomic Status (SES). The American Heritage Dictionary of English Language (2000) defines socioeconomic status as an individual's or group's position both economically and socially. Several variables determine SES, including occupation, education, income, wealth, and place of residence. Students in this study will be of low

socioeconomic status if their family incomes qualify them for Free and Reduced Meals (FARMS).

Standards for Mathematical Practice (SMP). Make sense of problems and persevere in solving them, reason abstractly and quantitatively, construct viable arguments and critique the reasoning of others, model with mathematics, use appropriate tools strategically, attend to precision, look for and make use of structure, look for and express regularity in repeated reasoning.

Chapter Conclusion

August 2016, I sat in front of some very high-level district administrators in a well-known and high achieving suburban school district. As we discussed my new role and expectations as the supervisor of secondary mathematics, some facts about racialized and gendered academic disparities came up. Prior to this meeting, I did some baseline research on the district's mathematics achievement and was very impressed by the marketing of the great initiatives and strides around mathematics achievement. However, when analyzing the data further, I realized the accomplishments of their students were racially disproportionate and followed some of the same trends seen across the nation.

The district also has adopted interventions ostensibly designed to address issues of equity, access, and under-achievement. One of the district's goals for the next couple years was to have 80% of its middle school students successfully complete Algebra I or higher by the end of 8th grade. This goal was set to ensure student access to Algebra II by 10th grade as part of college and career readiness efforts. Students from some backgrounds (i.e., White and Asian) had already exceeded the goal, some were on track to meet the goal, and others were significantly behind every other category of students.

Reflecting national trends, students who were significantly below included African Americans and Hispanics.

I left the meeting with a self-determined charge to learn more about this disparity, the causes and trends, and to find a plan of action to eradicate this achievement gap. As this work is a passion of mine, I wondered if this historically White and affluent, but demographically changing, school district was ready and open to hearing and learning about that which history and research has defined as systematic racism in education.

I tell this story both because storytelling is a part of both narrative inquiry and the critical race theory (CRT) stance, the theoretical perspective I adopt in this study, and because this story underscores an important point within the critical race theoretical paradigm, namely, that racism is still prevalent in U.S. society. Through the lens of critical race theory, the epistemological worldview undergirding this study, an explication of the research context, the role of the researcher as the key research instrument, and the selection criteria of the prospective participants follows. The research design is detailed with respect to the methods chosen for collecting and analyzing study data and ultimately generate counter-narratives that affirms African American males as successful learners of mathematics, including methods for establishing the validity of the study.

In keeping with the spirit of narrative research, findings are presented in two distinct ways with both capturing perspectives that offer recommendations for enhancements. One way is in the form of six in-depth narratives of the experiences of African American adolescent males who have demonstrated successful access and achievement in upper level mathematics, to include highlighted examples of resilience, as each participant navigated multiple forms of inequities simply because of their race and

gender. Another is through an analysis of emerging and recurring themes between participants, specifically elaborating on several salient themes from these students' personal stories of their mathematics-related influences and their perceptions of what contributed to their access to and achievement.

The remainder of this dissertation is organized as follows: Chapter 2 provides a review of current literature. Chapter 3 describes my methodological approach including the use of narrative analysis, semi structured interviews, and restorying. Chapters 4 and 5 presents study findings from in two distinct ways: (1) analysis of emerging and recurring themes between participants and (2) individual participant narratives.

Chapter 6 discusses how the main narrative themes illustrates the range and complexity in experience of the high-achieving African American adolescent male students and how this connects to the research literature and advances the field. Herein, themes within the literature on African American males and their experiences in higher level mathematics course are connected to the narrative responses of participants in this study. Lastly, recommendations are presented to K-12 educational practitioners and researchers of African American adolescent males to utilize as they seek to provide the necessary supports that enable greater access, achievement, and positive experiences in advanced and accelerated instruction.

Chapter 2: Literature Review

This literature review begins with an overview of the disparities in academic opportunities and outcomes of marginalized student populations focusing specifically on those of African American Adolescent males and the dominant narrative that is widely accepted as it relates to their academic abilities and social interactions. I then outline current and historical practices of inequities in American schools that justifies the dominant narrative of this consistently marginalized group of students. Next, I discuss critical race theory (CRT), the theoretical framing of this study which is designed to confront this dominant narrative using counter narratives. Lastly, I synthesize an emerging body of mathematics education literature that offers a holistic perspective of African American adolescent males by intentionally investigating the resilience and success of this population in school mathematics.

The Achievement Gap

Concern with African American academic underachievement and the achievement gap has been consistent (Gutiérrez, 2008). For decades, researchers have examined disparities in the educational experiences and outcomes between White and Black youth. The National Assessment of Educational Progress (NAEP) mathematics results for grade 8 are reported as average scores on a 0–500 scale. The results are reported as achievement levels (Basic, Proficient and Advanced) that show what students should know and be able to do. Students identified as basic score at least 262, 299 is Proficient, and 333 is Advanced.

African American students' mathematical achievement has improved but not significantly and definitely not enough over the past few decades. For example, Black

students averaged scores of 237 and 260 on the 1990 and 2017 grade 8 mathematic NAEP assessments respectively. The disparity in achievement for Black and White students are also worthy of analysis. White students, at the same two points of time averaged scores of 270 and 293 respectively. This correlates to an equivalent achievement gap, with a 33-point disparity, over the last 27 years. On the NAEP 2011 mathematics Grade 8 Assessment, Black male students scored 34 points lower, on average, than did White male students. 2017 results communicate that Black male students scored 33 points lower than their White counterparts, still landing them under the basic marker.

The Dominant Narrative

As briefly mentioned in the previous section and expounded upon here, the narrative on African American adolescent males' academic performance, specifically in mathematics, is dominated by discussions of students' low academic outcomes, discipline problems, and limited access to supplemental learning resources. African American adolescent males are often confronted with low expectations in schools, even when they have shown themselves capable of achieving at accelerated levels (Berry, 2008).

With an overwhelming majority of our nation's teachers being White, our nation's public schools are predicated on a European schooling model, which is ethno-culturally exclusive and shaped on a notion of cultural identity which implicitly includes only those who fit certain versions of European historical roots and cultural heritage (Hansen, 1998). Therefore, racism and its byproduct, stereotyping, are worthy of study. Danny Martin (2003, 2009) has documented this stereotypical, dominant narrative about African American students in mathematics and argues that the clear majority of mainstream

mathematics education research and policy on racial achievement gaps “continues to rely on inadequate and impoverished approaches to race, racism, and racialized inequality” (p. 297).

Studies on racism and stereotype are especially useful for math educators because there exists a prevalent, although subtle notion that math by nature is simply easier for White and Asian males than for all other demographics (Riegle-Crumb & Humphries, 2012). According to Martin (2009), this notion also implicitly suggests that if African American male students are to become more “proficient” and “high achievers,” they must become less African American and more like White and Asian students in terms of their dispositions and values. Such claims underscore the importance of educators’ understanding the role of racism as it relates to African American children (Alliman-Brissett & Turner, 2010).

Inequitable Practices and Outcomes Justified by Dominant Narrative

The dominant narratives of the mathematical access and achievement of African American adolescent males mirror those found in our larger society. Sociologists have coined a term known as “new racism” which reflects the view that racism is a thing of the past, success is a choice offered to all, and Whites today are not responsible for prior historical events and conditions (Bonilla-Silva, 2006; Martin, 2009). This new form of racism without racists justifies disproportionate educational outcomes and harmful practices that work against African American male students’ success in school mathematics and other fields. Six inequitable practices and outcomes justified by the dominant narrative of African American male achievement are identified within the literature: (1) deficit thinking and lower academic expectations, (2) academic tracking,

(3) pedagogy of poverty (4) systemic demoralization, (5) low graduation rates, and (6) disproportionate access to advanced secondary mathematics.

Deficit Thinking and Lower Academic Expectations

Deficit thinking by teachers is one of the most powerful forces working against students of color (Ford et, al., 2002; Grantham & Ford, 2003; Milner, 2006; Pica-Smith, & Veloria, 2012; Thompson, 2004). According to scholars such as Berry (2008), this delimitation by gatekeepers leads one to question the number of capable African American adolescent males who are denied access to a rigorous mathematics course pathway and not provided with the essential supports needed to achieve in higher level mathematics.

Across our nation, African American adolescents continue to experience lower academic expectations than their European American and Asian American counterparts. For example, African Americans, male students, are placed in special education at very high rates (Blanchett, 2014). And, even when they have shown themselves capable of high achievement, they find themselves enrolled in lower level mathematics courses (Lattimore, 2005). Coupled with lower level mathematics course enrollment, many of these students are left with unqualified teachers with fixed mindsets of their inability to academically perform; under resourced classrooms, schools, and communities; and negative racial stereotypes (Brantlinger, Cooley, & Brantlinger, 2010; Terry & McGee, 2012). African American students are provided relatively low access to high-level mathematics courses and this certainly shapes their lower performance (Lubienski & Crockett, 2007). The complication of identification and placement of African American students in Algebra 1 compounds their systemic underachievement.

Academic Tracking

The over classification of African American students, specifically males, being labeled as “at risk” and/or placed under the umbrella of special education developed out of the discourse of deficiency (Blanchet, 2006). These labels have been used to justify the tracking of many African American male students, placing them in disproportionate numbers into lower track and special-education classes. The more racially diverse a school’s composition, the more likely European American and Asian students gain access to honors and AP courses while the majority of African Americans are in special education and lower-track classes (Lucas & Berends, 2002; Tyson, 2011).

Tracking is a practice that has been around for centuries. It is a systematic and institutional practice that allow students to be classified into categories, placed into certain classes, and provided with different expectations of learning (Oakes, 2005). These expectations are based on perceived ability as monitored by assessments, historical performance, teacher recommendations or a combination thereof. At its inception, tracking was implemented to differentiate learning to produce a workforce of individuals with different skills. However, this institutional practice has also always stratified students based on social class, ethnic and racial identity, immigrant status, and gender (Dickens, 1996; Oakes, 2005; Tyson, 2011).

Prior to the Supreme Court’s 1954 ruling in *Brown vs. Board of Education* African American students were found in separate schools that often-lacked equivalent services, resources, and opportunities that were present in White schools. Within White schools during this time, tracking was implemented in a way that social class, gender, and immigrant status determined a student’s academic placement (Tyson, 2011). Philosopher

John Dewey and other progressive educators begin to critique this so-called “democratic and functional” educational system, viewing education as the “great equalizer” bringing tracking under heavy scrutiny. These progressive educators claimed that students in low-tracked classes learned less and declined in self-concept and leadership skills (Kulik, 1992).

A decline in tracking was a result of this progressive thinking of education equality; however, after the *Brown vs. Board of Education* ruling, the institutional practice of tracking re-emerged in full force (Tyson, 2011). According to Dickens (1996) African Americans were now allowed “equal” access in White institutions but racially segregated within schools due to tracking. This practice was legitimized in the dominant discourse because African American students were often given I.Q. tests that enforced the perception that they lacked the ability and skills required to be in higher-track classes.

Regardless of ability or SES, African American students in diverse schools are more likely to be in lower-track classes compared to their White counterparts who are disproportionately enrolled in AP and college prep courses. Additional data suggest that in settings where comparable African American students study alone, they are more likely to enter the school’s college preparatory curriculum (Lucas & Berends, 2002, 2007). Lucas and Berends (2007) found that racially stratified tracks remain in a school until the enrollment of African American students reaches about 59%.

Pedagogy of Poverty

Teaching and learning are critical factors in student achievement. Unfortunately, most math instruction in today’s classrooms is patterned from a middle-class European teaching model that espouses traditional instructional methods, whereby the teacher

presents information as students passively receive the learning. Haberman (1991) coined this discourse of deficiency as a “pedagogy of poverty”. He identified four syllogisms that undergird the pedagogy of poverty (p. 291):

1. Teaching is what teachers do. Learning is what students do. Therefore, students and teachers are engaged in different activities.
2. Teachers are in charge and responsible. Students still need to develop appropriate behavior. Therefore, when students follow teachers’ directions, appropriate behavior is being taught and learned.
3. Students represent a range of individual differences. Many students have handicapping conditions and lead debilitating home lives. Therefore, ranking of some sort is inevitable; some students will end up at the bottom of the class, whereas others will finish at the top.
4. Basic skills are a prerequisite for learning and living. Students are not necessarily interested in basic skills. Therefore, directive pedagogy must be used to ensure that youngsters are compelled to learn their basic skills.

In an article, “The Pedagogy of Poverty Versus Good Teaching” Haberman (2010) identifies consistent and specific teaching acts that constitute the core functions of this misguided pedagogical approach: giving information, asking questions, giving directions, making assignments, monitoring seatwork, reviewing assignments, giving tests, reviewing tests, assigning homework, reviewing homework, settling disputes, punishing noncompliance, marking papers, and giving grades.

In the context of mathematics education, this directive, controlling, and debilitating pedagogy (i.e., pedagogy of poverty) typically faced by African American

students sharply contrasts with the level of teaching advocated through the Standards of mathematical Practices (SMP) guided by The Principles and Standards for School mathematics (National Council of Teachers of mathematics [NCTM], 2000) and Adding it Up (Kilpatrick, Swafford, & Findell, 2001). Demonstration of mathematical proficiency includes problem solving, reasoning and proof, communication, connections, representation, conceptual understanding, procedural fluency, adaptive reasoning, strategic competence, and productive disposition (Kilpatrick et al, 2001; NCTM, 2000).

The SMPs offer characterizations of behaviors and habits that students should demonstrate while learning mathematics which requires teachers to reevaluate their current instruction methods (NCTM, 2010). These behaviors are not and should not occur in isolation but should be viewed as interrelated behaviors (CCSSO, 2010). For example, during a learning task involving modeling, students should be engaging in the practice of modeling with mathematics while at the same time attending to precision. Throughout instruction, students should be reflecting on their mathematical models and revise them as needed, as they identify more ways to precisely (e.g., effectively or efficiently) describe the mathematics. Unfortunately, the promotion of these proficiencies is not evident in every classroom, especially classrooms and courses that many African American males experience (Bostic & Matney, 2014).

Systemic Demoralization

African American children typically begin their schooling with a sense of excitement and a propensity for learning. By 4th and 5th grade, however, African Americans often sense that they are being treated differently than their White peers (Hargrove & Seay, 2011). This perception of rejection and differentiated treatment by

their teachers and administrators often results in their withdrawing from classroom experiences as they become skeptical of their position in the educational setting (Hargrove & Seay, 2011).

As a result, students are switching off, tuning out, and ‘dropping out’ of schools at alarming rates. According to Herbert (2005), only about two-thirds of American teenagers (and just half of all Black, Latino and Native American teens) graduate with a regular diploma four years after they enter high school. “This may be the good news part” proclaimed Smyth (2006) as she predicted even worse would come if no one looked at the proportion of teenagers in American high schools who are “euphemistically classified as being ‘disengaged’” (p. 286).

Low Graduation Rates

According to the school year 2011–12 public high school 4-year adjusted cohort graduation rate (ACGR) for the 50 states, the District of Columbia, and other jurisdictions, Black students had a graduation rate of only 69% compared to the nation and their White counterparts who had rates of 80% and 86% respectively (Stetser & Stillwell 2014). Students not represented are those who are consistently affected by the inequalities of the middle-class institution of schooling (Lipman 2005) and have a perspective of education as being “completely banal, meaningless and without purpose, except as a reasonably pleasant place in which to meet and socialize with one’s friends” (Smyth, 2006, p. 286). Teachers must realize the psychological harm and diminished future potential that occurs when African American boys are disconnected, mislabeled, and disrespected at school (Sampson, 2010).

The aforementioned Schott Foundation for Public Education (2010) report revealed that the overall graduation rate for African American males in the United States was only 47% in 2007-2008 school year. Less than 8% of African American males between the ages of 15 and 29 years were college graduates. This is in comparison to 17% of European American males and 35% of Asian American males in this age group.

Disproportionate Access to Higher Level Mathematics

School personnel should be revered as gatekeepers of power because they possess the greatest influence over who gains access to upper level coursework (Yosso, 2002). When it comes to mathematics education of African American students, some scholars contend that students' civil rights have been infringed upon by the constant and systematic assaults on their opportunities to learn (Esmond, 2009; Martin, 2009; Moses & Cobb, 2001; Oakes, 2005). This misuse of power leads one to question the number of capable African American adolescent males who have been denied access to rigorous mathematics curriculum, pushed off the higher-level mathematics track, instructed through lowered expectations, and not supported with the necessary instructional tools and resources for success

Across the nation, African American students, specifically males, find themselves receiving disproportionate access and opportunity to higher level mathematics courses. While the overall number of students in advanced mathematics courses is increasing, there are clear disparities of students gaining access and experiencing success in higher level mathematics courses and those enrolled in remedial mathematics courses, specifically for African American males (CRDC, 2018).

With respect to race/ethnicity, evidence from the Education Longitudinal Study of 2002 (ELS:2002) Bozick & Ingels (2008) showed that 87 percent of Asian and 79 percent of White high school seniors reached algebra II in high school, compared to 75 percent of Black and 67 percent of Hispanic high school seniors. 25 and 20 percent of Asian and White students, respectively, followed course sequences that contained precalculus, compared to 15 percent of their Hispanic peers and 12 percent of their Black peers. The differences are greater when examining SES. Almost 30 percent of students in the highest SES quartile followed pathways that included precalculus, while only 11 percent of those in the lowest SES did so. This descriptive evidence shows that Blacks, Hispanics, and less affluent students were reaching advanced mathematics courses less often than their Asian, White, and more affluent peers

According to a study on Advanced mathematics and Science Course Taking in the Spring High School Senior Classes of 1982, 1992, and 2004, Dalton et al. (2007) confirmed that the gap between Blacks and Whites in advanced mathematics (precalculus and calculus) enrollment persisted at all points in time: in 1982, 4 percent of Blacks and 12 percent of Whites had completed advanced mathematics, while in 1992 the respective figures were 14 percent and 23 percent, and in 2004 19 percent and 37 percent. In 1982, 1992, and 2004, high SES graduates were consistently more likely than low SES graduates to complete advanced-level coursework in mathematics. Disparities between the highest and lowest SES quartiles in the percentages of students who completed Precalculus and Calculus not only persisted but increased from 1982 to 2004: the gap between the highest and lowest quartiles was 18 percentage points in 1982 but 35 percentage points in 2004.

Understanding that performance and achievement are factors that influence course placement, access and success are also influenced by perceived notions of fairness and objectivity, which includes teachers' beliefs, parental influences, and school practices. These notions negatively influence access to Algebra I at a greater rate for poor students and students of color. African American students' schooling experience including course enrollment are shaped by social psychological and cultural challenges and barriers that derive from their unique socio-historic identity as "minorities" in the US educational system (Gregory, Skiba, & Noquera, 2010).

Critical Race Theory

In an attempt to confront the dominant narratives that exist about African American adolescent male achievement, Martin and other scholars (Berry, 2008; Footé Sykes, 2012; Howard, 2008; Ladson-Billings, 1998; Ladson-Billings & Tate, 2016; McGee, 2009; McGee, 2013; McGee & Pearson, 2014; Terry, 2010; Terry, 2011; Terry & McGee, 2012) have adopted critical race theory as a theoretical framework.

Critical race theory (CRT) emerged mainly in legal scholarship to counter the positivist and liberal legal discourse of civil rights and argues against the slow pace of racial reform in the United States (Bell, 1992; Ladson-Billings, 1998). Since a major purpose of education in the USA is to prepare citizens for democratic participation, CRT looks at how citizenship and race interact. CRT can be a powerful explanatory tool for the sustained marginalization that people of color experience in educational and other institutions (Bell, 1992; Ladson-Billings, 1998).

CRT in education suggests that current instructional practices presume that African American students, as a whole, lack proficiency (Martin, 2007). What this means

is they lack necessary skills to access and achieve at their grade level. As a result, educators are engaged in a never-ending quest for the right strategy or technique to deal with (read control) at-risk African American students. Consequently, instructional approaches for African American students, often, involve some aspect of remediation. A dysfunctional curriculum coupled with a lack of instructional innovation result in students' poor performance on traditional assessment measures (Ladson- Billings, 1998).

The stories of African American adolescent males are rarely heard, or they are told in a way, within non-CRT literature, that places the blame on the student. I chose to adopt CRT because it facilitates the examination and disruption of the disenfranchisement of African American males in U.S. public schools, highlighting the complexities of the mathematical experiences, social realities, and lived experiences of racialized victims through an idea of counter-storytelling.

This notions of voice, narrative, and counter-storytelling have been key in understanding the uncovering the ontology of African Americans, even before the birth of CRT (Terry, 2011). Solórzano and Yosso (2002) provide three general forms of counter-storytelling: (1) those that are: our own stories or narratives told in first-person voice, (2) other people's stories or narratives told in third-person, and/or (3) composite stories or narratives constructed using various forms of data. Solórzano and Yosso (2001) also offer four theoretical, methodological, and pedagogical functions of counter-storytelling:

1. Counter stories build community among the marginalized by personalizing educational theory and practice.

2. Counter stories provide a context within which to challenge and transform the hegemonic wisdoms of those at society's center.
3. Counter stories open new realities to marginalized peoples by helping them envision possible lives.
4. Counter stories teach marginalized people to actualize those new possibilities through synthesizing elements of stories with current realities, thereby producing richer actual lives.

With regards to my goal for this study, narratives will be captured that assert African American male students accessing and achieving in upper level mathematics courses as antithetical to dominant narratives that position them on the margins of schooling as unintelligent, unmotivated, underachievers, and disproportionately labeled as having learning and behavioral disabilities. The narratives collected within studies such as these are in direct opposition to the dominant narrative because they are expressions of ideologies that are themselves in direct contention with one another (Terry, 2011).

Counter Narratives of African American Male Success in Mathematics Education

Within the last ten years, many scholars have argued against the negative dominant narrative of African American students' mathematical achievement (Berry, 2008; Footé Sykes, 2012; Howard, 2008; McGee, 2009; McGee, 2013; McGee & Pearson, 2014; Terry, 2010; Terry, 2011; Terry & McGee, 2012). One important approach has been to identify successes within this marginalized population of students. Academically successful African American students who have historically been viewed as failing, offer important information for mathematics educators, researchers, and policy

makers to develop important insight into the interaction between multiple forms of marginalization and resilience in STEM fields (McGee, 2013). “Focused attention on this ‘under acknowledged success’ can create pathways for intervening in the underperforming urban black male students in mathematics” (McGee, 2013, p.74).

Researchers offer many different theoretical and methodological ways and reasons for studying access, achievement, and the academic experiences in mathematics of African American adolescent males. Berry (2008) chose CRT to guide his work because he found that it facilitates the examination of “the complexities of the mathematical experiences of African American males and CRT's intersection with equity and social justice” (p. 568).

Other researchers, like myself, approach this field of study from a more personal perspective. Tyrone Howard, an African American male scholar, believes he shares in the multidimensional complexities and challenges of inequities and social injustices framed in work by Berry (2008) and McGee and Pearman (2014). Therefore he personally sought out a theoretical framework that would enable him as a researcher to ask the question “How does race and racism influence the current state of affairs for young Black men in PreK-12 schools?”, a theoretical framework that does not have to “make the case” or “explain beyond a reasonable doubt” how and why race matters but instead accepts race and racism as integral parts of life (Howard, 2008, p.959). This personal investment inspired Terry’s (2008) use of CRT as a paradigmatic lens to examine the schooling experiences of other African American males in PreK-12 schools. This study explores the utility and appropriateness of CRT as a methodological tool to examine and disrupt the disenfranchisement of African American males in U.S. public schools.

Terry (2011) organizes a conceptual frame for thinking specifically about the pedagogical intentions and outcomes in counter-storytelling. He thinks of counter storytelling as a synthesis of competing narratives, a unique class of stories that actively engages the central tenets of CRT in the act of storytelling. Additionally, he provides an operational definition of counter-storytelling that can be used when analyzing narrative to further distinguish counter-storytelling from straightforward narration. As such, Terry (2011) claims that a narrative constitutes a counter story when it:

1. Contains a kernel or representation of the dominant narrative such that it communicates a clear understanding of that dominant narrative and its implications to the communicant;
2. Provides the communicant (in the form of a competing narrative that is grounded in a —freedom realty) reasonable and sufficient grounds for contradicting the dominant narrative; and
3. Allows the communicant to access the larger freedom reality toward which the competing narrative pushes.

Terry's (2011) three criteria of counter story telling was applied to Terry and McGee's (2012) study on the development of identity amongst high achieving African American males while identifying factors that led to their resilience and success extracting data from McGee (2009). The goal of their research, aligning perfectly with Terry (2011) was also threefold. The first goal was to challenge the contention that failure and limited persistence in Black male students' access and achievement in mathematics is completely normative or pathological. This was their way of communicating or representing the dominate narrative, setting the foundation for

opposing reality. The second goal was to highlight the agency and achievement black male students who face many inequities in their schooling experience. Again, this communicates a competing narrative that intentionally contradicts the dominate narrative: phase two of Terry (2011) counter story criteria. Lastly, these researchers wanted to take a deeper look at the supportive factors identified by high achieving black males in mathematics to develop fresh insight on strategies to support their underperforming counterparts. One of the key factors involved in the mission of counter story is realization of and freedom from the bondage of the dominate narratives agenda.

Counter-Stories: Relevant Stories of Success

Based on a growing body of intentional research regarding counter narratives of African American adolescent male academic success, specifically mathematical, the following experiences have been consistently found in the literature: (a) teacher encouragement and support; (b) career goal alignment; (c) positive peer support; (d) extracurricular and co-curricular activities including sports; (e) parental, extended family, and role model support and advocacy; (f) early exposure to rigorous content; (g) aggregated individual racism; (h) school/community resources; and (I) self-empowerment (Berry, 2003; Berry, 2008; Footé Sykes, 2012; Howard, 2008; McGee, 2009; McGee, 2013; McGee & Pearson, 2014; McGlamery & Mitchell, 2000; Terry, 2010; Terry, 2011; Terry & McGee, 2012; Thompson & Davis, 2013; Thompson & Lewis, 2005). These studies have played a major role in current paradigm shifts that focus more on African-American males' levels of high academic achievement as opposed to a narrow focus on their failures.

Researchers who adopt CRT offer different interests and motivations for studying the access and achievement of African American adolescent males in higher level mathematics. Using CRT through a phenomenological method of collecting data and an anthropological and sociological viewpoint through counter-storytelling, Berry (2008) seeks to examine “the complexities of the mathematical experiences of African American males and CRT's intersection with equity and social justice” (p. 568). He goes further to suggest that in order for more African American boys to achieve success in mathematics, there is a pressing need to focus more intently on the stories of high achieving African American adolescent males, identifying the strengths, skills, and other significant factors it takes to foster their success.

Berry's (2008) descriptive portraits revealed five broad themes with Race, culture, and parenting being interwoven throughout them all. The five themes included: (a) early experiences; (b) aggregated individual racism; (c) support systems; (d) school/community resources; and (e) self-empowerment. Support systems, including parents, extended family members, and non-family members seen as role models, involved in this study were viewed as advocator, protector, and defender of these African American adolescent males. Early exposure to academics provided opportunity for early success in school and access into Advanced Gifted (AG) by 4th grade, putting them on a higher track in mathematics. Each participant also identified a teacher who demonstrated care, encouragement, and motivated them to live up to their full potential. In addition to parental advocacy, caring teachers, and early and rigorous academic experiences, church involvement, participation in academic co-curricular programs, and participation in athletics were prevalent with all participants.

Similarly, to map resiliency in the lives of high achieving African American adolescent males utilizing narrative analysis, McGee and Pearman (2014) extract the complexities within the academic paths of their participants. McGee and Pearman's (2014) account of the internal risk and protective factors study concluded with six protective factors: (a) street know-how; (b) mathematical/school perseverance; (c) possessing multiple passions/outlets; (d) capitalized on the available mathematics opportunities; (e) developed academic survival techniques; and (f) collectivist orientated ideologies and actions.

Participants in this study discussed the large task of counteracting against negative Black male stereotypes, navigating through potentially attenuating or violent situations, maintaining street savviness and credibility, avoiding the "acting White" label, while at the same time dispelling the dominate narratives of African American males' academic achievement. Several students took special care in developing positive relationships with their teachers, developing the perception that mathematics was critical to their academic, social and economic trajectory. Nine of the fourteen students discussed their involvement in several extracurricular activities including sports, the arts, and community service. These students proactively sought out and took advantage of summer STEM opportunities that provided additional real-world and academic experiences they wouldn't receive during the traditional academic year.

McGlamery and Mitchell (2000) conducted a four-year case study to better understand programming components that both teachers and students found most effective in recruiting and retaining African American male high school students in upper level mathematics courses. The program enacted by the teachers to target African

American males required that several changes be made in school culture, as well as individual beliefs and approaches to teaching mathematics. African American adolescent male participants communicated five program components as being most successful: (a) cohort group recruitment (b) small group projects, and student centered mathematics curriculum, (c) peer and teacher supported homework help line and center, (d) University/school partnership for student participation in research (involving science, math, and technology), and (e) the career focus program designed to acquaint students with careers and professionals in mathematics, science and technology (McGlamery & Mitchell, 2000, p.83).

The major over-arching theme found most useful from the perspective of teachers was the various constructs of support from different sources. For example, the African American adolescent male peer support accomplished through the cohort recruitment program proved to be a consistent and positive factor in the success of many students. Additionally, the development of a sense of community and wrap around services established with the incorporation of a homework help center and hotline, staffed by volunteers from the university, business community, as well as teachers and other students.

Thompson and Lewis (2005) found the following four themes emerged from their qualitative case study of a high-achieving African-American male named Malik who attended an urban school: (a) advanced mathematics course enrollment; (b) a relationship between advanced course enrollment and career goals; (c) deep-seated goals; and (d) role models. While course access and achievement patterns largely effect student success, Thompson and Lewis (2005) discuss how literature often fails to speak to scenarios

where opportunities do not exist for students to take advanced mathematics course, regardless of interest and ability, creating an additional barrier for many African American male students. Malik's story is significant in that it challenges the dominate narrative of African American adolescent males' mathematical achievement in advanced mathematics courses, while supporting the need for them to see relevance and possible career attainment in STEM fields. Malik, and many like him, develop life goals early on and use them as motivating factors for successful academic performance and mathematics success. Malik also speaks to the importance of having role models that serve as gatekeepers and/or mentors who intentionally work to guide the student's social world.

Using African-centered worldview as the theoretical framework and phenomenological qualitative methods, Thompson and Davis (2013) examined the lived experiences of four high-achieving African-American males attending an urban high school with emphasis placed on how said experiences shaped their meaning of mathematics. Findings indicated four impactful factors for their success: (a) teacher influence; (b) peer influence; (c) achieving success through sports; and (d) economic mobility were the most influential factors impacting mathematics meaning-making.

The four African American adolescent males in this study all acknowledged the amount of emphasis placed on sports and making money amongst themselves and within their peers, communities and the larger society that they live. While they believed that high mathematical achievement could provide them access to lucrative careers in some way, they all agreed that sports figures were made more visible as attainable pathways for African American males. Their teachers played a large role in shifting their menu of

possibility and academic identity through high academic expectations, interactions, and relationships. These identities led them to positive peer groups that supported their achievement in mathematics.

Chapter Conclusion

This chapter identifies current and historical factors that affect the academic performance of marginalized student populations' mathematics performance. The United States' public schools are predicated on the European schooling model with an overwhelming majority of our nation's teachers being White. Therefore, racism and its byproduct, stereotyping, are worthy of study. A new overt form of racism in education justifies an inconclusive list of disproportionate outcomes and harmful practices that work against African American male students' academic success. The misuse of power leads one to question the number of capable African American adolescent males who have been denied access to rigorous mathematics curriculum, pushed off the higher-level mathematics track, instructed through lowered expectations, and not supported with the necessary instructional tools and resources for success.

The narrative about African American adolescent males' academic performance, specifically in mathematics, is dominated by discussions of students' low academic outcomes, discipline problems, poor health, and limited access to supplemental learning resources). However, a growing body of researchers argue against this dominant narrative of African American students' mathematical achievement by identifying and sharing successes within this marginalized population of students (Berry, 2008; Footé Sykes, 2012; Howard, 2008; McGee, 2009; McGee, 2013; McGee & Pearson, 2014; Terry, 2010; Terry, 2011; Terry & McGee, 2012).

The intentionality of creating counter narratives of African American adolescent male academic success, specifically mathematical, identifies key influential factors contributing to high achievement: (a) teacher encouragement and support; (b) career goal alignment; (c) positive peer support; (d) extracurricular and co-curricular activities including sports and Church; (e) parental, extended family, and role model support and advocacy; (Berry, 2003; Berry, 2008; Footé Sykes, 2012; Howard, 2008; McGee, 2009; McGee, 2013; McGee & Pearson, 2014; McGlamery & Mitchell, 2000; Terry, 2010; Terry, 2011; Terry & McGee, 2012; Thompson & Davis, 2013; Thompson & Lewis, 2005).

As a result of the historical, cultural, and societal influences that come with race, gender, and schooling in America, African American males have gotten the short end of the academic success stick. On a daily bases these students a forced to learn strategies to navigate and preserver through inequitable systems, practices, proگرامing, and policies, negative stereotypes and mindsets, and lowered expectations and advocacy. Those that make it to the other end of success have rich accounts of their experiences that educators and policy makers should consider when developing equitable learning environments and experiences for marginalized student populations. Based off current literature, personal and professional experience, and a small pilot study, the following conceptual framework guide this research.

Chapter 3: Methodology

In this chapter, I describe the research methods I used to collect and analyze the study data and ultimately generate a counter-narrative that affirms African American males as successful learners of mathematics. It begins with the proposed research design and a rationale for the study. It also provides technical information about informed consent, confidentiality, the participants, and role of the researcher and a detailed description of how I established the credibility of the research throughout the data collection and analysis processes. This is followed by an overview of the procedures and outcomes from a pilot study, how this informed and helped to validate the results of the final study (Maxwell, 2012).

Research Design and Methods

This study uses a qualitative research design to examine African American adolescent males' perceptions of the different experiences and attributing factors that have affected their mathematical trajectory and achievement. I chose to use a qualitative design because qualitative methods can provide rich insight into human behavior with theoretical relevance, transferability, and applicability. When attempting to understand human behavior, as opposed to that of physical objects, one must refer to the meanings, values, and purposes human beings attach to their practices and activities (Guba & Lincoln, 1994). According to Merriam (1998), qualitative research is based on the view that meaning and truths are created in the collaboration between individuals in interaction with different social worlds.

I am particularly interested in the stories of successful African American male mathematics students which, in a racist societal context, serve as counter-stories against

dominant narratives about the shortcomings of these students. Critical race scholars engage in a tradition of counter-storytelling and have practiced it in at least three general forms: personal stories or narratives, other people's stories or narratives, and composite stories or narratives (Berry, 2008; Howard, 2008; Jett, 2002; McGee, 2013; Terry, 2011; Terry & McGee, 2012). Consistent with counter-storying, this research design will use other people's stories and narratives, specifically those of African American adolescent males preparing for and participating in higher level mathematics. The assumption is that the stories of African American adolescent males "can reveal experiences with and responses to racism and sexism as told in a third person voice" (Solorzano & Yosso, 2001, p. 33). These storied experiences, captured mainly through semi structured interviews and analyzed using a narrative inquiry approach, will provide a biographical analysis that contrasts with dominant accounts about ostensibly inclusive and meritocratic institutions (e.g., school mathematics) and about African American males and other historically marginalized groups.

Narrative Inquiry

Narrative inquiry is a qualitative tradition based on the theoretical assumption that human beings live storied lives; that is, individuals and groups understand their experiences in narrative terms (Clandinin, 2013). Clandinin (2013) asserts, "the focus of narrative inquiry is not only valorizing individuals' experience but is also an exploration of the social, cultural, familial, linguistic, and institutional narratives within which individuals' were, and are, constituted, shaped, expressed, and enacted" (p. 18).

Clandinin (2013) and Creswell (2012) argue that narrative inquiry is an appropriate approach to utilize when the research problem calls on individuals to tell

stories of their personal experiences. A narrative is a meaning structure that organizes events and human actions into a whole tapestry, attributing significance to individual actions and events according to their effects on that whole. Thus, narratives are to be differentiated from chronicles, which simply list events according to their place on a timeline. They can also be differentiated from technical and scientific reports, which may involve aspects of storytelling and are not necessarily narrative wholes. A narrative provides a symbolized account of actions that includes temporal information about the sequential relationship of events. Narrative [and/or interview] data describe when events occurred and the effect the events had on subsequent happenings. The data are often autobiographical accounts of personal episodes and include reference to when and why actions were taken and their intended results (Polkinghorne, 1995, p. 11).

As part of this study, I used narrative inquiry to better understand what African American male adolescents recognize and describe as the influences affecting their successful completion of Algebra I in the 8th grade, subsequently providing access and achievement in higher level mathematics courses in high school. Consistent with narrative inquiry, I focused on the perspectives and lived experiences as recounted by the study participants, all African American male students. I anticipate that identifying the tensions and/or interruptions in their narratives can provide consequential information about the impact of personal, social, cultural, familial, and institutional factors that have shaped the mathematical experiences of African American male students. Narrative inquiry will allow for critical features of each of the students' stories to be analyzed, synthesized, and shared (Creswell, 2012).

Role of the Researcher

In qualitative work, “[t]he researcher is the primary instrument for data collection and analysis” (Merriam, 2009, p. 15). As such, Creswell (2012) argued for “clarifying researcher bias at the onset of a study” (p. 251). It is important that in the clarification, the researcher should be prepared to articulate any pre-conceptions or existing prejudices and preferences that might have implications for the study. As the researcher, I consistently engage in reflection on my positionality in relation to this study. This reflective process considers my personal, educational, and professional experiences, my motivations for conducting the research, and my views as an African American man. Through this process of self-reflection, I realize as an African American man and the uncle of two young Black boys, I have a personal stake in ensuring that educational experiences and opportunities improve for African American male students. I recall when my oldest nephew went to pre-kindergarten at the age of four. Prior to him entering school he attended my mother’s – his grandmother’s – home day care from birth. Naturally, he struggled that year with complying with the norms of this new environment. At the early age of four he was sent home numerous times. At parent conferences, teachers noted his great academic performance and abilities as well as his inability to “conform” to the classroom norms. Before the end of the first semester, his teachers were requesting evaluations and placement in the special education program – at the age of four! This is my rationale for approaching this research using a CRT lens.

Qualitative researchers also recognize their role in co-constructing study results in collaboration with participants. Qualitative researchers typically have the ability to have ongoing conversations with participants to seek clarifications and engage in “member checking” (p. 15) for inaccuracies about creating results – narratives or counter-stories –

based on participants' responses (Merriam, 1998). Consistent with this, as the researcher, I conducted the individual interviews. Once I transcribed the recordings, I performed accuracy checks on my own transcription by reviewing the recordings and my transcriptions to ensure I had a verbatim transcription. I also followed Merriam's (1998) advice and employed 'member checking' with each participant at multiple points during the data collection and analysis processes, seeking their confirmation of accuracy. I continue to be genuinely, both personally and professionally, interested in this research study and its potential contributions to social change as it relates to African American males' access to... and academic achievement. I took every precaution against self-bias so the recommendations I made were based on data and findings that were accurate and valid.

Research Questions

Three research questions guided this investigation:

1. What are the thoughts, feelings, and lived experiences of high achieving African American adolescent males who have demonstrated success in advanced high school mathematics courses?
2. What are the most influential factors that high-achieving African American adolescent males attribute to their access and achievement in advanced high school mathematics?
3. What individual, institutional, and societal barriers do high-achieving African American adolescent males report having to navigate during their pursuit of access and achievement in advanced high school mathematics courses?

Participant Selection Criteria and Recruitment Process

Selection Criteria

Creswell (2012) maintained three decisions are necessary for a researcher engaging in purposeful sampling, namely, decisions about: (1) participant selection, (2) specific sampling strategies, and (3) the size of the sample. Consistent with the depth and richness of responses required for narrative inquiry, enrollment numbers needed to remain small and manageable.

In selecting participants, I purposely sought African American males who: (1) identified as Black or African American and male, (2) successful completion of Algebra I in middle school, and (3) currently enrolled or previously completed AP Calculus in high school. I was particularly concerned with *who* the participants were as they would need to exhibit the range of lived experiences that addressed the research questions. My selection criteria for participants obviously were that they be adolescents who identified as Black or African American and male. The six participants ranged in age from 16 to 18 years, with a median age of 17.2. Following Howard (2008), an aim of this study was to investigate African American adolescent males' experiences within different social class and school contexts, identifying any similarities and differences related to socioeconomic and geographic distinctions. Therefore, three participants attended high schools that primarily serve low-income and racially segregated communities (i.e., made up largely of African American and Latino students) and the other three attended schools in higher-income and predominantly White suburban.

As indicated, I intentionally chose the six participants to present African American adolescent males' experiences within different schooling, socioeconomic, and geographic distinctions. This comparatively small number of participants allowed for in-

depth analyses of their academic perceptions and experiences in mathematics. Details about each participant is outlined in Table 1 below. I justify including only six participants for two reasons: (1) the nature of this research was exploratory and so I aimed for depth as opposed to breadth and (2) six participants seems feasible given my resources and timeframe.

Table 1

Complete Sample of Participants

<u>Participant Name</u>	<u>Age</u>	<u>Term Interviewed</u>	<u>FARMS</u>	<u>Grade Level</u>	<u>High School</u>	<u>Highest Math Course</u>
Adrian	18	Summer 2018	No	Recent Graduate	J. Borden High School	AP Calculus BC
Chris	17	Fall 2018	No	12th	Morris High School	AP Calculus AB
Eric	18	Summer 2018	Yes	Recent 1 Graduate	J. Borden High School	AP Calculus BC
Greg	18	Summer 2018	No	Recent Graduate	J. Borden High School	AP Calculus AB
Javian	16	Fall 2018	Yes	11th	Taylor Magnet High School	AP Calculus BC
Nick	16	Fall 2018	No	11th	Brown High School	AP Calculus AB

Recruitment Process

When identifying participants I strategically sought students attending a suburban school district. The purpose was to add to the literature which typically focuses on students within an urban, inner city context. In an official memo from Lily County Public School’s research unit, my research proposal was sent to the principals of five different high schools. According to district research policies, the principal had to support the

study and agree before contact could be made with the mathematics resource teacher and potential student participants. The initial invitation to participate was accepted by three of the five originally identified schools. The school's mathematics resource teachers were enlisted to identify all potential participants at their school based on the study criteria communicated to them. I met with the three math resource teachers and provided each of them with the University of Maryland, College Park and the participating school district's authorizations to conduct research. Each resource teacher identified potential participants at their school with one also identifying three participants who attended a high school in a neighboring school district and met the selection criteria.

Students who were identified by their teachers were asked to discuss the opportunity with their parents, sign all consent forms and return to their mathematics teacher. My contact information was also provided if potential participants or parents had any additional questions or concerns regarding the study. The University's Institutional Review Board (IRB) contact information was also provided if there were any questions regarding their rights or student rights as a research subject.

All the information that I obtained during the recruitment and data collection process was kept confidential. All identifying information (student names, teacher names, school names, etc.) discussed in interviews or presented in supporting documents were blacked out and given pseudonyms for all write ups and presentation purposes. Only researchers will have access to this data. I stored and locked the interview tapes, supporting documents, and notes from the research in a secure location in my home office.

There were no known or anticipated risks involved in this study. Although the questions that were asked during the interview were not expected to be upsetting, participants were instructed to skip any questions that they were not comfortable answering. Participants were also given the opportunity to withdraw at any time.

The recruitment process took two weeks from the time of the initial meeting with the math resource teacher; delivering participant invitation letters and consent forms to the math resources teachers, awaiting returned consent forms, contacting student participants, and scheduling individual interviews. Between the three math resource teachers 54 participant invitations were distributed, ten returned with signed consent forms, resulting in six successful interviews being scheduled and conducted. Each participant required one follow up interview that was conduct over the phone.

School Overviews

Taylor High School. Taylor High School is the largest school in the district with over 3,000 students. Its student demographics is represented by 34% Hispanic, 24% African American or black, 23% white, 15% Asian, and less than 5% multi-racial or other. The schools FARMS rate is 36%. Taylor offers five academies: Entrepreneurship and Business Management; Human Service Professions; International Studies and Law; Media Literacy, and Science, Math and Technology, which complement its two magnet programs -- the Communication Arts Program (CAP), and the Science, Mathematics, Computer Science Magnet, which Javian was accepted into.

Brown High School. Brown High School currently has approximately 1800 students. Student demographics include 48% Hispanic, 21% white, 18% African American or black, 9% Asian, and less than 5% multi-racial. Brown High School also has

a Free and Reduced Meal (FARMS) rate of 40%. Brown offers 4 academies: Academy of Finance, Business Management and Marketing, part of the National Academy Foundation; International Baccalaureate (IB) Program; Renaissance Academy; and the Academy of Visual and Performing Arts. The academies are committed to providing a meaningful, student-centered and challenging high school experience while preparing students for postsecondary education and a variety of career choices.

Morris High School. Morris High School has a student population close to 2,000 students which was made up of 55% Hispanic, 23% African American or black, 12% Asian, 9% white, and less than 5% multi-racial. Morris High School also has a FARMS rate to include 50% of the student population. Morris High School offers four Academy Programs: Biosciences Academy, Engineering Academy, The Academy of Information Technology, and Global Studies Academy. Two are Project Lead the Way academies that students had to apply to and get accepted: Engineering, and Biosciences. These academies prepare students for post-secondary education and career choices and extend the classroom to the community through job shadowing, speakers, internships, and credit-bearing college courses.

J. Borden High school. J. Borden High School has a student enrollment just above 1800 students which consists of 36% white, 32% African American, 22% Hispanic, 6% Asian, 5% multi-racial or other, and a FARMS rate of 22%. J. Borden offers the students opportunities to join small learning communities within the school. The objectives of these small learning communities, known as 'academies', are to enhance a student's commitment to the school, to learning, to improving his or her academic achievement and to preparing for college and career opportunities in a rapidly changing,

technological society. J. Borden offers its students eight academies to choose from: Academic Athletic Achievement Academy, Academy of Finance, Academy of Hospitality and Tourism, Humanities, Arts, and Media Academy, JROTC Academy, LEAD Academy, Science, Math and Technology Academy, and the Academy of International Studies. Central to the academy experience are various activities outside of school that include career shadowing and exploration activities, college visits, mentoring, and senior internships.

Data Collection and Analysis

Data Collections

The description of the lives of individuals, the collection of individuals' stories of their experiences, and a discussion of the meaning of those experiences is the general make up of narrative research (Clandinin, 2013). As noted in Chapters 1 and 2, the stories of African American adolescent males are rarely heard or are told in non-affirming ways within the general education literature (Howard, 2008). Therefore, I chose audio recorded semi-structured interviews, academic transcripts, "restorying" techniques, and participant validation methods to collect and analyze data with the goal of identifying and understanding the schooling experiences and attributes that African American males contribute to their access and achievement in higher level secondary mathematics courses.

Semi-Structured Interviews. Consistent with narrative inquiry, I designed and used an open ended semi-structured interview protocol, which allowed participants to tell stories that pertained to their experiences in school, specifically access and achievement in upper level mathematics. Unlike structured interview protocols, which require the use

of a set of prescribed standardized questions in prescribed order with little deviation, a semi-structured approach is more flexible, allowing participants to frame their own answers, to elaborate, and even to go “off topic” (Blakesley, 2013). A semi-structured interview approach allowed me, as the sole interviewer, to follow topics or themes that diverged from the protocol to be true to participants’ narratives and obtain a broad range of perspectives from interviewees. The semi-structured protocol allowed me to explore relevant issues that came up during the interview. The semi-structured interview protocol outlined in Appendix A was intentionally structured in a way that allowed generally consistent interviews between participants and to gain clear information from respondents that addresses the research questions through their own perspectives.

Ultimately, my goal as an interviewer was to deeply understand the experiences and perspectives of African American males. As part of this, during the interviews, I paid close attention to their use of language, particularly language of exclusion, inclusion, power or lack thereof, facial expressions, and reaction to questions.

The individual interviews took place at a time and space convenient to the individual student participant including a restaurant, coffee shops, classrooms, and a principals’ conference room. The goal of this study was to capture the experiences of the participants authentically and with fidelity. Therefore, as the interviewer, I did my very best to make participants feel comfortable enough to communicate their truth. This included making the research field as relaxed as possible, using inclusive language, not wearing my work badge, and dressing in a casual manner.

All interviews were conducted individually ranging from forty-five to sixty minutes to complete. After initial transcription there was a follow up conversation

generally for clarification purposes. As shown in Appendix A, the interview included questions about participants' early schooling histories and overall life experiences as well as their experiences with mathematics learning and participation in and out of school.

Sample questions included:

- Tell me about a time you felt the proudest as a mathematical student?
- Describe a positive experience you've had with a mathematics teacher? How did that affect your mathematics achievement?
- You have been given an opportunity to sit with district leaders as they plan specifically around supporting African American males in higher level mathematics courses. Reflecting on your experiences and the experiences of other African American males, what do you want them to know and consider?
- You have the opportunity to speak to a group of African American male 6th graders, what do you want them to know and consider as they matriculate through school, specific advice on access and achievement in higher level mathematics?

Audio Recording. All interviews were recorded using an audio recording device. Note taking is considered by many to be too distracting while interviewing participants, and it could possibly hamper the researcher's ability to notice subtle cues provided by the participants. Audio recording the interviews proved to be a powerful way for the researcher and the participant to connect on a more personal level, instead of navigating through the barriers of capturing every thought in real time by hand.

Audio recordings were transcribed soon after the interviews and prior to the next scheduled interview. This decreased the chances that I would forget the participants' intended meanings. Transcribing allowed me to listen to the interview audio and reflect

on the experiences that participants shared, which was helpful in getting both a general and intimate sense of them as Black male students and as individuals. The use of audio recording allowed me to better analyze participants' words, clip relevant segments, organize segments into a series of frames and codes, keep the voice of the participants intact, while reducing the impact that the traditional transcription process has on the content. Each participant received a transcript of their interview to check for accuracy; all participants confirmed with me that the transcripts were accurate.

Restorying. Consistent with a narrative inquiry methodology, analysis of the participants' stories were "restored" or reorganized into a general framework that makes sense (Ollerenshaw & Creswell, 2000). After transcript accuracy was verified by the participants, I prepared a third-person narrative giving voice to six participants based on their respective experiences. I synthesized descriptions of events, experiences, and recommendations gathered through the semi-structured interviews into individual stories or narratives. These narratives were situated within the context of participants' personal experiences (schooling and home experiences), their culture (gender, race, socioeconomic status), and their historical contexts (course access and achievement, post high school plans), rewriting the stories to place them within a chronological sequence. These narratives were then emailed to each participant to be further checked for accuracy and to ensure that I had captured their voices.

Participant Validation. Participants were provided with their final narrative and given the opportunity to edit facts in the story as well as the meanings ascribed by the researcher for accuracy. These individually collected and negotiated stories were then

analyzed into a set of recurring themes between participants, consistent and contrasting, and aligned to the research questions that guide this study.

The product of narrative inquiry tells the story of individuals, unfolded in the chronology of their experiences, set within their personal, social, and historical context, including the important themes in those lived experiences. This study was guided by narrative analysis to identify participants' perceptions and explore their insights and beliefs. The intentions were to design a study that would not only give a multidimensional perspective of the phenomenon but to also provide rich data that could be interpreted with a comfortable degree of assurance. The interview protocol was designed to elicit rich accounts of experiences in the home, school, and community context.

Narrative Data Analysis

Organizing, analyzing, and discovering theoretical meanings from storied data can be challenging due to the nature of narrative which is iterative and evolutionary. This leaves one with questions concerning how best to work with, preserve, and respect participant stories, content and meaning. There are pervasive analysis process whereby the researcher breaks down narrative data into sections, then divides the sections into bites; these can be as short as two to three words or as long as a few paragraphs but are almost always excerpted from longer narrative texts. Data bites are then reorganized according to perceived connections or overarching themes. This is a process often referred to as 'coding' (Maxwell, 1996).

According to Polkinghorne (1995), analysis of narrative generally employs a paradigmatic type of analysis, identifying general concepts, categories, and common

themes within the data. Polkinghorne further suggest two types of paradigmatic analysis of narrative: (a) one in which concepts, categories, and themes are pre-identified based off previous theory and/or logical possibilities; and (b) ones in which concepts, categories, and themes are inductively derived from the data. His analysis methodology can be summarized in three points:

- It describes the categories of particular themes, paying close attention the relationships amongst the categories
- It uncovers the similarities that exist across multiple sources of data
- It aims to derive general knowledge from the multiple sources of data, underplaying the uniqueness of each individual narrative

Therefore, I arranged the findings in this study around description of themes aligned to current literature and the research questions, while also allowing for the inductive discovery of new recurring and salient themes within and between the individual stories. I organized them under several categories as storied data looking for “patterns, narrative threads, tensions, and themes, either within or across an individual’s experience and social context” (Clandinin & Connelly, 2000, p. 132). This coding scheme is presented in Table 2.

Table 2

Codes for the Mathematical Experiences of High Achieving African American Males

<u>Sub Themes</u>	<u>Nick</u>	<u>Chris</u>	<u>Greg</u>	<u>Adrian</u>	<u>Javian</u>	<u>Eric</u>
Parental Support and Advocacy	x	x	x	x	x	x
Caring Teachers	x		x	x	x	x
Positive Peer Relationships	x	x	x	x	x	x

Early Identification as Mathematically Advanced	x	x	x	x	x	x
Specialized Programs/Schools			x	x	x	x
Rigorous Course Enrollment	x	x	x	x	x	x
Extra/Co-Curricular Opportunities	x	x	x	x	x	x
Self- Efficacy	x	x	x	x	x	x
Academic Lineage	x	x	x	x	x	x
College and Career Aspirations	x	x	x	x	x	x
Creating a Counter Narrative	x	x	x	x		x
Specialized Schooling			x	x	x	x
The Pressures of Being the Select Few	x	x	x	x	x	x
Deficit Thinking and Lower Expectations	x	x	x	x	x	x
Negotiating Stereotypes About Black Males	x	x	x	x		x

Codes were identified, and quotes that reflected the codes in individual interviews were connected. For example, one circumstance that recurred throughout the interviews was the presence of stereotypes and participants’ *negotiation of these stereotypes*. So, for every instance in which participants discussed how they felt about and reacted to stereotypes, the quotes were coded as follows:

Chris Identifies Stereotype of Blacks Being Inferior in Mathematics
 IRB3: Stereotypically, they view us as being less intelligent, sometimes aggressive. They have less expectations for us. People look at me and they think that I'm some type of thug or something. You can tell they just don't wanna be friendly or interact or I don't even know how to explain it. But they just give you this certain energy, like this vibe, like, ‘Oh, you're one of them. Yeah, you're that type of person’.

Caring teachers was another recurring theme in the interviews. Participants communicated characteristics of caring teachers to include being kind, patient, respectful,

encouraging, honest, and transparent, and addressing their academic, social, and emotional needs outside of the course content. As these examples indicate, my unit of analysis for applying codes was an uninterrupted (by me as interviewer) response to a question or prompt in the interview.

Once all the interviews were coded, data were initially categorized by theme, which included grouping and comparing themes across participants as reflected in Table 2. These early thematic categories underwent multiple revisions. I created categories and subcategories which revealed different experiences and strategies leading to participants' success. I then organized these themes into four overarching or salient themes to include: (1) inequitable practices justified [and/or rationalized] by the dominant narrative, (2) caring and influential relationships, (3) early access to enriched and accelerated mathematics curriculum, and (4) intrinsic and extrinsic motivators [for success].

The Pilot Study

Location and Participants

The pilot phase of this study took place in June 2017 at a high school within LCPS. This school was selected because of a working relationship I have established with the mathematics resource teacher at the school as well as the school's work around single gendered classes. Three 9th grade African American males participated in this pilot phase. Participants were recruited by the teacher. Selection was based on convenience and agreement on the part of the students, but care was taken to ensure that participants were selected to represent the various dimensions that are important to this study: 9th grade, African American male, at least one student enrolled in Algebra I, and at least one student enrolled in Geometry or a higher course in the sequence.

Objective

The purpose of the pilot study was twofold, namely:

- To pilot test and improve a semi structured interview protocol
- To identify a coding and data organizing framework

Data Collection

Semi-Structured Interviews. Each of the three student participants entered the interview room one at a time during their lunch hour to minimize academic distraction. Participants were informed on the onset of the interviews that the purpose of the interviews was to give them an opportunity to communicate factors having the greatest influence on their mathematics achievement. No feedback was given to student participants regarding their current course enrollment and whether they were selected because they were on an accelerated track or not. Students were also assured that the information presented was confidential and that they should feel comfortable sharing their personal experiences in and outside of school.

Interview Protocol. Each of the interviews lasted between 30 and 45 minutes long. The student questionnaire included 45 questions total broken into three sections. Each set of questions had the goal for participants to share their experiences, shaping their own narratives.

- 13 questions to understand students' self-motivations and mathematical identity
- 14 questions to understand influences within the home and community that help and/or hinder African American adolescent males' access and achievement in Algebra I by 8th grade.

- 18 questions to understand influences within their schooling experience that help and/or hinder African American adolescent males' access and achievement in Algebra I by 8th grade.

Using key information from student responses a preliminary data chart was created to code the data collected (See Table 3 below). After completing the preliminary chart I looked for similarities between groups, Geometry students for the purpose of the pilot, as well as similarities in between groups, Algebra and Geometry.

Table 3

Pilot Study Coding Table

<u>Themes</u>	<u>Algebra I Student</u>	<u>Geometry Student 1</u>	<u>Geometry Student 2</u>
Low Parental Influence	N0	N0	Y1
High Parental Influence	Y2	Y2	Y2
Negative Community Influence	N0	N0	N0
Positive Community Influence	Y0	Y0	Y0
Negative Peer Influence	Y0	N0	Y2
Positive Peer Influence	Y2	Y2	Y2
Experienced Racism	N0	N0	Y2
Low Tracked	Y1	Y1	Y1
High Tracked	N0	Y2	Y2
Negative Teacher Relationships	Y1	Y0	Y2
Positive Teacher Relationships	Y2	Y2	Y2
African American Teachers	Y2	Y2	Y2
African American Male Teachers	Y2	Y2	Y2
Culturally Responsive Pedagogy	Y2	Y2	Y2
Pedagogy of Poverty	Y1	Y0	N0
Low Mathematical Motivation	Y1	N0	N0
High Mathematical Motivation	Y2	Y2	Y2
Below level Course Enrollment	Y	N	N
On Level Course Enrollment	N	N	N
Above Level Course	N	Y	Y

Note. Y = yes, N = no, 0 = no effect, 1 = hinders, and 2 = helps.

Data Analysis

Major themes found in the literature and presented in chapter 2 guided the analysis for this study. The themes include: Racism, teacher relationships, parental support, peer relationships, teacher/school quality, Black males as role models, early learning experiences, and self-motivation. Through analysis of the data collected in the pilot, edits had to be made to the original interview questions. Specific questions had to be added to ensure clear data was collected for each of the above themes. Additionally, questions that did not yield results that answered the research questions were eliminated. There was also a need to rewrite most of the question to explicitly ensure that student responses were tied back to their access and achievement in Algebra I by 8th grade. An update list of questions can be found in Appendix A.

After completing the preliminary chart, I looked for similarities between both Algebra and Geometry participants. There were 11 themes that all participants shared. When it came to home and community factors influencing their access and achievement into Algebra I by 8th grade all three participants communicated a very high parental presence, concern, and level of involvement as a positive contribution to their academic achievement. The Algebra I Student shared that it is his mom that “pushes [him] to do well in school; Living a life under someone else’s belt is hard”. When asked the main thing that helps him succeed he shared that “parents, family, and people who wants to see me succeed” are his motivating factors for achievement. Similarly, the Geometry Student 1 shared that his parents help him stay focus on his academic success true keeping a focus on going to college for a better life. “My family gets really upset if I get bad grades”. Geometry Student 2 mentioned his family’s ability to buy him school supplies as well as

need for school projects. He mentioned that he had an older sister currently in college that also supports him by helping him with homework.

All three participant also discussed their communities in a very positive light and identified that they have positive peers that they “hang with” that supports their focus on academic success. “Although they [friends enrolled in higher level courses] don’t say it, my friends encourage me to take advantage of my situation” is what the Algebra student communicated when asked how his friends support his academic achievement. Geometry Student 1 understood his friends supporting him by telling him to “stay in school” and not asking him to “skip school” with them. Geometry Student 2 also has friends that are on the advanced track with him as well as some in lower level courses. He shared that “if I need help, they [older friends in higher level courses] would stay after school and help me”.

Including the 9th grade student currently enrolled in Algebra I, all three young men had a high mathematical identity. They were all confident in their ability to academically perform in their current math class and if given the opportunity and access to a higher-level course they would excel as well. “I’m good in Mathematic, it comes easy to me” says the student enrolled in Algebra I. “I’m going to college, UCLA or NYU, and majoring in Engineering. In middle school, I really didn’t care about school. I didn’t know where it [academic achievement] could take me but now I know. I look at what my friends in higher math classes are doing and I can do it too.” Although on a faster track, the first Geometry student doesn’t feel challenged enough in math. “The main people taking higher courses are White and Asian. Blacks and Hispanics automatically go in the low classes.” Geometry Student 2 feels that if given the opportunity to take Algebra I in

7th grade he would have succeed then as well. When asked how schools can better support African American males he stated “be fairer to them. Trust them more to do harder work”.

Most profoundly and most discussed, when asked what the greatest schooling factor that help them achieve in mathematics, regardless of course enrollment, each participant mentioned the support and relationship they shared with a male teacher. Algebra I Student communicated that he did not care as much in middle school about his academic progress. He also shared that he didn’t have many relationships with teachers until the current year and named his African American male math teacher as his favorite teacher and his support as being the number one thing that helps him maintain his A in the class. “Mr. Bate is a good teacher. He can relate to a lot of our struggles. Mr. Bate knows how to explain stuff in a way we understand”. Geometry Student 1 had an equally positive experience with a different teacher. “Mr. Borden [Caucasian male English teacher] actually helps out and wants me to do better. He doesn’t get mad if I’m talking too much but simply tells me to calm down. Mr. Marshall helped me when I was failing English”. This student also mentioned teachers that he did not have a positive relation with and communicated that “Certain teachers I just don’t get along with. When I ask for help they don’t, so I’m not motivated to do well [in their class]”. Geometry Student 2 identified his history teacher as his favorite teacher [African American male]. “He helps me and allows me opportunities to redo assignments.” Although she [African American female Technology teacher] is not his favorite teacher he mentioned her as well “she knows I want to major in technology, so she prepares me for college.”

Pilot Conclusion

The purpose of the pilot study was to test the semi structured interview questions used as the main data collection instrument. Through this pilot study I was able to field test the questions and the type of responses students gave and alter the questions to better answer the overarching research questions. This pilot also allowed to test a coding method to organize themes, consistent and different, between and in between participants. Finally, this pilot provided preliminary information on the connection between participants and what is currently in the literature regarding upper achieving and lower-achieving ninth-grade, African-American male students' access and achievement in Algebra I by 8th grade.

During the fall semester of 2017, the researcher will begin the application process identified above with the selected school district for external research. The researcher will continue to revamp the research design to align to the research questions. The researcher will collect updated public data relevant to the identified research questions as well as gather a sampling of participants for the study. This information will be organized and presented to a committee as a dissertation proposal to the Department of Teaching and Learning, Policy and Leadership at the University of Maryland, College Park.

Chapter Conclusion

Qualitative research embraces multiple standards of quality and provide rich insight into human behavior. This study facilitates exploration of the phenomenon of African American males' successful completion of Algebra I by 8th grade, providing access to higher level mathematics courses such as AP Calculus in high school. Looking at the way public education is currently configured, specifically through one suburban

school district, the research goal is to see the ways in which critical race theory can be a powerful explanatory tool for the sustained inequity that people of color experience.

In this chapter, I described narrative inquiry as the methodology for this research and explained how this methodology aligned with the data. Next, I described the sample and data collection methods utilized in this study. This study explores the experiences of six African American adolescent males and their access and achievement in higher level mathematics courses. To ensure integrity and accuracy of this research, data is collected through in-depth semi-structured interviews and educational records. This research design permits deep probing and investigation of experiences and identified attributes for their success. My own narrative and professional position, albeit brief, addressed why I selected these participants for this study. It was through my experiences, coupled with the emerging narratives of family members, that I embraced and presented the narratives of African American males as my core subjects. I analyzed the data utilizing contextual analysis and thematic ordering.

Chapter 4: Findings Illustrated Through an Analysis of Salient Themes

Chapter 4 presents findings through an analysis of major emerging and recurring themes across participant interviews. More specifically, it elaborates several salient themes from the students' personal stories of their mathematics-related experiences, influences, and their perceptions of what contributed to their access to and achievement in advanced secondary mathematics, as well as the barriers they reported having to overcome while on this accelerated pathway (see Table 2 in Chapter 3).

Spanning their schooling experiences from elementary through high school, the 15 emerging themes were clustered into four overarching themes about the collective experiences for mathematically successful African American male high school students, namely: (1) inequitable practices justified [and/or rationalized] by the dominant narrative, (2) caring and influential relationships, (3) early access to enriched and accelerated mathematics curriculum, and (4) intrinsic and extrinsic motivators [for success]. After a summary of the overarching themes, the cluster of relevant themes are discussed at greater length and illustrated using the participants' stories and voice.

Inequitable Practices Justified by the Dominant Narrative about African American Males

“There could be more people, there should be, and shouldn't just be me as a Black male, like the only one here. My thoughts are that's complete bull. Math has nothing to do with your race.” -Javian

This section addresses four themes under the overarching theme of inequitable practices justified by racial stereotypes about African American males: (1) Specialized schooling, (2) the pressures of being the select few, (3) deficit thinking and lower academic expectations, and (4) Negotiating stereotypes about Black males. In different

yet related ways, these four themes speak to the societal and institutional barriers that the participants each had to navigate individually even as they gained access and achieved success in advanced level mathematics courses.

Specialized Schooling

Students' cultural experiences are a part of their identity and should not be separated from the learning that takes place in the mathematics classroom. These experiences influence how they think, act, and respond in learning experiences. For that reason, the subject of mathematics, like all other subjects, "is situated within a cultural context" (Leonard, Brooks, Barnes, & Berry, 2010, p. 262). Four out of the six participants communicated the experience of having to leave their neighborhood schools at some point to experience a quality schooling experience appropriate to their academic talent. Often, they were placed in a learning environment that was culturally, socially, economically, and demographically different than their previous learning environment where the cultural context of the larger student body closely aligned to the participants'. Although Chris and Alex were not admitted into one of the centers for enriched studies schools or magnet programs, they were GT identified during their third-grade year and through their local programming experienced a school within a school model where they received their "specialized" instruction via a highly selective, isolated, and demographically skewed accelerated mathematics pathway beginning in the 4th grade.

Javian experienced both above-mentioned models of specialized programming. Although his neighborhood school was a center for enriched studies, which housed many students identified as gifted and talented (GT), the school segregated local and special programming within the building. When Javian was finally selected to move to the GT

side of the school, he recalled having to work extra hard to prove his mathematical capacity to his teachers, other school personnel, and sometimes his new peers. Even in the GT program, he was first placed in the lower level groups. As he recalled, “The green team was the slightly lower one and I was on the green team fourth grade. I was on the blue team the next year.” Transitioning from his neighborhood elementary school to a magnet middle school across town was even more of a challenge for Javian. He remembered feelings of isolation that mirrored those that came with the transition from local programming to GT just a few years prior; “The people I'd gotten used to, whether I liked them or not, were not there. And so, getting thrust into this new environment wasn't more difficult, but it just took some time for me to get used to the people I was with.”

Both Greg and Adrian's parents identified very early that their local school, in some way or another, did not meet the academic needs of their sons and decided to have them transferred to a school with better achievement results. Greg's mother transferred him to another school after second grade so that he could have a “better” schooling experience. At his new elementary school, Greg had to adjust his expectations as well as negotiate learned social behaviors, reporting, “Everyone, I felt, were ahead of me and a lot smarter than me.” Greg explained this feeling as isolation and lacking a sense of belonging. As with Greg, Adrian communicated that his parents were not pleased with the low performance and poor instruction experienced at his local elementary school which resulted in his low performance on the standardized test in mathematics. Adrian said his mother, as a math teacher herself, often frowned at the conceptual understanding he demonstrated while working on homework. He too was accepted into the district's

school lottery program and transitioned into a higher performing school as he entered fourth grade.

Greg and Adrian's exposure to quality instruction in elementary school provided the opportunity for them to be selected into the district's most revered middle school, which is where they met Eric. Greg described navigating this new school environment as a struggle both socially as well as academically. All three students reported having to adjust to their new status as under-represented minorities in this elite school setting. Greg recalled feeling protective as he navigated this new environment that often made him feel as if he did not belong. "I wasn't tryna put my best foot forward. You know when you have your guard up you're not ready to learn. You're so focused on other things like how they see you." Eric similarly reflected on the fact that it was not until he enrolled at Hargrove that he began to experience racial and social segregation for the first time, saying, "I had to adjust and try to navigate through two different worlds. This new one where there were two clearly defined social boundaries that I was not previously aware of." Adrian entered 6th grade sitting in an on-grade-level mathematics class for almost half of the school year, despite earning a 90% on the placement exam. "They automatically assumed, probably because I was Black, that I should go into the lower level class and then once they saw my scores that's when they moved me to the higher-level course." Missing almost half the course put Adrian at a disadvantage with respect to his White academic peers enrolled in the advanced course from the beginning of the school year.

The Pressures of Being the Select Few

Across the nation, African American students, specifically males, find themselves receiving disproportionate access to higher level mathematics courses (Bozick & Ingels, 2008; Dalton et al., 2007; Esmond, 2009; Martin, 2009; Moses & Cobb, 2001; Oakes, 2005). While the overall number of students in advanced mathematics courses is increasing, there are clear racial disparities in students gaining access and experiencing success in higher level mathematics courses and those enrolled in remedial mathematics courses. Regardless of their ability or socioeconomic status, African American students are disproportionately enrolled in college preparatory and Advanced Placement (AP) courses (Bozick & Ingels, 2008; Dalton et al., 2007; Esmond, 2009; Martin, 2009; Moses & Cobb, 2001; Oakes, 2005).

Throughout their academic careers, the study participants' mathematical abilities afforded them access to academically rigorous courses and programs but at the cost of being isolated from other African American male students. About his experiences taking AP Microeconomics, AP Chemistry, and AP Psychology in high school, Eric recalled,

I was the only Black kid in the class. This was not different, but I did expect to see more representation from students of color ... I wasn't really seen as someone that they [White peers] could talk to because I didn't belong to their race or social group.

When asked why he felt his AP courses were not more reflective of the general school population, Eric concluded, "Black kids didn't want to take those classes because they would be the only Black kids in the class." Whenever Eric did have an African-American classmate he "kind of stuck with them," expressing the need to feel a part of a cohort.

Javian similarly reported feelings of racial-cultural isolation as a mathematically-advanced African American male student. Even though almost all students at his elementary school were Black or Hispanic, Javian recalled seeing only three other African American males in his GT program. Nothing changed as he matriculated through the selective magnet programs. “In middle school, it was only two Black males and one of them was from my elementary school.” At the time of the interview, Javian expressed that he felt isolated and angered as the only African American male in his 11th grade magnet cohort of over 100 students; “There could be more people, there should be, shouldn't just be me as a Black male, like the only one here. My thoughts are that's complete bull. Math has nothing to do with your race.”

In contrast to Javian and Eric, Chris and Nick attended schools in which minority students make up the majority. Even schools that were diverse in terms of race and social class, proved to be racially disproportionate in terms of access to and achievement in the higher-level courses. “You receive exemplifications of that every day. Just walk into any classroom, like everybody's different colors. It's a spectrum,” as Chris described most classes at his school. However, Chris was the only African American male on the school's math team. He understood why more students of color are not a part of the team as a two-part problem: (1) society's stereotypical portrayal of academic success as “something that is undesirable” for Black and brown students and (2) the “people that aren't outgoing enough to ignore that,” speaking to those that follow the status quo and/or live up to the underachievement stereotype of African American males.

Although it was not the norm at their schools, both Nick and Chris had felt the impact of being an exception to the norm as African American males taking higher level mathematics courses in high school. As Nick explained,

I've been one of the only Black people in my class and they'll bring up certain topics and just look at me and expect me to have the answer because it's related to African-Americans. So I don't want to be in an environment where I'm singled out.

Similarly reflecting on his experiences of being the only [or only one of a few] African American males taking advanced secondary mathematics, Chris reflects, "I'm representing something right now. You know what I mean? I'm representing something bigger than myself, and I don't think I would like to have that pressure on me."

Deficit Thinking and Lower Academic Expectations

Teachers who acknowledge and appropriately respond to the cultural differences that exist among students in any given classroom, are better equipped to value what capable learners of the non-dominant group bring to the advanced academic environment. These culturally competent and responsive teachers respect the experiences that have shaped how African American males enter school and how their ways of thinking, talking, and behaving may differ from the norms of the dominant culture. According to Waddell (2014), learning environments that reflect cultural competence empower students to self-reflect on their multiple identities and how those identities can be used to create a positive life path. This can be a difficult task for minority students in environments where there are perceptions that counter their academic, racial, and cultural identities.

Mathematics educators, specifically of African American males, who create classrooms that are culturally reflective, relevant, and responsive demonstrate a belief that students can be competent regardless of their race or social class (Sampson, 2010). These teachers have an identified commitment to providing students with the necessary scaffolding between what they know and what they do not know (content), their lived experiences (context), and then extending students' thinking beyond what they already know (competency). However, these educators must be able to scaffold in a holistic manner, using cultural and home experiences, to support the intellectual, and academic growth of African American males (Sampson, 2010).

Not recognizing it at the time, it appeared that the participants had to consistently prove their content knowledge and their capacity to academically compete and achieve to many of their teachers and peers. Eric sums up the lowered expectations of many of his AP teachers, "It was interesting because at the end of the class I was noted as one of the smartest kids in the class, which I don't really feel I was, but I was different than what they expected from Black kids." Even though his high school experience was better than his middle school experience, Greg nonetheless remembered quite a few run-ins with teachers and counselors who had lower expectations of his academic abilities and was very aware and vocal about how this made him feel. Speaking to an AP Government teacher's dramatic and public response to his earning the only 100% on a class assessment, Greg recalls, "I thought it was funny that he didn't think or that he was shocked that I was smart." Greg's response to this consistently lowered expectation of African American males, specifically regarding his interpretation of a school counselor's perception of him as an African American male was,

You should see my transcript; you should see everything I've done around the school. And for you to assume that I'm just you know, the average person the average Black male you see in the media, the stereotype, I was hurt to be honest. Greg also reflects on an experience with a White male teacher he had at Hargrove who thought he was reaching his African American students by using Ebonics and exuding other racial stereotypes. "You could tell that wasn't the way he was. He was just doing that, you know, because that was a reflection of what he thought he saw in the classroom. It wasn't authentic. I really didn't like him. And me not liking him made me not want to do well in that class. My mind just shuts off when I don't like the person teaching the class."

Adrian ended the semester as the only remaining African American student in his Honors Pre-Calculus class after the Asian teacher reportedly used intimidation to scare off all the other Black and Hispanic students on the first day. Up until the end of the course, Adrian felt this teacher treated him unfairly.

I had a 79.9% in the class and she still gave me the C, so I was like wow. Other people in the class would text me and tell me that she rounded their grades up by like 2 or 3% and I wasn't even 1% away from a B and she wouldn't round mine up.

Adrian decided not to fight the issue in fear of giving this teacher more ammunition to support her [apparent] racial bias against African American males.

Negotiating Stereotypes about Black Males

Through a critical lens, there is great need for educators to increase the urgency as it relates to programming for the academic, social, and emotional needs of African

American adolescent males, specifically raising awareness and accountability of their needs, identifying and challenging practices that contribute to their disproportional access, and honoring their academic capacity for achievement. Being isolated from majority of their African American peers produced social-emotional obstacles that many of these highly able learners of mathematics had to overcome. Three of the six participants recall experiences where they felt as though they were too Black for their White peers and labeled as “acting White” by their Black peers. with most of these experiences occurring during their middle school years which is an important time frame in their social development.

You’re “acting White” is a term that has been ascribed to Chris in the past by some of his White peers. Fortunately, Chris’s security in self did not allow such ignorance to sway him from his pathway of success. Chris states, "Okay, whatever. I'm just gonna keep doing me. I'm not gonna get enraged. I'm not gonna feed into that. When I get that vibe off somebody, I don't associate with them. I ignore that." Using an avoidance approach, Chris did not allow the bias of others to impact him negatively. Greg shared a similar experience where this type of bias was ascribed by some of his African American peers at Hargrove Middle School, “They had this thing they would call you ‘Oreo’ if you talked a certain way or acted a certain way. So I would do things to distance myself from that narrative. I would do things that, you know, just didn’t align with myself.”

Eric, Greg, and Adrian all report having had to navigate implicit bias from their predominantly White classmates who gave African American males students the impression that they did not belong. These three participants expressed that many of their

peers did not expect them to perform as well as they did and often reacted in shocking manners to their exemplary performance. According to Eric, “I think they expected me to do worse than them based off of their stereotype of African American males not being intelligent. Interestingly enough, in classes such as AP Physics, a lot of them came to me for help. Also my AP computer science class. I didn't really understand that but I help them anyway.” Greg, who also attended J. Borden offered similar insights about being one of few African American males in advanced mathematics courses, “There were some people who were new to the school that weren't really comfortable, you know working with me in a group or sharing with me their homework because they thought I was going to cheat”. Adrian also struggled when it was time for group projects in many of his higher-level courses where he was the only African American in the class. He remembers verbatim a specific incident while working on a research project in his AP English class:

They would text each other in the group about meeting up to work on the project on the weekend but they wouldn't text me or invite me to work with them. And then when I did submit work to them they would take credit for it and not give me the credit for doing my part. Everything that I wrote in the document the other group members would delete or erase. I felt like it was unnecessary. So a lot of times when it came to projects I decided to work by myself. My mother used to ask why I had so much work to do and it was really because I had to do by myself what other students were doing with three and four other group members.

The group of participants all understood that some of their individual encounters with racial bias were only remnants from a larger societal problem which stereotypes African American men as hyper aggressive and underperforming. Adrian attributes this

societal bias with how African Americans are often portrayed in the media. “Most of the Black men that are successful that you see are rappers or they play football or some type of sport. A lot of times in the media we are portrayed as drug dealers and criminals.” Nick communicated similar feelings about the larger society and the intentions of some media sources:

Alright, I have to do well because I'm Black and the odds are stacked against me. It has nothing to do with the school per se, I think just like society's view on Black people. Now that I've been in high school and I'm getting older, the news is frequently reminding us why we're lower than other classes or other races or why certain things happen to us.

Chris understands that there are many in America who do not value the richness of culture, wisdom, and strength that African Americans possess:

Stereotypically, they view us as being less intelligent, sometimes aggressive. They have less expectations for us. People look at me and they think that I'm some type of thug or something. You can tell they just don't wanna be friendly or interact or I don't even know how to explain it. But they just give you this certain energy, like this vibe, like, ‘Oh, you're one of them. Yeah, you're that type of person’.

In summary, students bring differentiated yet rich knowledge to the classroom influenced by their lived experiences. This knowledge should serve as a foundation for the curriculum and instruction that take place in the classroom. Teachers, specifically mathematics teachers of African American males, must develop social competency to better bridge the gap between teaching and learning, for the sake of eradicating the

current achievement gap. Participants of this study would have benefitted from schools programming for their academic, social, and emotional needs as African American adolescent males and understanding the impact that comes with having to leave your local neighborhood schools, which for many reasons could not provide adequate learning opportunities to meet the needs of these highly able African American male students, and the compromise of familiarity and community that came with this transition.

Caring and Influential Relationships

“Keep it real!”

-Nick

One consistent theme that spoke to the collective experiences of all six participants was the presence of caring and influential relationships; specifically, intentional and supportive interactions with parents, teachers, and peers had a direct and positive influence on every participants’ successful access and achievement in higher level mathematics.

Parental Support and Advocacy

Capturing the experiences of the six African-American adolescent male participants, who have demonstrated consistently high levels of academic achievement, inclusive of mathematics, revealed that they all have family members who helped them develop and maintain high expectations for academic attainment. They all understood their parent’s expectations regarding their academic performance in school as they encouraged and communicated the value of education, leading to a lucrative career, and resulting in a high quality of life as an adult. The range of parental involvement in their son’s education included examples of hard work and determination at home, interactions

and advocacy on the school level, enriching materials, activities, and opportunities, and in some cases access to external role models and mentors, all in a strategic attempt to benefit the child's educational and future success.

The participants uniformly assert that their families uphold the value of education and that this, in turn, motivates them to achieve at their highest ability. Speaking for the group, Nick stated, "I know I have a bunch of things I need to accomplish and that I want to accomplish myself. And then also I just want to make my family proud, I think that's every child's dream." Chris, who reports having not had very impactful K-12 teachers, asserted that the relationship he has with his family is monumental to his academic persistence. "They're not really ever satisfied with what I produce. It's always like, 'Oh, we want more, we know that you can do better,' appreciating the extra push towards greatness." Although some teenagers might see this as overwhelming, Chris did not. "I appreciate that it's positive. It's always a positive pressure. Oh, I have something to do. My dad would want me to do this, my mom would want me to do this." Chris further explained that his parents' tough love has led him to academic success. As Nick and Chris' accounts indicate, parental advocacy and support was a consistent theme across participants, although it was clear that each experienced somewhat different parental interactions and approaches growing up.

Despite their differences, all six of these young African American males revered the relationships developed with their mothers and point to the crucial role of African American mothering to their academic success. That said, this played out differently for each participant. For example, according to Eric, his parents decided that it would be best for his mother to become a stay at home mom, ensuring that her two sons had the love

and support they needed to thrive academically as well as in life. About the relationship he shared with his mother who he looked up to as a role model, Eric shared, “I feel it was just her being there and knowing that I had someone there to talk to” that helped me succeed. When Javian was asked to explain how his parents supported his academic achievements he spoke a great deal about the emotional support provided by his mother, “My mother is always there, my father too but, because I’m with her for the most part she’s the one who encourages, pushes me to go a little bit further, just convinces me to just keep going, especially when I don’t want to, but I should.” Adrian recalls whenever he was in a bind, his mother would step in and remind him of his privileges stemming from her being in the field of education, specifically one who teaches the higher-level courses at a Math, Science, and Computer Science high school.

Although I did not specifically ask participants about their explicit preparation as Black men in America Greg, who is fully aware of the current racial and inequitable state in the country shared the very different but equally valued relationship with his mother that aided in his academic success. It was Greg’s mother who had “the talk” with him about how he always had to be aware of his surroundings and the people sharing his space, specifically in places where he may be one of few other African Americans if not the only. This talk was exceptionally important at the given time as he transitioned from his neighborhood school to a middle school “across town”. This intentional conversation was her attempt to prepare him for the world, more specifically 6th grade, as he entered an affluent and predominantly White middle school. This level of awareness and advocacy from his mother, who is also an educator, is documented even earlier than this

situation as she had him transferred in elementary school to avoid a teacher who was known for being “rough with the boys”, young Black boys to be more specific.

There is no surprise that the mothers of the participants appeared to be more active in the day to day support of academics and demonstrations of affection. However, the father’s participation in their sons’ development as proud, productive, and motivated Black men did not go unmentioned by any of the participants. Although Greg has never had an African American male teacher, his father, member of Omega Psi Phi Fraternity, Incorporated, made sure that Greg and his older brother was consistently exposed to positive images of Black men. Several other participants also highlighted the impact their fathers, all African American males, had on their academic and social development:

- “My father instilled in us that we had to work really hard in school in order to make what we wanted to happen happen” (Eric)
- “I definitely look up to my father. I think that he's very hard working and he basically carries the family on his back” (Chris)
- My dad, he got a full education, he's a smart man, very well disciplined. The way he is disciplined is not the same like here [America]. He knows what he's supposed to do, he makes sure he has his priorities straight and he makes certain sacrifices that normally you wouldn't see other people do here [America] to make sure that me and my mother and my sister have a good foundation over here [America]. Me and my dad are always competing. Who's faster? Who's taller? Who's better at soccer? Who's better looking? Obviously, me! Who dresses better? We're always competing. So, I've always

held myself at a high standard. Not just with my dad, but everybody. I always wanna be dominant than others. (Nick)

Caring Teachers

Participants expressed frequently the academic, social, and emotional benefits of their interactions with positively influenced teachers. They identified the qualities of caring teachers to include being kind, patient, respectful, encouraging, honest, and transparent. Teachers that have been influential in their academic success made themselves available not only for academic support but showed genuine concern for their social and emotional wellbeing outside of the content. There was an obvious desire that these teachers wanted to see them succeed beyond their immediate interaction. These caring teachers created a sense of belonging for all students, making the learning relevant to each individual student, while holding them accountable to high expectations.

Participants also spoke directly to those teachers who were not successful at building authentic student-teacher relationships and the impact it had on them. At some point and in varying ways, this lack of rapport further influenced the sense of belonging that many participants felt was lacking, specifically in their higher-level math classes. Even in cases where participants made out well in the end academically, social and emotional levels were impacted due to these often direct and unwarranted interactions.

In their narrative interviews, participants repeatedly returned, with great enthusiasm and satisfaction, to the theme of teachers and administrators who they deemed to be influential in some significant way in their success as students. Three of them specifically identified the relationship they developed with an African American male teacher as the most influential student-teacher connection to their academic success.

Some of these African American male role models taught mathematics, some did not. Although he felt his French teacher, Mr. Watson, nagged a lot, Nick perceived him as having been caring and provided useful, relevant advice. “It was almost like talking to my dad”, explaining how the two of them would always go back and forth, toe to toe with each other. Adrian also credited Mr. Watson, his 5th grade teacher, as the person who aligned him to “the right path in math” and helped him to develop a new love for the subject. Javian, who now plans to major in biology in college, cited his seventh-grade science teacher, Mr. Kindell, who “was a really kind, a nice guy. Someone I would aspire to be like”, as a major influencer to his love for learning and achievement.

Other participants cited caring relationships and interactions with teachers who were not African American males, sometimes because they had never had a male African American teacher, much less one who taught mathematics. According to Greg, a White male teacher he had named Mr. Daniels went out of his way to meet the needs of his students mathematically, socially, and emotionally. Greg shared, “He checked on me you know when my uncle passed away my 10th grade year. He made sure I was ok and didn’t want me to rush back into math because he said that was not what was most important”. Eric spoke of quite a few influential teachers he had, specifically his Finance teacher; “She was actually the best teacher that I ever had because again she got me interested in the topic and she was also very encouraging”. Nick discussed a teacher, Ms. Mary, who made herself available to her student who needed to talk about life. Nicolas described it as such:

She's always someone you can go to if you just need to talk about anything or you wanna look at your grades. She'll look out for you too. For me, she always talks to

me and says, 'Nick, I hear chemistry is not going well for you, if you need help you know where to find me!' She always offers her services to me or in general to any student, so I feel like I can talk to her.

Chris was the exception to the rule. In contrast to the others, Chris did not see his mathematics teachers, or any teacher for that matters, as being a highly influential factor to his level of success, good or bad. Probing a little further I learned that his mathematics teachers were simply "good enough", in his opinion, referring to their quality of teaching without speaking to any building of relationships. He did, however, see the general value of teachers building supportive relationships with their students and how some students, outside of himself, really needed that level of attention. When asked to discuss teachers that had any influence on his performance as a successful student, Chris immediately went to his Biology and Chemistry teachers, speaking specifically to the content of the courses that represents his subject matter of greatest interest. This leads one to wonder if his perception of teacher relationship was built through his experience of never having one that intentionally tried to connect with him.

Positive Peer Support

When identifying sociocultural effects of the academic performance of African American males, it is very important to understand the role that peer influence plays. African-American adolescent males accessing and achieving in advanced mathematics courses, as all other groups, benefit from surrounding themselves with academically motivated peers. Even though for the most part the participants navigated through the advanced mathematics pathway in isolation of a racial peer group, they all communicated the added value and comfort when seeing someone who looked like them in these

classes. They also discussed that the scarcity in African American male enrollment in advanced level math classes was recurrent in that there was not more ethnic representation because there was not more ethnic representation. These scarce instances of social interaction with culturally similar peers, even in an academic setting, reduce the excessive need to conform to a way of acting or thinking, especially since it often required them to denounce self. Even in the most integrated venues, participants naturally and intentionally gravitated towards people who look like them, have common interests, experiences, and expectations, but also unique enough to have an interesting relationship.

Having a sense of belonging within a peer group plays a powerful role in the development of African American males. All the participants of this study eventually developed healthy associations with other members within their ethnic peer groups, more likely than not, outside of the classroom setting. They used their involvement at church, clubs, and community and school-based sports to foster friendships and create social encounters to deescalate from their aggressive course loads as well as indulge in safe spaces where they felt they belonged. Emotional support, academic guidance, companionship, balance, encouragement, exposure, a release from academic pressure, fun, and identity development are a few of the benefits that strategic planning and recruitment of African American male cohorts offer. These benefits affect their motivation, adjustment, and continued achievement.

The importance of positive social and academic interaction and support of their peers was a theme that all the participants cited:

- “So, I have a lot of friends. Well, I can't say a lot, but yeah, I kind of have a lot. And the majority of them are girls. And without them, I would actually be lost” (Nick)
- “We kind of, you know, did work together to kind of make sure that we were both on the same page and we kind of had a bearing on what was going on in the class” (Greg)
- “My friends, they're nice, they're fun. In terms of education, if I need help from them and I ask them, they'll help me out. And if they ask me, I'll try to help them out” (Javian)
- “I did not have a core group of friends in elementary school mainly because I moved around a lot. I met a couple of friends in middle school and then picked up a few more in high school” (Eric)

Eric further shared that his friends were a very mixed group in terms of their race, economic and academic status, and career aspirations:

I had this one friend who worked for Microsoft while a sophomore. He definitely had the interest in the capacity to do well and programming but was not motivated to get good grades or take multiple AP courses. So instead of studying for classes and test a lot of them felt like ‘oh I can be doing other stuff outside of school like interning and programming, creating different things. Most of my friends were engineering majors, but I’m a business major.

Even though for the most part the participants navigated through the advanced mathematics pathway without having a real racial peer group, they all communicated that seeing someone in their classes who looked like them, male or female, and as rare as it

occurred, gave them an added sense of value, comfort, and belonging. For example, Eric shared the following regarding the need for larger cohorts of African American males in higher level courses:

I think having someone else in the class like me who understood the struggle of being a minority and segregated helped me get through the class as well as how to navigate through what it means to be Black or Hispanic in a predominantly White environment.

Adrian shared similar feelings, comparing the times when he felt socially/racially isolated to those when he felt he was a part of a cohort;

It felt good to be around other people that look like me. It was a good feeling because when I was in classes where I was the only Black student they [non-Black classmates] kind of looked at you like you don't belong here. But I know I belong here.

In summary, the importance of caring and influential relationships to their mathematical successes ranged in focus on positive and supportive interactions with their parents, teachers, and peers. Further in the findings is more discussion on the results of disproportionate access to higher level courses, which often leaves African American males isolated in environments where they must consistently prove their placement and ability to achieve to some of their non-Black teachers and academic peers. Being isolated from majority of their African American peers produced social-emotional obstacles that many of the participants had to overcome.

Early Access to an Enriched and Accelerated Mathematics Curriculum

“Honestly, I would rather be overwhelmed than under-stimulated, at any point”

All six of the participants credited early access to an enriched and accelerated mathematics curriculum as crucial to their long-term success and access to an advanced mathematical pathway. This included: (1) early identification as mathematically advanced, (2) enrollment in high performing schools and specialized programs, (3) early exposure to rigorous mathematics content, and (4) active participation in extra/co-curricular opportunities.

Early Identification as Mathematically Advanced

The participants all expressed that, very early in their academic trajectories, they were identified as being strong mathematical students and, as part of this, were placed in the highest ability groups for mathematics in their elementary schools.

- “When I was in elementary school, they'd be like, ‘Oh, go to this class. You're pretty good at math and you get the answers right’” (Chris);
- “Probably third grade they arranged us by color based off of our ability” (Eric);
- “It wasn't like they were really far off, but I just know for sure that, whenever we would have math block, I think they would divide us up into groups based on your math level. I know generally I would be with the group who just did better” (Javian).
- “I guess the major difference there was they cared about everyone’s individual abilities and how they learn best”, speaking to the teachers splitting the class into groups based off ability and learning styles (Adrian).

Had the participants of this study not been identified early enough to enter the mathematical pathway to Algebra I before entering high school, they too could have found themselves on a mathematical pathway that does not further their academic attainment. Some were naturally identified by their local school teachers, others had to transfer to higher performing or specialized schooling programs, and some even had to have one on one conversations with their teachers to discuss their mathematical ability in comparison to their counterparts and the level of rigor provided by the instructor. As mentioned above, many of them also participated in co-curricular enrichment materials, activities, and opportunities outside of what the school provided to support their academic development.

Rigorous Course Enrollment

As mentioned in Chapter 1, access and achievement in rigorous course work, especially mathematics is uniquely critical and aligned to students' ability to access, compete, and thrive in college and ultimately prosper in the global marketplace. Even for those who chose not to go into a STEM field, advanced and enriched mathematical opportunities on the secondary level prepares students for life success related to opportunity and income. Four of the six participants expressed that they were transferred from their local community schools to more selective and higher performing public schools in their district. This happened through acceptance in their districts' choice lottery or acceptance into a special programming school such as centers for enriched studies and magnet. Although Chris and Nick maintained enrollment through local programming they were still afforded the opportunity for enriched and accelerated mathematical opportunities.

Early identification, access to rigorous mathematical experiences either through local programming or specialized programming, with highly effective teachers allowed all six of the participants to access and achieve Algebra I and Honors Geometry before entering high school. The six students advanced level pathway included successful completion of at least one AP Calculus course and multiple other AP courses including AP Government, AP Physics, AP Computer Science, AP Microeconomics, AP Chemistry, and AP Psychology to name a few. In the most hyper-accelerated case, Javian passed Algebra II in 8th grade, granting him access to Honors Pre-Calculus as a high school freshman.

Extra-Curricular/Co-curricular Opportunities

In addition to their academic access to higher level curriculum and courses, engaging in extracurricular and/or co-curricular activities played an influential role in the participants' success. Sports, after school and co-curricular programs provide structure and predictability for many young African American males. These programs, clubs, jobs, and organization affiliations serves as places for African American males to socialize with their peers in a cooperative, team building environment, which is especially important for students who are not getting this level of support in their core academic settings. As a member of an organization known for something positive, participants gained a sense of belonging, self-worth, and the experience of being needed for something outside of themselves.

A few of the participants in this study talked about their participation in high school sports being helpful in fulfilling a sense of belonging, which was absent from many participants classroom experiences. Being a member of the track team definitely

helped Eric; “I think it helped a lot because it taught me how to compete against other people and how to push myself beyond what I thought I could do”. Chris, who is a varsity level athlete on various sports teams as well as a member of NSBE, believes his active participation and leadership experiences outside of the classroom promote a sense of community amongst him and many of the other African American students in his school community. Their coaches and sponsors played a vital role in their network of social relations, using sports participation to link principles of character development, team work and collaboration, and academic success.

Participation in athletics is not the only extracurricular activity that has shown to improve the self-esteem and play a part in the academic achievement of African American males, specifically the six participants within this study. Some of the participants named different clubs and community volunteerism as their extra/co-curricular activity of choice. While in high school Greg was “a big film guy”. During his senior year of high school, Greg was afforded an opportunity to submit a project and travel to California for a high school film competition. He was also a member of the recycling club and volunteered in the community with his father and the men of Omega Psi Phi Fraternity, Inc. At the time of the interview, Javian was a member of his high school’s drama production as well as the layout editor of the school magazine publication. “I think the extracurricular activities give me a release from my academics” as he explains the impact of being a part of the various clubs and programs at his school (Javian).

Nick shared his belief that if school districts are serious about equitable access and achievement in upper level mathematic courses for African American adolescent

males then they need to provide more opportunities for quality co-curricular programming. Nick has been enrolled, for the past three years, in Mathnasium, a local math-only tutoring learning center, while also maintaining a part-time job as a lifeguard. Adrian recalled attending summer STEM camps sponsored by the University of DC every year beginning in elementary school. He is also a huge basketball fan, playing for a community team throughout high school.

In summary, participants and many like them continue to thrive academically, socially, and emotionally when they are adequately and timely prepared and exposed to high expectations and then supported through those expectations. The six participants of this study responses ranged in their exposure to high quality schooling experiences to include early identification as strong mathematics students, acceptance and enrollment in specialized schools and programs providing access to quality instructors, early exposure to rigorous mathematics content, and active participation in extra/co-curricular opportunities as social outlets.

Motivators

“I knew I had to continue in math and get better at it because I knew that was the area I wanted to go into as a profession. So I stayed on for the challenge because that’s a part of my personality as well, I love to be challenged.”

-Eric

Caring and supportive relationships coupled with varying social, cultural, and academic experiences helped create additional motivators for participants to continue to pursue academic excellence, specifically in mathematics. Each participant developed and experienced intrinsic and extrinsic motivators built on (1) their self-efficacy as

academically strong students, (2) their family's academic lineage, (3) their college and career aspirations, and (4) their desire to create a counter narrative regarding the academic abilities of African American males, all of which participants identified as positive influences to their access and achievement in advanced level mathematics courses while in high school.

Self-Efficacy

Mathematics identity development, according to Martin (2000), also includes what it means to do mathematics and students' beliefs about success or failure in doing mathematics as a process of socialization. What he communicates is that the identity that a student constructs influence and are influenced by their past participation in mathematics. For example, every participant of this study experienced early access to rigorous mathematical content in the form of highly effective teachers, gifted and talented services, accelerated and enriched courses, and/or the acceptance to specialized mathematics programs. Therefore, their exposure to success in a higher-level mathematics courses provides expectation for greater participation and achievement in mathematics, building upon their positive identity.

It was evident that each participant was highly motivated and confident in their perception of self and their ability to succeed against the odds. They voiced high expectations of success for themselves, even when those in power, position, and/or were a part of the majority expected different outcomes.

- At the end of the day, I understand that the power is in my hands, even if they don't like me or I'm not their favorite. If I just push hard enough, then I know I'm gonna get the grade that I want or the grade that I deserve. (Chris)

- But I was like naw, I understand this. I'm game. I can do this. (Adrian)
- I think it's just me. There are a bunch of little things that have helped me move forward, but at the end of the day it's all up to me. I know what I need to do. I know I'm great. I know I'm a good guy. And I know what I can be. And so I think with those motivations and the knowledge of who I am are big factors in who I will be. (Nick)

Creating a Counter Narrative

Another motivator expressed by participants was a desire to dismantle negative stereotypes of African American academic abilities. Five of the six participants had internalized one way or another how racism has created a narrative of the academic abilities and contributions of African Americans, specifically males, and are intentional in demonstrating the lie that American history has accepted. Participants communicated their awareness of and response to this dominant narrative of Black men in America and the stereotypes that were birthed from it, in different ways. For example:

- Stereotypically, they view us as being less intelligent, sometimes aggressive. They have less expectations for us. People look at me and they think that I'm some type of thug or something. You can tell they just don't wanna be friendly or interact or I don't even know how to explain it. But they just give you this certain energy, like this vibe, like, 'Oh, you're one of them. Yeah, you're that type of person' (Chris)
- "Most of the Black men that are successful that you see are rappers or they play football or some type of sport. A lot of times in the media we are portrayed as drug dealers and criminals" (Adrian);

- Alright, I have to do well because I'm Black and the odds are stacked against me. It has nothing to do with the school per se, I think just like society's view on Black people. Now that I've been in high school and I'm getting older, the news is frequently reminding us why we're lower than other classes or other races or why certain things happen to us. (Nick)

Academic Lineage

According to McGue, Rustichini, & Iacono (2017), students who have at least one parent who graduated from a four-year college or university are much more likely to access and achieve in college themselves than those with parents who did not graduate from college. Hertz, Jayasundera, Piraino, Selcuk, Smith, & Verashchagina (2007) reported that although the parent-offspring correlation for educational attainment remained high and stable over the past 50 years, the comparable sibling correlation is even higher.

Five of the six participants had at least one parent with a college degree. Greg communicated that his father attended Southeastern University and worked for the Federal Government while his mother received a degree in Education from the University of DC and teaches 2nd grade. Both college graduates, Chris's father manages a center for disabled adults while his mother serves as a family nurse practitioner. As the youngest child, Chris also has his big sister to look up to, "she's 11 years older than me. She teaches middle school English now, in New York. She went to St. John's University and then she went to LIU" (Chris). Nick's father received all his education including four years of college in Haiti while his mother's family moved to Boston where she attended grade school before obtaining a law degree from George Washington University. In

Eric's narrative he spoke of how his parents met while both were students at Howard University, one of the premier Historically Black Colleges and Universities (HBCU) located in Washington, DC. Although the aptitude was there for college success, Eric's mother decided to end her academic trajectory to become a stay at home mom, dedicating all her attention and energy to the complete development of her two sons even though it sometimes provided financial strain on the family. Adrian's mother has a degree in Mathematics and became a high school mathematics teacher before he was even born. Although his father never attended college Adrian noticed that his father worked endlessly to provide for the family and to set a good example for his sons.

Many first-generation college students, and those on that trajectory such as Javian, utilize their academic achievement to gain economic prosperity and social mobility simply as a way to honor their families. Ironically enough, Javian is the only participant who has two loving and supportive parents of which neither has formal college experience, the only one who spoke directly to the family's low socio-economic status as a life experience, and yet manages to represent the highest performing of the participant. One could easily conclude that the lack of college experience coupled with current socio economic levels in the home are motivating factors for Javian's academic drive as well.

College and Career Aspirations

All participants identified their college and career aspirations as driving forces to their academic success and enrollment in higher level courses. Javian and Chris communicated their desires of entering a STEM field, realizing how the science of mathematics is applicable, in some way, to every field of study. This is evident as they

are projected to complete their academic high school career having completed AP Calculus AB and AP Calculus BC and plan to major in a science field once in college. Eric and Adrian are both interested in the field of finance which is why they continued the advanced mathematics track through AP Calculus BC as well. Eric, a business finance major, shared “I knew I had to continue in math and get better at it because I knew that was the area I wanted to go into as a profession. So I stayed on for the challenge because that’s a part of my personality as well, I love to be challenged”.

Although Nick nor Greg aspire to enter a field requiring high levels of mathematical knowledge, they both understood the importance of the advanced level course sequences for college applications and acceptance to include AP Calculus AB. More specifically, Greg who decided to major in political science, understood the relevance of his AP Government class in the preparation for his future career plans opposed to a second year of calculus. Speaking of the outcome of this AP Government course, “I wanted to do well. I think I want to put forth the effort because I knew it was tied to something outside of the school” was the reason Greg studied harder, went to his teacher’s office hours, and worked exhaustively on class presentations.

Berry and McClain (2009) offered three overlapping components that contribute to the development of a positive mathematics identity: (a) motivation to succeed in mathematics; (b) strong beliefs in their mathematical ability; and (c) caring mathematics teachers. The participants’ motivation to succeed in mathematics was highly dependent on their mathematical identity which was shaped through their developed beliefs about self within the content and the cultural context of current and past experiences. This self-awareness as highly able learners were developed only after given an opportunity and

experiencing success, producing more opportunities and more success. While considering students' past and perceived present experiences and linking these experiences to their anticipated future experiences I add family academic lineage and college and career aspirations aligned to their life style goals as a fourth and fifth component to Berry and McClain's assertion.

Chapter Conclusion

This chapter presented the findings from interviews with six African American adolescent male students currently or previously enrolled in an AP Calculus course at four different high schools. Spanning their schooling experiences from elementary through high school revealed 15 emerging themes that were clustered into four overarching categories, namely: (1) inequitable practices justified [and/or rationalized] by the dominant narrative, (2) caring and influential relationships, (3) early access to enriched and accelerated mathematics curriculum, and (4) intrinsic and extrinsic motivators [for success].

The resulting analysis of the individual narratives provides a rich representation of the most influential factors these young men attribute to their access and achievement in advanced level mathematics courses and the individual and institutional barriers they had to overcome. Caring and supportive relationships, early access to an enriched and accelerated mathematics curriculum, and intrinsic and extrinsic motivators essentially served the purpose of identifying the most influential factors that these African American adolescent males attribute to their access and achievement in advanced level mathematics courses while in high school. The experiences of the study participants also included the

impact of navigating societal, institutional, and individual racial bias regarding African American males' access and achievement with quality instruction.

Chapter 5: Findings Illustrated Through Participant Narratives

Chapter 4 presented findings through an analysis of major emerging and recurring themes across participant narratives, elaborating several salient and four overarching themes about their collective experiences, namely: (1) inequitable practices and race-specific obstacles rationalized by dominant narratives about African American males, (2) caring and influential relationships, (3) early access to enriched and accelerated mathematics curriculum, and (4) intrinsic and extrinsic motivators for success. Chapter 5 presents findings in the form of six in-depth individual narratives of the experiences of African American adolescent males who have demonstrated successful access and achievement in upper level mathematics. These narratives highlight participant resilience as each navigated variant form of racialized and gendered discrimination and inequities as Black males. In keeping with the spirit of narrative research, this chapter seeks to give voice to each individual study participant, present their words, and their expressed thoughts, feelings, and lived experiences. It also captures their perspectives on recommendations for enhancing outcomes for other black male students. As such, it includes a sizable number of verbatim quotes.

The goal of this chapter is to intently and effectively highlight participant voices. Therefore, I begin each of the six narratives with a poignant quote from the individual participants. These quotes speak to their mathematics-related experiences and, hence, my research questions. Each narrative then continues with a retelling of the corresponding participant's academic story. It is important to note that the very purpose of my narrative inquiry was to answer my research questions through the individual stories of participants' experiences.

Although all the participants highlight similar experiences on their academic journey, they each bring a personalized reflection of the collective struggles of African American males. I intentionally chose the six participants to present the African American adolescent male experience within different schooling, socioeconomic, and geographic distinctions, reflecting the diversity of the research sample. I utilized an approach of restorying, providing in-depth characterizations at several stages of the students' lives, to complement the counter-narrative methodology and answer the research questions of this study.

Adrian's Narrative

They automatically assumed, probably because I was Black, that I should go into the lower level class and then, once they saw my scores, that's when they moved me to the higher level course.

-Adrian

Early in our initial meeting, 18 year old Adrian shared, "I want to help provide financial stability for lower-income families" as his rationale for wanting to enter a field of finance. Seeing some of the economic challenges of many members of his family, his church, and close friends, increased his desire to enter a field where he could "give back." Adrian shared that, after taking his first finance course, he fell in love with the subject and decided that he wanted to pursue a career in financial planning. As a result, Adrian joined the Academy of Finance while a junior at J. Borden High School. As a recent graduate, Adrian is ecstatic about his acceptance and matriculation to George Washington University as a freshman business finance major during the upcoming fall semester.

It was easy to conclude from our time together that a high quality of life was the biggest motivator for Adrian's successful academic performance. "I want a job where I can be happy," defining happiness as being in a position that has an "opportunity for growth" in position and salary. "I also wanted a job where I can influence others," speaking specifically about the relationship he has with his younger brother and cousins and his desire to help those in need. As the first male in his family accepted to college, he internalized an obligation to the patriarch who came before him and those coming after him to set a different trajectory of opportunity and expectation, a challenge that Adrian gladly accepted.

Throughout the years, Adrian reported having witnessed many African American males, family members, classmates, and neighborhood friends, fail academically. "I've seen a lot of people who didn't finish high school or didn't do well in high school and go to college and I just didn't want to live that kind of life." At the same time, Adrian cited having had an equal exposure to African American males who were successful academically and professionally. This supported his social and academic development and fostered a high sense of what could be.

Adrian attributed racial disparities in America to a cycle of poverty plaguing many Black communities, one that he sees as having been intentionally designed and maintained by Whites in power. According to Adrian, the shortage of positive examples of African American academic and professional success in the media is a large piece of that puzzle. Adrian observed, "Most of the Black men that are successful that you see are rappers or they play football or some type of sport. A lot of times in the media we are portrayed as drug dealers and criminals." He observed that U.S. society has convinced

many Black men that they only have non-academic and non-professional options to provide for their families and therefore educational attainment is no longer the number one priority as it may have been in their earlier years. Adrian told me that he sees this as being especially true in “large African American communities” - communities that often lack positive visibility and adequate job opportunities.

Adrian also shared his belief that college is not for everyone, nor is it the only means to live a happy and successful life. He cited his friendship with Delo, an African American high school male who attends the same church as him, as an example. According to Adrian, Delo is fully convinced that he wants to attend college after graduating high school. Instead of attending a four-year college, Delo apparently plans to go straight into a career as an electrician and has taken Career and Technical Education (CTE) courses during high school so he will graduate with a certification in the field of study. Adrian has firsthand exposure to this alternate route to success as his father never went to college but has a Commercial Driver’s License (CDL) and has always provided for his family as a truck driver.

Adrian explained that it is his mother who has had the most influence on his achievement. Adrian described his mother’s parenting style as “both overbearing and laid back.” Laid back with the choices he made such as friendships, but very protective or overbearing with the places he could go unless “they were school related or at church” where she directed the choir. Adrian shared that whenever he was in a bind she would respond in a way that communicated “I’ve been there. I work at a high school, so I know how to help you get through this”. According to Adrian, she had a great way of putting herself in his shoes and being able to relate to what he was going through academically.

As he gets older and examines the lives of peers, he told me that he appreciates his mother's overbearingness and dedication to his academics as it has helped him end his high school career with a final 3.7 grade point average and successful completion of multiple Advanced Placement (AP) courses.

As an active member in the educational community, Adrian's mother has made sure he experienced a range of enrichment opportunities and extracurricular programs. Adrian recalled at a very young age, attending summer STEM camps sponsored by the University of the District of Columbia. His mom, a high school math teacher in a neighboring district, ensured that he was enrolled in these camps to expose him to hands-on experiences for chemical and electrical engineering, while also developing his mathematical capacities. Such co-curricular programs came in handy as Adrian did not feel he was a strong math student while at his first elementary school, which was low performing. "I think the harder classes pushed me to be better. Once I realize that I could excel in the harder classes, I realized that I could do college". Luckily, he was accepted to the district lottery, transferred to higher performing elementary schools. This helped him progress as a young mathematician.

Adrian reported that he did not have the best introduction to mathematics in elementary school. Explaining the apparently substandard mathematics instruction he received in his earliest years of mathematics learning, he explained, "so of course like any regular elementary school, you have one teacher who teaches all core subjects, but it felt like the teachers were stronger in English or history compared to math." However, at the time, Adrian believed his teachers could do no wrong which produced great debate at home when his mother would contradict what his elementary teachers had convinced him

was the right approach for mathematical thinking. Adrian changed his tune after receiving his third grade standardized test scores which communicated very low results in his conceptual understanding of mathematics and much higher scores in reading and writing.

Adrian expressed that, beginning in fourth grade, he ‘luckily’ was accepted into the district lottery system for choice and was able to attend a school with greater student academic results. Speaking to the teachers splitting the class into groups based off ability and learning styles, Adrian stated, “I guess the major difference there was they cared about everyone’s individual abilities and how they learn best.”

Adrian claimed that his favorite and most influential teacher was his fifth grade teacher Mr. Watson, his first African American male teacher. Adrian credited Mr. Watson as the teacher who set him on “the right path in math,” fostering his newfound love for the subject. Up until this point, Adrian believed it was his reading ability that made him stand out amongst his peers, noting that he often read church announcements and Sunday scriptures in front of his very large church congregation.

Adrian suggested that Mr. Watson intentionally connected more with his students than any other teacher he had had – and has had since. Mr. Watson was known for inquiring about the lives of his students and what was going on with them outside of school.

One student was in a car accident that year, so he made sure that he was okay and talked to his mom and just really cared about us outside of the math. I think that's what created the bond that he had with all the students in the classroom.

According to Adrian, Mr. Watson had very high expectations for his students. He also had equally high expectations of parents, expecting them to support their child's mathematical identity and development. Recognizing the importance of algebra, he apparently prepared his 5th graders for Algebra I. Adrian also clarified that, during instruction, Mr. Watson required his students to hold each other accountable for success, as if they were family members. Often, they had to check each other's work and provide each other feedback for corrections needed. "He wanted to make sure that all of us went to the high school that we wanted to go to, the best high school, as well as go to college and do well in math." According to Adrian, every student in his class got in higher level math classes as students at the premier middle school.

Adrian had to overcome new barriers to mathematics success as a middle school student. As too often happens to African American boys, young Adrian was tracked into a low level mathematics course despite evidence of his mathematical aptitude. For the first half of his sixth grade year, Adrian was inappropriately placed in the lowest level mathematics class although he had earned a 90% on the middle grade placement exam. "They automatically assumed, probably because I was Black, that I should go into the lower level class and then, once they saw my scores, that's when they moved me to the higher level course." Adrian remembers that school administrators attributed the mix up to his 5th grade standardized test scores arriving late. "I was in the regular class, and it was all Black students, even though at Hargrove [Middle School] most of the kids are White. In this class, the kids couldn't do anything. They couldn't even add and subtract."

Adrian presented himself to me as the typical "good student" who was quiet and compliant, never challenging the decision of adults. However, as he matured, Adrian

indicated that he increased his awareness of adult mistakes, or bad intentions, and the importance of self-advocating. Overwhelmed by the lack of challenge, Adrian communicated that he had to approach his 6th grade math teacher. “I told him that I didn't think that this was the right class for me.” Adrian recalled that the teacher responded, “Yeah I just got your scores and you should be in the higher level class not the lower level class.” Missing the first half-year of the advanced course, put Adrian at a disadvantage with his academic peers. This explained why Adrian received a C for final grade in this pre-algebra course. This setback however did not detour Adrian from the path set by his 5th grade teacher Mr. Watson, as he successfully completed both Algebra I and Honors Geometry with A's while still in middle school.

Honors Geometry provided a second opportunity to engage with an African American male teacher. Adrian was very excited about the possibility of revisiting the student-teacher relationship he experienced in 5th grade, especially after the 6th grade placement debacle and “the White lady” he had for Algebra I, whom he could not seem to remember much about. Although this 8th grade geometry teacher provided a better middle school math experience for Adrian, he was nothing like Mr. Watson. “He was really hard. He was actually the toughest teacher that I've ever had.” Adrian remembers this teacher only meeting with students for extra help after he was convinced that the student had independently tried their hardest. Although Adrian believed this teacher had no interest in building relationships with students, he acknowledged that he was a strong mathematician. “I think I learned the most in his class and I never failed a single math test after his Geometry class. I think it was because he taught us at a high school level

even though we were still in middle school,” accepting the compromise for the lack of social connections.

Honors Geometry, Honors Algebra II, and AP Calculus BC created the proudest moments for Adrian as a mathematics student. “Those are the classes that in the beginning I was struggling, and I thought I was going to get a bad grade. I had to buckle down and really learn the material,” speaking to how his internal motivation came from overcoming challenging situations. Adrian shared, “I was expecting very low grades, but I actually got pretty good ones, you know A's and B's in the courses so that made me proud,” with earning an A- in Honors Geometry being his proudest mathematical memory.

Honors Pre-Calculus, however, was a different experience and outcome for Adrian as it was the only C he received in a math class since the 6th grade scheduling debacle. Adrian and his mother believed that the teacher often graded him harshly and unfairly. “I would get all the questions right and she would take off points and be like oh you forgot the parentheses, or you didn't round your answer properly.” Adrian ended the semester as the only remaining African American student in the class, even though it did not begin this way. On day one the teacher, allegedly, went down a long list of topics that she felt were prerequisites for the course, strategically making the course seem impossible to pass. According to Adrian she was successful in her methods of intimidation as all the other Black and Hispanic students dropped the course after the first day. “But I was like naw, I understand this. I'm game. I can do this.” Once again, instead of taking an easier road, Adrian accepted the academic [mathematical] challenge.

Adrian's plan of action was to continue to do his best with an expectation that everything would fall into place. It was not until the final grades were revealed that Adrian concluded just how much this teacher despised the fact that her day-one plan did had failed to get him to quit along with all the other non-White and -Asian students.

I had a 79.9% in the class and she still gave me the C, so I was like wow. Other people in the class would text me and tell me that she rounded their grades up by like 2 or 3% and I wasn't even 1% away from a B and she wouldn't round mine up.

As a non-confrontational student, Adrian said nothing to the teacher or school administrators regarding this teacher's inappropriate behavior. He reported having to beg his mother not to "show out" at the school. "I was just glad that it was over. I didn't want to confront her about what I found out through other students." Although all his peers who dropped the honors course for the on level Precalculus class received A's, Adrian stood by his decision to stay the course. He didn't get the grade he felt he deserved, but without a doubt he believes that, despite her racial biases, this teacher came to understand his mathematical ability.

As Adrian continued to matriculate on this higher level mathematical pathway, his academic interaction with other students of color drastically and consistently declined. It became clearer to Adrian that the higher track – Honors – courses were strategically designed to advantage White and Asian students. "The weird thing about it is the White students were not as good in math and usually came to me for help." As a good student and all around good person, Adrian never hesitated to help a fellow classmate, a value

Mr. Watson taught him. “But I thought it was kind of messed up that the people that I was helping in these classes got better grades in the class than I did”.

Adrian also recalled very specific instances where he was the only African American student in the class and, perhaps because of this, mistreated by his classmates. He recalls that these same students, who he had previously demonstrated his ability to, still had trouble accepting him as an equal contributor to the classroom. Adrian remembers, during classwork, students asking him what he got as an answer to a particular question and then going to the “smart White kids” to verify if it was indeed correct, “as if because I'm Black I can't be smart, or I can't have the right answers. I really didn't want to follow that mode of being another angry Black person who likes to fight or curse people out so I just kind of kept to myself,” not willing to risk his opportunities for success.

A lot of the other Black students that may not have been in the honors classes was really fed up with a lot of the racism that was going on in the school and their way of handling it was to run up on them and they will just fight. The students in my class didn't get that from me so I guess they were less intimidated by me, so they kept doing what they were doing.

Adrian especially struggled when it was time for group projects. He remembered verbatim a specific incident while working on a research project in his AP English class:

They would text each other in the group about meeting up to work on the project on the weekend but they wouldn't text me or invite me to work with them. And then when I did submit work to them they would take credit for it and not give me the credit for doing my part. Everything that I wrote in the document the other

group members would delete or erase. I felt like it was unnecessary. So a lot of times when it came to projects I decided to work by myself. My mother used to ask why I had so much work to do and it was really because I had to do by myself what other students were doing with three and four other group members.

Adrian had a much better and much needed student-to-teacher relationship after the Precalculus class. His AP Calculus AB teacher was a Black female and “head of the math department.” He describes her as being “real cool and down-to-earth.” Adrian shared that she did an excellent job creating a classroom environment in which everyone felt valued and respected. “Everyone worked together, and everyone helped each other”, a familiar classroom climate for Adrian. According to Adrian, she gave students multiple opportunities to demonstrate their learning, extending her office hours as a time to earn extra credit. “She seemed like she was genuinely interested in us being successful and getting good grades.”

Adrian also felt less isolated in this class. Not only because his teacher was Black but also because there were five other Black students in the class, two males and three females.

It felt good to be around other people that looked like me. It was a good feeling because when I was in classes where I was the only Black student they [non-Black classmates] kind of looked at you like you don't belong here. But I know I belong here. I'm actually one of the smartest people in the class.

Adrian believes his school and schools around the world should do a better job at recruiting and supporting more minority students to participate in higher level mathematics and other classes. According to him, the recruitment of more minority

students into higher level courses was an intentional and personal effort of his AP Calculus teacher. She utilized her interactions with high performing minority students such as Adrian to tutor and recruit younger students of color. While he appreciated this, he recognized that this should be a school wide initiative instead of being up to individual teachers.

Although he did not pass the AP Calculus AB exam his junior year, the experience reignited Adrian's mathematical identity and prepared him for the AP Calculus BC course and exam, which he successfully passed. The perfect teacher according to Adrian's experience is one who has high mathematical content knowledge, holds students accountable to high standards, and possesses a general love for students. "I prefer a hard teacher that holds me to high expectations and prepares me, but also one who demonstrate that they care about me even outside of the math."

Chris's Narrative

I would rather be overwhelmed than under-stimulated, at any point.

-Chris

At the time of our interview Chris was months away from graduating from Morris High School and excited about entering the next phase of his life as a college student. Chris has always gravitated to the subject of science. He shared that "[science] aligns with the way that I view the world." He cited his passion for science as the rationale for his matriculation in the Bioscience Academy at his high school. Although Chris had not yet made his about which college to attend, he was clear that he would major in biology as an undergraduate student. He also shared his belief that the mathematics is applicable,

in some way, to every field of study. This was evident as he will complete his academic high school career having completed two AP Calculus courses.

Although Chris reported that his memories of elementary school are “kind of fuzzy,” he recalls feeling getting success out of doing elementary mathematics. “It's like a puzzle. It's not like, ‘Oh, I'm overjoyed to do math’ but there's a satisfaction when you solve a problem, like fixing a Rubik's Cube or something.” Chris remembered, playing cool math games and engaging learning experiences that required him to think critically as kid. He cited playing checkers with his dad as an example.

Chris's need for mathematical acceleration developed early in his academic career. “When I was in elementary school, they'd be like, ‘Oh, go to this class you're pretty good at math and you get the answers right.’” Chris recalled taking accelerated and enriched mathematics courses, each of which covered a year and half worth of content, from 4th through 7th grade. As he was granted access into the more advanced elementary mathematics groups and, as part of this, tracked into Algebra I in 7th grade and Honors Geometry in 8th, Chris realized his capacity for success. “As you're doing it, you realize you're capable of it. When it makes sense to you, if you're comprehending it, then you're gonna assume that you're good. So, I realize that I was capable.”

Middle school mathematics presented a slightly different experience for Chris. Although he was successful on many mathematical measures, and the satisfaction that came with that success was still present, Chris shared that it was not as fun for him and the teachers were not as engaging as they were in his earlier years of school. Prior to eighth grade, mathematics had come easy and was more engaging [than other subjects?]. However, in 8th grade, Chris received his first “bad grade” of a “C.”

Chris believes that his way of thinking and how he processes the language of mathematics is somewhat different from that of his peers and even some of his teachers, specifically his 8th grade Geometry teacher. “I view math in a different way, through a different lens. I always try to relate math and apply math directly to the real world. I look at an answer key or problem. Then I look at it step by step and figure out how the numbers are evolving throughout the problem. Then once I understand the process, I try to apply it myself.”

Chris reported that, once in high school, school mathematics got even more complicated, less exciting, and almost non relevant. The math just did not click as easy or as fast for him, requiring much more independent study and review outside of the classroom.

I have other interests now distracting me from math. Yeah, it's still there, but it's not like I'm planning to pursue anything that's math heavy. So you know how kids are. They're just like, ‘When are we ever gonna use this in real life?’ And I'm not really one of those people, but it's in the back of my head.

Complicated, less engaging, relevant or not, Chris maintained his academic standing in the study of mathematics as a self-motivated student. “Honestly, I would rather be overwhelmed than under-stimulated, at any point.” Understanding the value of teachers building supportive relationships with their students and how some students really need that level of attention, Chris did not see it as an influential factor to his success.

At the end of the day, I understand that the power is in my hands, even if they don't like me or I'm not their favorite. If I just push hard enough, then I know I'm gonna get the grade that I want or the grade that I deserve.

When asked to discuss teachers that have been most influential he immediately cited his Biology and Chemistry teachers. Probing a little further I learned that his math teachers were all simply “good enough” in his most humbled opinion. Therefore, when in a bind he preferred working through the problems alone, at his own pace, while utilizing his own process of thinking. Although Chris reported that he has not had the most impactful set of teachers to date, there is a group of people that he believes have helped to shape the man he is and is working hard to become to include mainly family members, along with his friends from his social clubs and sports teams, as well as some of his coaches.

Chris's immediate family consist of his two parents, an older sister who teaches middle school English in New York, and an older brother who passed away a few years back. “He was definitely one of my best friends at the time. I was really young. I was only like eight or nine, but like yeah, he was one of my best friends,” sharing details surrounding the unexpected death of his older brother.

Both college graduates, Chris's father manages a center for disabled adults while his mother serves as a family nurse practitioner. As a family that upholds the value of education they pushed Chris to do his absolute best, encouraging him to do better than before. “They're not really ever satisfied with what I produce. It's always like, ‘Oh, we want more, we know that you can do better’”. While some teenagers his age would feel

overwhelmed by these expectations, Chris shared his appreciation for parents that believed in his potential.

Chris views his dad as a role model whom he values and respects. ” I definitely look up to my father. I think that he's very hard working and he basically carries the family on his back.” Chris’s father has one requirement of him and that is for his absolute best. As a direct benefactor of his love and contributions to the family, Chris has accepted academic achievement as the currency to fulfill the debt he owes his father.

Chris believes that his participation in extracurricular activities had a direct and positive impact on his academic success. Chris’s natural athleticism makes him the prime candidate for starting positions on various sports teams. “I’m a varsity athlete. I play football. I wrestle. I run track.” Having very little experience with sports prior to high school, it was his passion for learning that motivated him to participate. “Well, this is something I don't know how to do. I wanna learn new skills while I'm in high school, so I just joined the teams”. He started as a running back and cornerback from his freshman through junior year before stopping to focus more on wrestling.

Wrestling, I'm the team captain. I just love wrestling. It's just you never know what to expect when you're going into a match. It requires a certain degree of adaptability. You have to be able to change on the spot and read your opponent.

It’s a mentally challenging sport. Track, I don't even really like to run, I just try to stay in shape.

He shared that coaches at the school added a high level of pressure on students’ academic success. Chris believes coaches motivation for ensuring academic student success is because “it doesn't reflect well on them,” relating poor grades with extracurricular

distractions. His coaches always pushed him and his teammates to stay on top of their school work by consistently and randomly checking their grades. This is especially true for his wrestling coach who is one of his other role models. Chris has a lot of respect for him and described him as a very wise guy. “So whenever he tells me to do something, it's as if I'm hearing it from my uncle or my father”.

Chris discussed his involvement in other co-curricular clubs and programs such as the National Society of Black Engineers (NSBE). According to their website, NSBE's mission is "to increase the number of culturally responsible Black Engineers who excel academically, succeed professionally and positively impact the community.” Chris joined NSBE with a group of his friends at his school. Although the school provided the space for the students to meet, the program is sponsored by GapBuster which a minority-founded educational organization is dedicated to empowering the community through education. Their mission is to promote higher levels of achievement leading to eradicating the achievement gap through enriched and supplemental learning opportunities.

Chris's team competes monthly in the Try-Math-A-Lon, and 1080 which is building robotic cars and driving them around. Chris believes that clubs such as NSBE promote a sense of community amongst the African American's at his school.

I think it's important just to know that there are people that know what you're going through. They can relate to you. If you're not in the same situation as somebody else, you can't really relate. You can understand, sort of, but you can't really relate. So it's good. It's nice to have people that I can actually relate to.

Chris considers himself to be a very social person who has many friends. He observed the fact that most of his closest friends are Black and are gained through his participation in athletics and co-curricular clubs. As he described it, they consistently motivate one another pushing each other to do their best. Unfortunately not many of these friends were as fortunate as Chris to gain access to this accelerated and enriched mathematical opportunities. For example, Chris stated that he is the only African American male on the school's math team. His take on why more students of color were not a part of the team boils down to a two part problem; Part one is society's stereotypical portrayal of academic success as "something that is undesirable" for students of color and the second problem are the "people that aren't outgoing enough to ignore that".

According to Chris, not all his academic peers were positive about and supportive of his being on the accelerated mathematics track. You're "acting White" is a term that has been ascribed to Chris in the past by some of his peers both Black and White. When faced with these encounters, Chris's response of choice is "Okay, whatever. I'm just gonna keep doing me" while using the negativity as a source of energy to continue pushing forward. "I'm not gonna get enraged. I'm not gonna feed into that. When I get that vibe off somebody, I don't associate with them. I ignore that." Chris's security in self did not allow the ignorance of others to sway him from his pathway of success.

Chris understands that being an African American means a lot of things to different people, "especially depending on where you are in America." For Chris, being Black "means pride," as he modeled the African beads he wore around his wrist during our initial interview. "It means family to me. It means my mother, my father, and my sister, my brother, my cousins." He has experienced and seen enough at the young age of

17 to understand that there are many in America who do not value the richness of culture, wisdom, and strength that African Americans possess.

Stereotypically, they view us as being less intelligent, sometimes aggressive.

They have less expectations for us. People look at me and they think that I'm some type of thug or something. You can tell they just don't wanna be friendly or interact or I don't even know how to explain it. But they just give you this certain energy, like this vibe, like, 'Oh, you're one of them. Yeah, you're that type of person'.

Fortunately, Chris attended diverse schools where minority students make up the majority of the population. This made Chris more comfortable in his higher level classes, feeling less isolated in environments where African American presence was scarce. "You receive exemplifications of that every day. Just walk into any classroom, like everybody's different colors. It's a spectrum" as he described most classes at his school. "I'm representing something right now. You know what I mean? I'm representing something bigger than myself, and I don't think I would like to have that pressure on me" speaking to the experience of African American males in classes as the only minority.

His number one recommendation was for schools in America to do a better job creating a "comfortable space" for African Americans, especially males, to access and achieve in higher level math courses. "Kids just always stressing how hard the class is, but, they [educators] don't really stress how doable it actually is. A lot of kids are just afraid to step out of their comfort zone". He advises other young African American males to continue to push past expectations.

You have that capability, why would you settle? Why would you not try to reach your own potential? Right now, just by staying where you are, just staying under that bar, you're promoting that stereotype right now. You can prove them wrong, just prove them wrong.

Eric's Narrative

I knew I had to continue in math and get better at it because I knew that was the area I wanted to go into as a profession. So I stayed on for the challenge because that's a part of my personality as well, I love to be challenged.

-Eric

At the time of the interview, Eric was a recent graduate of J. Borden High School. Through drawing on his inner strengths and support system, he had measured up to every academic challenge, without losing sight of who he was as a person. "So I guess being different was a really powerful part of my story when I was growing up and learning to accept that was a big part of who I am", explained 18 year old Eric. Even when he may not have wanted to press forward of his own volition, he would hear the charge from his parents to push pass all obstacles that stood between him and his goals for achievement. Navigating through racism, both in its systemic form as well as in its individualistic form from teachers and peers, is something that had unfortunately become a part of his success story. Needless to say he has not navigated this familiar place alone, but identifies with a group of people who have played influential parts in his discovery of power and success.

Eric was raised in a home that was academically strong and socially aware. "My father instilled in us that we had to work really hard in school in order to make what we wanted to happen happen." At the young age of 17, Eric's father moved from Trinidad to

Washington, D.C. to attend Howard University, a prominent historically Black university. Eric's father received a bachelor's degree in business and a master's in management information systems from George Washington University. Eric's father communicated to his sons his own struggles with engaging with American schooling, even at a predominantly Black institution. Although their schooling experiences were vastly different, as Eric attended predominantly all White schools his entire life, they both understood what it meant to be misunderstood in a school setting.

Eric's mother came to the United States from Kingston, Jamaica at the age of 7. He described his mother's physical appearance as "very light skinned", attributing her skin tone to the fact that his grandfather was Jamaican, and his maternal grandmother was multiracial. According to Eric, his maternal grandparents were not as supportive with his mother's academic plans as she was with his plans. She originally wanted to attend Syracuse University in New York and become a communication major. However, her parents would not allow their 17 year old daughter to move so far away, so she decided to attend Howard University which is where she met Eric's father. "I think my mom had a more difficult time in school, but I also think my mom and I are a lot alike. We're both pretty reserved and quiet." Years later she decided, that the academic and social development of her two sons, Eric and Mike, was the most important thing to her so she decided to become a stay at home mom.

Eric revered the relationship and support he received from his family with his mother standing out as the influential. "Knowing what she went through and how she helped us to read before we went to preschool, which is a huge thing, I can still appreciate today," speaking from a tender place of love and respect. Even more than her

academic support, Eric's mother made herself available to talk about and support him with anything he faced. "Again I think it goes back to her reserved personality and ability to listen where my dad was kind of the opposite. He was a lot louder. He didn't like to listen first but always wanted to talk first." Eric looked up to his father and grandfather who played soccer in Trinidad as well. "Since a kid I always wanted to be a soccer player. Now knowing what I kind of want to do in the industry I look up to young media stars like Issa Ray who allows more Blacks to create in Hollywood and have their voices heard."

Eric remembered going to the Howard University campus on a regular basis as a child. "I can even remember me and my brother playing tag on the quad at Howard University. And we grew up in that area off Georgia Avenue where Howard is located." However, in part because of that familiarity, Eric decided to attend George Washington University (GW) rather than follow his parents' footsteps at Howard University. He explained that, "wanted to experience another part of DC [and] also I felt like GW gave me a little more academic freedom and there was more majors and programs to choose from."

Eric's identification as a strong mathematical student began in elementary school. "Probably third grade they arranged us by color [race] based off of our ability." Like many other gifted and talented African American males, Eric was placed in the lower ability group even after demonstrating his capacity for enrichment, "but then after a few classes and practicing at home with my mother I was placed in the upper level group and I started to excel in math." It was this transition that helped Eric realize his special mathematical abilities. Based off earlier teaching from his parents, Eric learned to never

be satisfied with his current academic standing and to keep striving, explaining, “I did not associate myself as being good because I knew that there was always going to be better and that I always had to work towards being better myself.”

Eric went to Ousley Elementary School, a predominantly African American neighborhood school. “So growing up in an environment that was so diverse, I really didn’t have to think a lot about race as much as I probably should’ve.” It was at Hargrove Middle School where Eric began to experience racial and social segregation in neighborhood schools. “I had to adjust and try to navigate through two different worlds. This new one where there were two clearly defined social boundaries that I was not previously aware of”. These middle grades experiences taught Eric the difference between attending a predominantly Black school, located in a lower socioeconomic community, and attending a school serving predominantly White and upper middle class families.

When he enrolled into Hargrove Middle School he was immediately tasked with a school created mathematics placement assessment. “I took the test and I scored like two points away from going into the pre-algebra course, so they put me in the regular 6th grade math class.” Not satisfied with this outcome, Eric had his parents advocate for a retest. Eric did much better the second time around which granted him access to the accelerated mathematics pathway. Speaking of both the entrance exam as well as the opportunity to take Algebra I and Geometry before entering high school, he observed, “that’s how Hargrove works and operates but I don’t think that’s how all of the middle schools in the county function.” Getting placed at Hargrove through his school district lottery provided Eric greater opportunities for academic and career success.

Academically, Eric soared at Hargrove Middle School. Eric recalled, not only maintaining good grades, but having a healthy social life. However, he ran into an obstacle along the way in the form of a geometry teacher. “I don't think the content, or the material was different, I just think the way he taught the class didn't work out.” Eric described the teacher, a Black man from Kenya, as someone who had favorites in the class. In particular, Eric and the other African Americans in the class felt he gave them a harder time than some of their non-Black peers. “We had made it to that class for a reason and I felt like he didn't believe that we should have been there.” This teacher apparently assumed that Eric was not putting forth his best effort in the class, which was not what Eric recalled.

Eric did not recall experiencing any blatant racism during his time at Hargrove. That said, he shared an experience with racism outside of school.

There was this one time me and my brother was walking out of a Best Buy in a predominantly White neighborhood and there was a White lady walking also. As we got close to her she immediately just put her hands up and started screaming as if we were trying to attack her. That was a pretty startling experience and we told our parents about it.

After Hargrove Middle School, Eric enrolled into J. Borden High School. Eric described J. Borden as a diverse school with, “a lot of different races and people from every area in the county.” While at J. Borden, Eric engaged in a rigorous course load, including several AP courses. He entered high school taking Algebra II and Pre-Calculus before going in to AP Calculus AB his junior year of high school. AP Calculus proved to

be the “toughest” class he had taken and the lowest grade he had ever received in a math class.

I got a C+ in that class. Can't really blame the teacher for that even though I didn't really know what was supposed to be on the test or meshed with her teaching style. It's good to have encouraging teachers but they also need to be good teachers as well.

Although difficult in content, Eric clarified that his AP Calculus teacher made the experience bearable. The teacher was an African American woman who apparently fostered student success. “I don't think she was the best teacher but the class environment itself was pretty cool.” There were more minority students in this particular AP class than his experience in all his other AP classes, which was an intentional effort of the teacher who also served as the mathematics department lead.

Eric described being fortunate to have had “a lot of good teachers” during his high school years. His finance teacher, in particular, motivated him to go into the field of business. Impressed by his academic performance and level of respect, the teacher “took a liking” to him. “She was actually the best teacher that I ever had because again she got me interested in the topic and she was also very encouraging”.

AP Physics was another course where Eric had a great student-teacher relationship. Another African American woman, “she understood what I was going through and there was also other African American students in this class.” Eric spoke very highly of the experience that came with having African American teachers in higher level courses who could relate to the minority population in the class, “and not just in

classes like gym which is where you typically saw most of the African American teachers in the school.”

After taking the AP Calculus class, Eric decided to take AP Computer Science as his last high school mathematics credit bearing course. Although he had already fulfilled all mathematical course requirements his sophomore year, as a business major with a computer science focus he wanted to continue taken as many math courses as the school and his schedule allowed.

I knew I had to continue in math and get better at it because I knew that was the area I wanted to go into as a profession. So I stayed on for the challenge because that’s a part of my personality as well, I love to be challenged.

Eric described the AP Computer Science course as being a small class with a few peers from previous classes. It was not diverse, but predominantly White with Eric and one other Hispanic male who was a friend of his from middle school. “I was the only Black kid in the class. This was not different, but I did expect to see more representation from students of color.” The two friends engaged in their fair share of joking around but pushed each other to try harder and perform better. “I think having someone else in the class like me who understood the struggle of being a minority and segregated helped me get through the class as well as how to navigate through what it means to be Black or Hispanic in a predominantly White environment.” Eric was very proud of his academic performance in the class. He scored a passing score of a level 4 on the AP exam with only one student in the class coming ahead of him at a level 5.

Being the only African American student in the class was not an isolated experience for Eric as he remembered his experiences in courses such as AP Microeconomics, AP Chemistry, and AP Psychology. Speaking of AP Microeconomics,

It was interesting because at the end of the class I was noted as one of the smartest kids in the class, which I don't really feel I was, but I was different then what they expected from Black kids.

Mr. Smith, Eric's AP Chemistry teacher, was an older White male with high scientific content knowledge, who according to Eric, "was a little less comfortable with African American students." As the year went on Mr. Smith became more comfortable with him but was apparently was apprehensive when he saw a black male student initially enter his advanced placement class. When asked why his AP courses were not more reflective of the general school population, Eric concluded, "Black kids didn't want to take those classes because they would be the only Black kids in the class."

According to Eric, many of his non-Black peers didn't expect him to perform as well academically as he did. He recalled them being shocked when he did.

I think they expected me to do worse than them based off of their stereotype of African American males not being intelligent. Interestingly enough, in classes such as AP Physics, a lot of them came to me for help. Also my AP computer science class. I didn't really understand that, but I helped them anyway.

Eric was clear that having classmates that look like you and share some of the same social experiences is very important for African American students. "Whenever I did have an African-American student in my class I kind of stuck with them," appreciating the few times he felt a part of a cohort.

There was kind of a look that we gave each other whenever the teacher would say something that was funny or inconsiderate. There was this one time an English teacher asked a question to the whole class when we were covering Shakespeare. She asks the Black kids, “what do you think you would be doing during Shakespeare's time?” We were like ‘are you really asking us this question?’ and then gave each other ‘the look.’ There was an unspoken understanding that African-Americans had in these classes.

Not always recognizing it in the moment, Eric and many like him consistently had to prove their placement in higher level courses. As one of few African American students, Eric reported feeling isolated and lonely in the majority of his high school classes. “I wasn't really seen as someone that they [non-Black peers] could talk to because I didn't belong to their race or social group.” Eric also believed that many teachers could have done a better job creating an inclusive environment instead of assuming that “the Black kids are going to give you the most problems and be the most misbehaved in the class”. Although his high school included students of different races, ethnicities, and social classes, classes in the school were largely segregated by class, race, and ethnicity.

Eric made a strong effort to associate with people, minority students, who were in a similar situation and who understood some of the struggles that he went through. Most of his friends were Black with a few White friends he met from his AP courses and the track team. “Most of my friends were very motivated in school. They all wanted to do something productive with their lives and make an impact on the world.” When making friends, Eric gravitated towards people that had a common interest but were also different

enough to have an interesting friendship. “I did not have a core group of friends in elementary school mainly because I moved around a lot. I met a couple of friends in middle school and then picked up a few more in high school.” Eric describes his friends as a “very mixed group” with varied interests:

I had this one friend who worked for Microsoft while a sophomore. He definitely had the interest in the capacity to do well and programming but was not motivated to get good grades or take multiple AP courses. So instead of studying for classes and test a lot of them felt like ‘oh I can be doing other stuff outside of school like interning and programming, creating different things. Most of my friends were engineering majors, but I’m a business major.

Engaging in extracurricular activities such as track, and field helped Eric fulfill the sense of belonging that was absent from many of his classes. It also allowed him to engage with other African American students that were absent from his AP courses, “being a part of a team where I could interact with people that look like me was also good.” “I think it helped a lot because it taught me how to compete against other people and how to push myself beyond what I thought I could do.”

Eric recommends that schools and teachers do a better job creating a safe space for African American males in higher level math courses. As Eric noted, many of his African American male peers do not strive for the higher level courses for fear of being isolated from their African American peers. Therefore, to support African American students, teachers should provide additional emotional support without being “obvious or awkward.” He warns them to not teach based on stereotypes but to instead really get to know students and how they learn best. “A lot of African American males are naturally

good at math, they just think they are not based off the grades they get in classes.”

Therefore, Eric advises teachers to make the learning relevant and tie it to tangible outcomes such as potential career opportunities. He also advises other African American males to be brave enough to be themselves. “Don’t pay attention to what others have to say. Just be yourself!”

Greg’s Narrative

You should see my transcript, you should see everything I've done around the school. And for you to assume that I'm just you know, the average person, the average Black male you see in the media, the stereotype, I was hurt to be honest.

-Greg

When speaking with Greg, who was 18 years old at the time, it was clear that he has been surrounded by positive African American men who have exposed him to professional possibilities, while also helping him to develop a sense of pride as a Black man in America. “I grew up already knowing that I could be more than what society says I should be. It’s nothing wrong with it, but I knew I didn’t want to like sweep floors for a living or do hard labor you know. So that’s what motivated me to do well in school.”

Although Greg reported never having had an African American male teacher, his father helped to fill that gap. Greg’s father, an employee of the United States Federal Government and member of Omega Psi Phi Fraternity, Incorporated, made sure that Greg and his older brother were exposed to greatness from people who looked like them.

Greg recalled frequent times in his early life in which his father spoke directly to him about the importance of going to college. His father also inculcated this message implicitly through a consistent interaction with his fraternity brothers, a distinguished

group of college-educated, professional Black men. Greg observed how his father and his fraternity brothers dressed, the cars they drove, and the conversations they had. Through their example, he saw great potential for his own life. From this exposure to the fraternity practices, Greg has developed a heightened awareness of social constraints plaguing African American communities and the importance of giving back.

As a child, Greg attended Ivory Elementary School, located in a neighborhood surrounded by “poverty and violence”. Greg relayed that this created many “distractions” to school learning. Keeping in touch with a few of his elementary classmates from Ivory he was able to see firsthand how the environmental role impacted the academic, social, and emotional development of young people. “I know two people that went there with me and they are pregnant and we’re only 18. It shouldn’t be like that.”

Greg described most of the teachers at Ivory as caring, “they really get to know you, and you get the feeling that they want you to do well.” However, Greg recalled a specific 3rd grade teacher that had a reputation for being “rough with the boys.” Greg’s mother, who was a second grade teacher at the same school, would not have it for her son who was slated to go into his 3rd grade class the following year. However before that switch could happen, Greg was accepted into the school districts lottery system and afforded the opportunity to attend a higher performing school.

Greg described the new school as being as different as “night and day.” “I mean, it was, you know, in a better community, a more affluent African American community.” Transferring to this different elementary school exposed Greg to African American professionals outside of those in his immediate family and father’s fraternity brothers.

“My best friend's mom was a lawyer; his dad was a doctor. I had a real life example of the Cosby show.”

Coming from a school environment where certain distractors were a part of the culture, Greg had to adjust his expectations as well as negotiate learned behaviors in this new setting. “Everyone, I felt, were ahead of me and a lot smarter than me.” He explained feeling isolated and out of place a lot in the beginning, “The discussions they were having, they were taking Spanish. I have never taken Spanish and they were speaking in complete sentences. Speaking other languages and were only seven-eight years old.”

Greg remembered learning about Paul J. Borden and Marvin Gaye and their contributions to the music industry. Although he recalled hearing some of the songs around the house and in the car with his parents, he had not previously been exposed to their history and backgrounds. Greg remembered a time in class when the teacher asked a question. Brave Greg raised his hand and provided an answer with great confidence. His response to the teacher's question was followed by resounding laughter from his peers, communicating to him that his answer was obviously incorrect. This seemingly embarrassing moment in his young life served as the turning point for Greg. “I was like you know what I have nothing else to lose, so I focused on myself, made some new friends, and everything else just fell in place.”

Although the families of the second elementary school were middle class and affluent, they were majority Black. This was not the case for his middle school which was even more affluent and predominantly White. Greg's mother understood the racial and economic tension that her child would likely face at this school as she sat down and had “the talk” prior to his first day. She explained to him, “These people might be a little

racist, you know, so keep your guard up.” Looking back on this conversation, Greg believed that his mother’s advice was somewhat “short sighted” but understood that she had his “best interest’ at heart. The current racial state of America makes conversations like these more and more relevant for parents, especially those of Black sons (Coates, 2015).

Heeding to his mother’s warning Greg did not mix very well with many of his peers at his middle school. The first week of school Greg was in a class with many students from his elementary school, students who looked like him. However, after the school administered testing Greg was moved to the higher math class which was predominantly White. Remembering the warning from his mother, Greg entered the class with his guards up. “I wasn’t tryna put my best foot forward. You know when you have your guard up you’re not ready to learn. You’re so focused on other things like how they see you”. One of his friends from elementary, Adrian, was also accepted to the program and they stuck together as they navigated this new environment.

Being isolated from majority of his peers who looked like him produced other obstacles that Greg had to overcome during his transition. He was put in a place where he was too Black for the White Kids and “acting White” according to the other Black kids.

They had this thing they would call you Oreo if you talked a certain way or acted a certain way. So I would do things to distance myself from that narrative. I would do things that, you know, just didn’t align with myself.

Greg struggled to understand why his “own” would turn on him. “I love my Black community. I want to work to help better our community and to have people from the community call me Oreo or say I’m talking White infuriated me”. The turning point in Greg's social development came from watching his Dad. “He’s a 6’4 Black guy who

wears country hats and loves country music”. This example of freedom from other people's perception was all Greg needed to motivate him to remain true to himself. “I realized I should just be myself. If I get called Oreo, so what. If I get called White, so what”.

Building relationships in this new environment proved to go beyond Greg’s peers and included many of his teacher. He felt that the teachers didn’t attempt to build authentic relationships with their students, at least not with him or those that looked like him. Although they were willing to stay after school and during lunch to support, he didn’t get the feeling that they wanted him to succeed. “I was just another student in their midst or whatever. There were some teachers that cared but the majority, I just felt there was a disconnect”. Greg shared an experience with a teacher, White male, who thought he was reaching his African American students by using Ebonics and exuding every racial stereotype known to man.

You could tell that wasn't the way he was. He was just doing that, you know, because that was a reflection of what he thought he saw in the classroom. It wasn't authentic. I really didn't like him. And me not liking him made me not want to do well in that class. My mind just shuts off when I don't like the person teaching the class.

Despite the lack of support from his peers and teachers in many cases, Greg successfully completed Algebra I and Honors Geometry before entering J. Borden High School. “Coming from Hargrove I was kind of comfortable with myself. I was you know, I was confident academically, I met some friends. I feel they respected my abilities”,

referring to his academic peers at J. Borden High School. J. Borden was a more diverse school environment, but the community shared the same culture and climate as Hargrove.

Most of them I knew from middle school so I kind of got to know them through classes a little bit. There were some people who were new to the school that weren't really comfortable, you know working with me in a group or sharing with me their homework because they thought I was going to cheat.

According to Greg, the teachers at J. Borden really cared and had the student's best interest at heart providing a greater learning experience. The first three years at J. Borden High School, Greg had the same math teacher, Mr. Daniels. "I loved my teacher. I think he's one of the best teachers I've ever had" enthusiastically talking about Mr. Daniels. Greg was enrolled in his Algebra II course ninth grade, Pre-Calculus tenth grade, and then AP Calculus AB his junior year. Greg remembered him staying as late as 7pm to help him and other classmates that needed smaller group instruction and support. Mr. Daniels had a way of using real world examples to bridge the gap of teaching and learning for his student. He was also bilingual which came in handy when working with his Hispanic students.

Mr. Daniels had to invest a lot of time and attention to really get to know his students to accomplish such a tall order. He went out of his way to meet the needs of his students mathematically, socially, and emotionally. According to Greg,

He checked on me you know when my uncle passed away my 10th grade year.

He made sure I was ok and didn't want me to rush back into math because he said that was not what was most important.

Greg and a couple friends worked on a documentary during their senior year about teachers in the county and Mr. Daniels went out of his way to help and make sure they had everything they needed. According to Greg, Mr. Daniels left the county because he did not like the direction senior leadership was heading in.

Although Mr. Daniels was a great Math teacher who developed personal positive relationships with his students he never lowered expectations for students mastering the content. Greg remembered struggling in Mr. Daniels' AP Calculus class. The content of the course was very challenging for Greg. However, he admits that he could have worked harder and been a little more consistent in the class, better prioritizing his extracurricular and social life. "I had him for three years and I've done well in his classes in past years, I don't know what it was about AP Calc". Greg was also enrolled in AP Physics at the same time possibly adding more stress to his already rigorous academic life, "so maybe that had something to do with it. Maybe it was just overwhelming. It really wasn't my best year".

Greg's junior year in high school is where he began to focus more explicitly on his college and career goals, consistently questioning the relevance of course content which impacted his level of performance. "Again it wasn't relevant to me", speaking about his AP Physics class that he struggled through as well, "I didn't see how learning about all these concepts were benefitting my life". He did however do better in the AP Physics class than he did in the AP Calculus class. He attributes this success to the collaboration with the one other Black male in the class. "We kind of, you know, did work together to kind of make sure that we were both on the same page and we kind of had a bearing on what was going on in the class".

Greg made the decision to take a regular statistic course during his senior year of high school, against Mr. Daniel's recommendation to at least take AP Statistics. According to Greg there was no need for him to take AP Calculus BC or even AP Statistics because at this point he was sure that he was not going into a STEM field in college. The decision was made even easier when he realized that Mr. Daniels was not teaching either of the courses. "I was like no, I need to take regular Stats and get this easy A".

This was also the time where Greg decided he wanted a career in politics. The "polarization in America" brought on by the 2016 election sealed the deal for him. "It kind of motivated me to want to change things. I mean I still want to make money but if that means me making half of what I'd make in another profession then so be it". The relevance to his career aspirations is why he believes he received an A in AP Government. "I wanted to do well. I think I want to put forth the effort because I knew it was tied to something outside of the school" was the reason Greg studied harder, went to his teacher's office hours, and worked exhaustively on class presentations for this course, even though this same teacher publicly announced to the class his disbelief that Greg, the only African American in the class, could earn the only 100% on a pretest the first day of class. "I thought it was funny that he didn't think or that he was shocked that I was smart".

Unfortunately this was not an isolated experience where an educator at J. Borden had lowered expectations of Greg. With a firm understanding of his professional trajectory, senior year Greg was eager to begin submitting college applications. He had taken the SAT the prior year and was scheduled to retake the assessment within the

following month but went ahead and began the application process to the list of schools he came up with no support from his senior counselor. “She didn’t even put forth the extra effort to look up my records or ask me questions” was the experience Greg remembered as he submitted his first round of applications.

After his second set of scores, much higher than the first, came in Greg received a request to meet with his counselor. “Greg you’re smart! I didn’t know you were smart. Wow let me get you some more schools let me make sure you get into the best schools possible” was her reaction when he entered the guidance suite. Greg was very taken aback by the original assumption that he was not smart, even though this counselor had access to his rigorous academic profile that records his successful access and achievement in advance courses. What he wanted to say to her in that moment was “You should see my transcript, you should see everything I’ve done around the school. And for you to assume that I’m just you know, the average person the average Black male you see in the media, the stereotype, I was hurt to be honest”, however his non-confrontational self could not bring the words close enough to his lips.

As our time came to an end, I asked him to communicate any advice he had for younger African American males and those that teach them and for both he responded, “just be yourself”. He cautions students from trying to fit in with the crowd at the expense of their morals and beliefs. “Although the perception of teachers is important, developing your own identity and goals should always be the main priority”. More specifically for teachers, “Don’t limit us or our mental capacity for what we can attain academically. Make things relevant to students and make sure that you take time out to see if everything’s okay at home. Make sure that we are all healthy emotionally and

mentally.” Lastly, Greg believes teachers should be more respectful to their students, leading by example. Greg encountered teachers who gave off a superior impression and demanded more respect than they were willing to offer. And although they have degrees and have accomplished much more than the students they serve his final words included “at the end of the day were all human beings and I want to be treated as one”.

Javian’s Narrative

“The people I'm around usually, so my classmates, my parents, my teachers, they make sure that even if I don't feel like it, they're like, you can do it and you should”.

-Javian

Strong positive relationships were very important to the development of Javian’s academic success. The most influential relationship is attributed to the love and support provided by his parents. Javian’s mother is an LPN nurse while his father works for a subcontracted transportation company through the federal government. “They're both very loving people. They care for me a lot. And they're always very serious about my education”. As an only child, Javian parents have always been available to support him, especially in his academics.

According to Javian, his parents are his role models and the most influential to his academic success. Beaming with pride he shared, “My mother is always there, my father too but, because I'm with her for the most part she's the one who encourages, pushes me to go a little bit further, just convinces me to just keep going, especially when I don't want to, but I should”. Javian’s father cares for his only son but is much more succinct with his expectations, applying more of a "You know what to do, so just do it” approach. According to Javian, his mother was much more hands on in her approach. Even during

the summer month, Javian's mother made sure his academic stamina did not waver. While he wanted to relax and have fun all summer his mother had a different plan in mind and in action, for as long as he could remember. "I would always be trying to get out of doing these activity books. My mom would give me math problems, whether it be multiplication, fractions, anything. She would be like 'Do these pages' by a certain hour". Javian now a junior at a magnet high school, taking AP Calculus BC, appreciates the rigorous summer sessions employed by his mother.

Javian's relationship with his friends also played an important role in his academic success. "They keep me sane", Javian explains. "My friends, they're nice, they're fun. In terms of education, if I need help from them and I ask them, they'll help me out. And if they ask me, I'll try to help them out". Boasting with confidence, Javian admits that he helps them more than he requires their help. Outside of the school setting Javian and his friends try not to focus on academics and just enjoy their lives as teenagers.

Javian holds his friends near and dear to his heart as making friends has never been easy for him as he freely admits "I was an awkward kid". Always outgoing, he was never a kid that kept to himself. However, as an only child he struggled with age appropriate social cues, "not having a sibling sometimes didn't help me socially, especially in the beginning, just like how to deal with others. I always tried to be part of something, but sometimes people wouldn't appreciate that, which is fine", explaining being viewed as the socially awkward kid from his classmates in elementary and parts of middle school.

By the end of middle school however, Javian had blossomed into a social butterfly. “Eighth grade was my favorite year. I just tried to involve myself with more people I would say, and I enjoyed it. I know that for sure”. By his freshman year in high school he joined the drama production club meeting at least once a week whenever they were producing. During his sophomore year he joined the school’s magazine publication as a layout designer and was promoted the following year as the layout editor. “I think the extracurricular activities give me a release from my academics” as he explained being a part of the various clubs and programs at his school and meeting likeminded individuals to share his very limited free time.

Another positive relationship that inspired his academic success was through a social club called “Difference Makers” which focused on various needs and issues within the community. He joined this club in middle school as it was led by his favorite and most influential teacher, Mr. Kindell. “My seventh grade science teacher, my biology teacher, Mr. Kindell was really kind, a nice guy. Someone I would aspire to be like”. Javian continued by explaining Mr. Kindell’s patience and kindness towards others.

Javian had not met a teacher he did not like but described a bad teacher as someone who is mean and unfair. Many of his friends and classmates, however, have very different experiences. “As a student, you won’t love your teachers, but you become more comfortable with them, and try. If you need help, you know they're there”. Javian communicated the importance of teachers knowing their students and for students to know their teachers as well. According to Javian, understanding each other’s strengths and weaknesses helps everyone navigate how to best work together.

Javian's relationship with God also has a huge impact on his academic and personal success. He shared "I know some days are just, some days I just feel moody, and I just need something to help bring me back up. God always helps me with that". As a magnet student with a heavy academic load while trying to remain active in clubs and extracurricular, Javian learned quickly the importance of peace, balance, and calm spaces.

Javian has consistently been an academically gifted student. As early as elementary school he began to stand out in comparison to his peers in every subject, especially math and science. "It wasn't like they were really far off, but I just know for sure that, whenever we would have math block, I think they would divide us up into groups based on your math level. I know generally I would be with the group who just did better". As a kid, Javian did not have access to technology in the home, so most of his time was spent reading. Whenever he expressed to his parents his boredom they would respond in a manner like "Just read because you got nothing else". Even over the summer he remembers developing a love for completing various activity books.

Javian's neighborhood elementary school was actually a center for highly gifted students. He attended this district school beginning in Pre-Kindergarten, although he did not enter the gifted and talented (GT) program until 4th grade. This identification and transition occurred after his mother requested an evaluation of her academically talented son the previous year.

Even after being accepted into the GT program, students were fully aware of their academic standing in comparison to one another as they were mathematically divided into the blue and green teams. "The green team was the slightly lower one and I was on

the green team fourth grade. I was on the blue team the next year”. Luckily, Javian’s nonchalant attitude for what others thought of him had already kicked in and he did not care what others perceptions of him was. Even when he accelerated to the blue team it wasn’t a big celebratory time, “I don't believe I had a feeling about it. I just did the math, as best I could”.

Although he entered the GT program during his elementary years he still had to apply and wait for acceptance to the various magnet programs that his school district offered for middle school. Each specialty school had a different instructional model and focus. Javian decided to apply to the math and computer science magnet school, which he was accepted into. “I’d like to say I’m good at math, good enough as it is. And then, I liked science as well”, speaking to why that was the only school application he submitted.

Transitioning from his neighborhood elementary school to the magnet middle school across town was somewhat of a challenge for Javian. “The people I’d gotten used to, whether I liked them or not, were not there. And so, getting thrust into this new environment wasn’t more difficult, but it just took some time for me to get used to the people I was with”. Javian, fully aware of his “social awkwardness”, needed some time to effectively navigate this new environment but eventually settled in and actually begin to enjoy his schooling experience.

His high school entrance experience was slightly different. He applied and was also accepted to magnet program at Taylor High School. However this time half of his 8th grade class also enrolled. “So, from the get-go, I already had a good amount of people I already knew”. In addition to the students who traveled from the middle school to the

high school with him, Javian, now a social butterfly, met some new friends as well describing them simply as “really nice people”.

Despite the easier social transition, Javian still identified his freshmen year as “a doozy”. “I was still in the mindset of middle school. I was just playing around a little bit too much, but as the semester went on, it became easier”, speaking to the balance of academics and socialization. The high school magnet courses were much more rigorous than those on the middle school level. The level of expectation from the high school teachers was a culture shock for Javian and many of his classmates. When he did not understand a concept he would ask either the teacher or other students for additional support. Luckily for Javian, “People are willing to be there for you, as long as you put in the work yourself as well”.

Javian successfully complete Algebra I, Honors Geometry, and Honors Algebra II at his magnet middle school. Therefore, he entered Taylor High School enrolled in a magnet pre-calculus class. The high level of course intensity required a lot from Javian. ” Sleep is something I've sacrificed, in a way. I would say energy, just time and energy just to understand it all”. This spoke directly to the requirement that magnet students at his school were required to take an extra 45 minute class per day in addition to the traditional instructional day. With travel and extra commitments, Javian’s academic day started much earlier and ended much later than that of his academic peers outside of the magnet program.

Last year when he took AP Calculus AB Javian struggled. According to him it was not because the content was that much more rigorous, but mainly because he and the teacher just did not mesh well socially. This required even more time outside of the

classroom for independent and group studying during lunch, after school, and late nights. As difficult as it was, Javian did what he needed to do to maintain his academic standing and high grade point average.

Throughout his academic career Javian has gained access to many academically rigorous programs but at the cost of engaging with students that looked like him, African American males to be more specific. “There could be more people, there should be, and shouldn’t just be me as a Black male, like the only one here. My thoughts are that’s complete bull. Math has nothing to do with your race”. At his elementary school, predominantly Black and Hispanic students, he recalled seeing only three other African American males once he entered the GT program. “In middle school, it was only two Black males and one of them was from my elementary school”. And now at his high school, with 24% of the 3,083 students representing African Americans, Javian, the only African American male, and two African American females were isolated in their magnet cohort of over 100 students.

One reason Javian attributes this lack of diversity in such a diverse school and district is for a lack of knowledge and exposure. Javian believes the district should do a better job engaging underrepresented communities and providing the information to families as early as possible, kindergarten to be more specific. Javian emphasized the importance of early academic access and programming outside of the school setting. Understanding that more affluent parents have access that others do not, as a recommendation to the district, Javian vouches for more academic enrichment programs in underrepresented communities.

I think it's mostly your early years as a kid, your development. The time where your brain changes the most and is able to receive most information. I think, maybe, I'm not sure as I'm not White or Asian, but perhaps I know some of my friends, they've done a lot of math courses like Kumon and other things when they are younger and still to this day they do that with their parents. Like I said, my parents made sure I was doing math in some capacity or just using my brain reading, stuff like that.

Javian also cautioned schools and districts who are moving to a protocol where they are evaluating all students to not simply put kids into these academically enriched environments if they [students] do not understand the work load or are not adequately prepared to achieve. At the same time, Javian mentioned that schools should hire teachers that are willing to help when needed and not discourage students from trying something different or more challenging.

To younger African American males, Javian offers this advice:

Always try your best, even if you don't feel like it, even if you feel like it's not gonna help you later on, just do your best no matter what. Maybe it will, maybe it won't. And if it doesn't always pan out the way you want it, that's fine. Life is never like that in the first place. And always ask for help if you need it. But if you're not always accepted, if help doesn't always come, try a different avenue.

Nick's Narrative

Alright, I have to do well because I'm Black and the odds are stacked against me. It has nothing to do with the school per se, I think just like society's view on Black people. Now that I've been in high school and I'm getting older, the news is

frequently reminding us why we're lower than other classes or other races or why certain things happen to us.

-Nick

As the youngest participant involved in the study, 16 year old Nick has seen and experienced enough to know that, as an African American male, the odds are “stacked against” him and those who look like him. Nick was a junior at Brown High School, enrolled in AP Calculus AB at the time of our initial meeting. Upon first meeting him, it was clear to me that, Nick possessed a huge personality, a high degree of confidence and pride. Nick made it clear to me that he was self-motivated to live up to the very high standards he had set for himself. Nick expressed that, even during his lowest days, he was reminded of his father who consistently challenged him to be better than he was at his age. In addition to supportive family and friends, Nick cited “awesome” teachers who have been instrumental to his academic success.

Nick comes from a family that understands and values academic attainment for social and financial freedom. Both of his parents are natives of Haiti. Nick reported that they ensured that Haitian culture was consistently practiced in the home and remained at the heart of their core beliefs. Nick’s father received his education in Haiti, including four years of college, while his mother attended grade school in Boston before obtaining a law degree from George Washington University. Nick communicated that his father had not physically resided in the family’s home since Nick was in the third grade. Speaking to the obligations that required his father to live abroad to better support the family, “my father works for the Haitian embassy and they transferred his duty back to Haiti.”

Nick explained how he never allowed his father's physical absence to impact his educational access and achievement. He understands that many of the other Black kids at his school have fathers who are also absent from the home and clearly sees how their absences affects them negatively. However, Nick spoke with great enthusiasm as he talked about the relationship that he shares with father, whom he considers a role model:

My dad, he got a full education, he's a smart man, very well disciplined. The way he is disciplined is not the same like here [America]. He knows what he's supposed to do, he makes sure he has his priorities straight and he makes certain sacrifices that normally you wouldn't see other people do here [America] to make sure that me and my mother and my sister have a good foundation over here [America]. Me and my dad are always competing. Who's faster? Who's taller? Who's better at soccer? Who's better looking? Obviously, me! Who dresses better? We're always competing. So, I've always held myself at a high standard. Not just with my dad, but everybody. I always wanna be dominant than others.

Nick described his mother as being very present and involved in his schooling. Like many teenage boys, Nick explains/explained that he's got a bit of an attitude, sometimes talking under his breath, rolling his eyes, or a chipping his teeth. Even with his typical teenage expressions, he believes that he intentionally did/does not present any major headaches for his mother. Nick shared that he was very grateful for the sacrifices that his parents consistently made to provide him and his sister with greater opportunities for long term success, doing their part to keep stress levels down.

Nick noticed his success in mathematics very early in his academic career. Reflecting on his elementary years, he recalled being aware that he would finish his work

a lot faster than other students and, as a result, would have to do “extra work”. Nick further explained that, when he would finish his class work before other students, he would naturally begin to talk to his peers. His teachers initially saw this as him being off task and disruptive, even though he had completed, with fidelity, all the academic tasks assigned to him.

It's not like I was a bad kid, but I liked to talk a lot. Me and my friends, it would just be constant conversation. We'd be doing our work, wave and make faces at each other. I was always giggling and talking. The main concern was that I wasn't doing what I was supposed to and instead I was just talking too much. And so it got to the point to where like my parents would have to come to my class and talk to me.

Although it took some time for his teachers to place him in an appropriate academic track, Nick to enter an enriched and accelerated mathematics pathway in the upper elementary grades. He stated, “I mean, I can't say that I knew I was super smart at math, but I started realizing that, ‘Okay, I think I'm actually pretty good at math.’ And then I just continued on, and then, here I am now.” After being identified as gifted and talented, Nick entered compacted math classes in the 4th and 5th grade. The first of these compacted courses essentially combined all 4th grade and half of 5th grade content into a single year and the second compacted 5th and 6th grade content the following year.

Nick continued on this accelerated track through middle school. He accessed Algebra I in 7th grade with a cohort of other high performing mathematics students. This was the course that Nick fell in love with as he believes his “mathematical mind responds very algebraically.” Nick, however, struggled a bit as an eighth grader in Honors

Geometry. After earning a D the first quarter, his mom was not pleased and immediately begin to look for additional resources for support. The first stop was Khan Academy. Khan Academy, a free online instructional resource, offers practice exercises, instructional videos, and a personalized learning dashboard that empower learners to study at their own pace in and outside of the classroom, using state-of-the-art, and adaptive technology that identifies strengths and learning gaps. Khan Academy proved to be simply not enough of a mathematical intervention for Nick. By his next report card, Nick's grade went up from a D to a C which still was not reaching the standard for a student who had demonstrated such great success in mathematics.

Nick's mother, looking for additional opportunities, joined a listserv of parents from the school and surrounding community. Nick explained it as "mostly moms sending each other information about what's going on". Through other parent recommendations, Nick was enrolled, and has been for the past three years, in Mathnasium which he attends a couple days a week. Mathnasium is a local math-only learning center that teaches kids math the way it makes sense to them, utilizing experienced math tutors and proprietary teaching materials and techniques to deliver a customized learning plan designed to address each student's needs in a way that builds a love for math. Through his continued participation in Mathnasium Nick was able to pull his Honors Geometry grade up to a place that he was comfortable with.

As a freshman in high school, Nick enrolled in Honors Algebra II, the course that school districts use to measure college and career readiness. Although Nick made an exceptional come back in Honors Geometry the previous year, he shared that he entered high school feeling underprepared for the level of rigor that came with the course

pathway he had previously demonstrated high levels of success. Speaking of his experience in his first AP Calculus course, Nick shared “All this stuff that we'd learned in the past, I didn't remember all of it. And it's not like the teacher, but it's like all of it is being thrown at you at once and you're supposed to remember these things day in and day out.” Nick’s schedule at the time of the interview included three Advanced Placement courses, AP Calculus, AP Language, and AP World Studies.

As a student in the Academy of Finance, Business Management and Marketing at Brown High School, Nick stated that he had to mature very quickly if he wanted to maintain his academic standing.

I realized that, of course, maturity is also one thing I had to work on. I used to laugh at everything. Like health class, they'd say ‘penis,’ [and] I'd laugh. So, I knew I couldn't bring that into high school, and that's one thing I worked on over the summer, coming in here, just making sure I'm not one of those class clowns, like the kid that the teacher always has to say, "Oh, he's here." You know what I'm saying?

Nick revealed that the first year of high school opened his eyes to see how little effort was required to self-destruct and deviate from a pathway to success. He quickly realized that he was left on an academic island alone, as none of his friends were enrolled in the higher sequence of courses. There are two African American female students currently in Nick’s AP Calculus class and as he puts it, they are “making their way through the class”. Although the trio may not be where they want to be grade wise, they remain confident in who they are and what they can achieve. “But I know I'm smart at

math, I know they're smart at math, and I know everybody in that class is smart at math. And I don't think it's an Asian or White thing.”

Nick loves his Haitian culture and is not afraid to share it. “I don't know, it's just like everything to me. I love everything about Haiti. It might look ruined cause of the 2010 earthquake, or you might see a bunch of trash; but it's a really beautiful place”. When asked about the most influential teacher he has encountered he identified his current assistant principal Mrs. Lily. “There was this one day she called me in her office because I was about to get into a fight”. When they got one on one in her office Nick shared that the first thing she said to him was "So, I heard you're Haitian. She's Haitian too!" Beaming with pride, Nick further explained how Mrs. Lily started speaking French to him and how that made him feel. “Having someone that knows where you're from and knows about your background is very comforting. So I was like, ‘Alright, I can open myself up to her.’”

Evidently, the positive teacher relationships that Nick established throughout the years were monumental to his academic success as he named them as one of the most influential factors for supporting African American adolescent males in school. According to Nick, there is a great need for students to have teachers that they can talk to, using Mrs. Lily again as a perfect example. Nick admits that he was unsuccessful at building a strong connection with the majority of his teachers, but there are certain teachers that he has encountered that has made him feel comfortable enough to say “Okay. I like this teacher, if I needed something, I can talk to them”. Nick has a running list of teachers that have invested time in him that he will use for college

recommendations, “not only talking about academics, but they can dive into my character and my personality, hopefully adding to the recommendation.”

In addition to Mrs. Lily, Nick shared his appreciation for his 10th grade US Government teacher Ms. Mary. Although their relationship started off rocky and the class was extremely challenging for him, he grew great respect for her because as Nick puts it, “she keeps it real”. Nick also bragged about her wisdom and strength in all content areas not just the humanities. “She’s really smart and tells you what you need to do and she doesn't only help you in Government. She'll give you help in Chemistry, Calculus, math, like everything.” According to Nick, Ms. Mary’s toolkit extended beyond academics as she made herself available to her student who needed to talk about school or life.

She's always someone you can go to if you just need to talk about anything or you wanna look at your grades. She'll look out for you too. For me, she always talks to me and says, ‘Nick, I hear chemistry is not going well for you, if you need help you know where to find me!’ She always offers her services to me or in general to any student, so I feel like I can talk to her.

During our time together, Nick spent a great deal of time talking about the experiences he has had with some of his African American male teachers in the past, mostly on the middle school level. He explained the interesting dynamic that he had with his French teacher Mr. Watson. Nick concluded that he would “tell you like it is” and was very hard on him. The two of them would always go back and forth, toe to toe with each other. “It was almost like talking to my dad” Nick realized. Although he felt Mr. Watson nagged a lot, Nick perceived it as caring and agreed that he provided useful and relevant advice.

Mr. Bunche, 8th grade Science teacher, was much calmer than Mr. Watson, also serving as a mentor to Nick during his time in middle school. Investing extra time to communicate to Nick about making better decisions and how to improve himself as a person. After a small confrontation with a peer and being suspended for the first time, Mr. Bunche made sure he was there to help navigate this new experience with Nick. Although he could not recall the altercation with the other student he vividly remembers how Mr. Bunche made him feel.

Nick is not an advocate for just any type of teacher relationships, but emphasizes honest and caring relationships. Nick's recommendation to teachers is simple, "keep it real". "They all do their jobs, they know what they're supposed to do, they know how to prepare us for the future. And yeah, I think it's just keeping it real". Nick has experienced many teachers who, in his opinion, likes to "sugarcoat" the real world, overlooking real life hardships or making excuse for students that may not have luxuries

Although he values the relationships built with teachers and understands their contribution to his success, Nick proclaimed to be a self-made and self-motivated individual that wants everyone to see and experience their own greatness and be bold about it.

I think it's just me. There are a bunch of little things that have helped me move forward, but at the end of the day it's all up to me. I know what I need to do. I know I'm great. I know I'm a good guy. And I know what I can be. And so I think with those motivations and the knowledge of who I am are big factors in who I will be.

Despite his rigorous course trajectory, Nick never allowed his academic goals to hinder his experience as a thriving adolescent male. The last three years of high school have provided space and opportunity for him to adjust socially as well as academically. In his free time, during lunch, and in PE Nick communicated his love for basketball and soccer. Although he's never played an organized sport for the school, Nick looks forward to spring to get back on the field with some his closest friends and competitors. He also has a job as a lifeguard where he's trying to add an extra Monday shift to his current Wednesday and Friday work week, to keep busy and decrease destructive distractions.

Things that I wouldn't have realized in middle school, I realize now. And also when it comes to my decision making, not only with friends, but just certain aspects of life, like going somewhere I've also improved on. I don't know. It's just been a great learning experience, both academically and life wise.

One would think with Nick's academic workload, extracurricular activities, and after school part time work that he would have no social life, which is quite the opposite for a person with such a robust personality.

So, I have a lot of friends. Well, I can't say a lot, but yeah, I kind of have a lot.

The majority of them are girls and without them I would actually be lost. I had a crush on Nikita and then I started hanging out with her and then she introduced me to the rest of them, and I just started hanging out with all of them.

Without any shame, he admits that he became friends with the circle of young ladies after "shooting his shot" and missing with Nikita.

Not only has he mastered the language of mathematics, but at a very young age Nick has obviously learned the art that is the female. In the spring of his sophomore year,

Nick distanced himself from the group of girls. After establishing a collective arrangement of eating lunch together daily, Nick ditched the midday debrief to play basketball with some of his fellow male peers. "I fixed that this year. I made sure I'm giving them the attention and stuff that they deserve". After a stern confrontation, the group is back in alignment with the "agreed" lunch arrangement.

Nick also had a few guy friends but admitted that he did not trust them as much as he trusted his female friends. "A lot of them are hot heads and into themselves." One friend was like a brother to him. Nick has known Robert since they were in elementary school. "He's chill. He's not like most of the boys that I know. He's taking a lot of honors courses, but again, he's a smart kid, he's not dumb." However, he shared that none of his friends, male or female, are enrolled in his current AP classes.

As a junior in high school, Nick was fully aware of the importance of the academic school year. Early in the fall, he began attending various college fairs in the area, researching scholarships, tuition rates, enrollment requirements such as GPA and course enrollment. Nick communicated a clear plan for achieving academic success beyond high school that will lead to a lucrative career which is stated as the ultimate purpose. He has big dreams of entering the field of mass communication and media specifically in the genre of pop culture. According to Nick, "I think I'm pretty funny, and I know how to entertain people. I know how to shift moods and make people feel a certain way, so I think I have that ability to really be great in this field". He used his dream job and making his family proud as incentives that motivated him to do well academically. "I know I have a bunch of things I need to accomplish and that I want to

accomplish myself. And then also I just want to make my family proud. I think that's every child's dream.”

As Nick narrows down his college options, the most important characteristic for him is diversity. “I don't wanna go to a campus and I'm like the 1% Black”. Although Nick attended diverse schools, he knows how it feels to be the only African American student in many of his honors and advanced placement classes.

I've been one of the only Black people in my class and they'll bring up certain topics and just look at me and expect me to have the answer because it's related to African-Americans. So I don't want to be in an environment where I'm singled out, not in a bad way but just in the sense that I am the one that is supposed to have all the answers and stuff like that.

The lack of diversity in higher level courses has left Nick to face some uncomfortable experiences. Nick recalled a specific time in an AP European History course when the discussion was about slavery and how he felt that both the students and the teachers expected him to know the content to a greater extent than others in the class simply because he was Black. Comparatively, he communicated that many people, locally and nationally, assume that because he is an African American male that he would perform at a lower achievement level than his non-Black peers. When faced with this level of racial bias he encouraged himself to rise above the expectations set by others.

Alright, I have to do well because I'm Black and the odds are stacked against me. It has nothing to do with the school per se, I think just like society's view on Black people. Now that I've been in high school and I'm getting older, the news is

frequently reminding us why we're lower than other classes or other races or why certain things happen to us.

Like many other minority students, Nick has experienced both direct and indirect racism while in a school setting. He shared with me a time that his little sister was being racially bullied in school as well.

At school, people tried to make fun of her because she's darker. This one time she came home crying because these boys turned off the lights, and said, 'Where's Carolyn?' making fun of her skin tone. She feels like her skin tone is not the best and it diminishes her character a little bit. And so I'll get mad or I'll just tease her, I'll be like, 'I'm gonna meet these boys so I can rough them up.' Of course, I don't really mean that, but I care about her a lot.

Nick believes that if school districts are serious about equitable access and achievement in advanced secondary mathematic courses for African American adolescent males, then they must provide more opportunities for quality co-curricular programming. "For example, I'm in the Mathnasium program, like I told you about earlier. Other African-Americans that I know, they might not be able to afford it because it's like \$400 a month. So, maybe the district can offer a program similar to Mathnasium to help". He further advised that educators ensure students are academically and mentally prepared for the rigor of these courses as he recalled his current work load in AP Calculus, "because you don't wanna just put a kid in that class just to say, 'Oh, I have this many Black kids in my class, so we're great!'"

Chapter Conclusion

Chapter 5 honored the essence of this narrative inquiry study in that it presented the findings from interviews with six African American adolescent male participants currently or previously enrolled in an AP Calculus course attending four different high schools. The resulting in-depth narratives described the participants lived experiences through their respective voices. In keeping with the spirit of narrative research, this chapter has focused intently on the voices of the participants of the study, with an effort to highlight, as much as possible in their exact words, the thoughts, feelings, and lived experiences of high achieving African American or Black adolescent males who have demonstrated success in advanced level mathematics courses.

The six retold narratives essentially served the purpose of answering Research Question 1: What are/were the thoughts, feelings, and lived experiences of high achieving African American or Black adolescent males who have demonstrated success in advanced level mathematics courses? The experiences of the study participants included their schooling experiences from elementary through high school specifically speaking to the need for influential relationships and interactions, quality schooling experiences, intrinsic and extrinsic motivations, as well as the impact and navigation through societal, institutional, and individual racial bias regarding African American males' access and achievement with quality instruction.

Chapter 6: Discussion and Implications

The stories of African American adolescent males are rarely heard or told in an affirming way within the general education literature (Howard, 2013). Adopting a critical race theory stance, this study examined the intersectionality of race, class, and gender and their influence on the educational outcomes of six African American males, who against the odds, have demonstrated success in advanced secondary mathematics. Consistent with critical race theory, the purpose of the study was to create counter narratives that push back against dominant narratives about the academic abilities of African American males, specifically in mathematics. This study explored the ways in which this historically marginalized student group self-identify and communicate their social, cultural, emotional, and academic experiences and the development of strategies to navigate environments in which they are underrepresented.

Three research questions guided this investigation:

1. What are the thoughts, feelings, and lived experiences of high achieving African American adolescent males who have demonstrated success in advanced high school mathematics courses?
2. What are the most influential factors that high-achieving African American adolescent males attribute to their access and achievement in advanced high school mathematics?
3. What individual, institutional, and societal barriers do high achieving African American adolescent males report having to navigate during their pursuit of access and achievement in advanced high school mathematics courses?

To answer these questions, I conducted semi-structured interviews with six African American male students attending four different high schools, across two

different school systems. The thick data collected and retold as narratives in Chapters 4 and 5, provided a sound foundation to identifying the experiences of the study participants from elementary through high school and answer the research questions above.

At the broadest level, the African American male participants consistently addressed the following four themes in their interviews: (1) inequitable [institutional] practices rationalized by the dominant narrative, (2) caring and influential relationships, (3) early access to enriched and accelerated mathematics curricula, and (4) intrinsic and extrinsic motivators for success. First, the participants collectively spoke of a range of racialized and sometimes gendered barriers (e.g., teachers and peers who doubted the abilities of Black learners) that they faced as African American male learners of mathematics. Second, and in response to these racialized-gendered barriers, they each reported drawing on relationships and positive interactions with their parents, teachers, peers, and African American male role models. Third, all six participants communicated the value added of exposure to high quality schooling experiences to include early identification as strong mathematics students, enrollment in specialized schools and programs, early exposure to rigorous mathematics content, and active participation in extra/co-curricular opportunities. Fourth, and mediated by their relationships and early exposure to advanced mathematics, they all reported developing intrinsic and extrinsic motivations that sustained their success. In terms of the last point, and in their own ways, they were motivated, in part, to push back on dominant, racist narratives regarding the academic abilities of African American males as they navigated implicit racial bias from their teachers, peers, institutional practices, and the larger society.

In the remainder of this conclusion chapter, I draw on these themes to illustrate the range and complexity in experience of the academic achieving African American adolescent males. In so doing, I connect these themes to the literature on African American males and their experiences in school mathematics. Following this discussion, I identify some study limitations. I conclude the chapter with recommendations presented to other K-12 education practitioners and researchers of African American adolescent males to utilize as they seek to provide the necessary supports that enable greater access, achievement, and experiences in advanced and accelerated instruction.

Summary of Key Findings

As shared in Chapter 2, there is a growing body of research intentionally designed to provide counter narratives to dominant narratives about the lack of African American adolescent male academic success, specifically with respect to mathematical access and achievement (Berry, 2003; Berry, 2008; Footé Sykes, 2012; Howard, 2008; McGee, 2009; McGee, 2013; McGee & Pearson, 2014; McGlamery & Mitchell, 2000; Terry, 2010; Terry, 2011; Terry & McGee, 2012; Thompson & Davis, 2013; Thompson & Lewis, 2005). Informed by critical race theory, these studies have played a major role in furthering a paradigm shift that to shift the focus from African-American males' failures to their high levels of high academic achievement in the face of racialized and racist barriers. Consistently documented within the literature, and substantiated from results of this study, are nine broad themes: (1) parental support and advocacy; (2) caring teachers; (3) positive peer relationships; (4) early identification and exposure to rigorous math content; (5) college and career goal alignment; (6) extracurricular and co-curricular

activities including sports; (7) intrinsic motivators (8) aggregated individual and (9) institutional racism.

The Role of Relationships

Consistent with the literature, the mathematically successful African American adolescent males who participated in this study asserted that the most influential support to their academic success, positive and negative, stemmed from relationships in their home, parents and family associates, as well as those formed at school, their teachers and peers. While the connections between home and school were often fragile, participants conceptualized their parents, caring teachers, and motivating peers as important pillars to their academic success. Equally, they shared their feelings and lived experiences with those who doubted their capacity or their rights to accelerated and enriched mathematical learning environments.

Parental Relationships and Supports. Capturing the experiences of six African-American adolescent males who are high-achieving in high school mathematics revealed they had parents who were active in their development, building academic and social confidence by maintaining high expectations and strategically finding ways to benefit their children's educational outcomes. Parental involvement in education has been identified within literature, and substantiated in this study, as an important way to facilitate positive youth development (D'Amico, 2008; Hill & Taylor, 2004; Jeynes, 2009). D'Amico (2008) revealed that when parents get involved in their children's education at home, their efforts translate into high student achievement in school. Participants and researchers alike, have conceptualized parental involvement as a

multifaceted construct encompassing involvement at school, involvement at home, and academic socialization (Fan & Chen, 2001; Hill & Tyson, 2009; Noble, 2009).

According to Wang and Sheikh-Khalil (2014), school-based involvement includes parent–teacher communication, attendance at school events, and volunteering at school. Home-based involvement includes provision of structure for homework time and leisure time (e.g., having a set time or location to do homework, visiting museums), as well as monitoring of schoolwork and progress. According to Hoge, Smit, and Crist (1997), family and emotional support, is a general family characteristic (not specifically related to schooling), yet empirically it has been shown to predict school success. Consistently, when participants in this study discussed the support provided to the parents it was greatly associated with positive affirmations and co-curricular opportunities outside of direct school involvement.

Playing out in six different ways, findings revealed the crucial relationship with and role of African American mothering to African American males' academic success. Each participant shared how the active presence of their mothers and their consistent care for their social and emotional wellbeing helped them academically succeed. From halting their academic and professional goals, to utilizing their position as educators to advocate on the sidelines, the participants spoke very highly of their mothers influence on first their confidence as young Black men which translated to their associations as academic contributor to any learning environment.

Although I did not specifically ask participants about their explicit preparation to be Black men in America, Greg shared how it was his mother who had “the talk” with him enhancing his level of awareness of and self-advocacy against racism and structural

bias. Eric and Javian, communicated the support received from their fathers, who never attended college, to be more about working hard, prioritizing, creating a balanced life, and the power of being a disciplined man.

According to Hill and Tyson (2009), academic socialization refers to the communication of parental expectations about schoolwork and the importance of education, encouragement of educational and career goals, and making plans and preparations with adolescents that support their future goals. They identified academic socialization as having the strongest positive relation with student academic achievement. Five of the six participants had at least one parent with a college degree, increasing the academic expectation and opportunity for success (McGue, Rustichini, & Iacono, 2017). As mentioned in Chapter 4, even students such as Javian, who is striving to be a first generation college graduate, utilize his academic achievement to gain economic prosperity and social mobility to honor the experiences and sacrifices of his parents.

It is important for me to point out that the findings of this study are not intended to suggest that hyper-competitive, middle class parenting techniques (e.g., helicopter parenting, ensuring their children labeled as gifted) are the only way to increase the academic performance of African American males. While having supportive and academically involved parents are added benefits to teaching and learning, it is not required in this sense. As participants in this study discussed their parental involvement in academics, it was much more about building their confidence as scholars.

Caring Teacher Relationships. As discussed in the literature, the participant narratives all pointed to African-American males benefitting academically, socially, and emotionally, from the positive and supportive influence of mathematics teachers (Chhuon

& Wallace, 2014; Decker, Dona, & Christenson, 2007; Martin & Dawson, 2009; Noble, 2009). My participants identified the qualities of caring teachers to include being kind, patient, respectful, encouraging, honest, and transparent. In different ways, and with one exception (Chris), they each spoke to how teachers they deemed influential in their academic success made themselves available not only for academic support but showed genuine concern for their social and emotional wellbeing outside of the content. They communicated that these teachers had an obvious desire to see them succeed, not only in the course they taught, but in the long-term. Caring teachers make the learning individually relevant, ultimately creating a sense of belonging while helping students to develop high expectations for themselves and those around them. This sense of belonging also increases academic engagement for African American males in their mathematics classroom allowing them to take risks, ask higher-level questions, and promote positive interactions among other students.

Although they were willing to stay after school and during lunch to support, many of participants at some point experienced a teacher that they felt did not care about their success let alone in building authentic relationships. The experiences proved to be ones in which students did not perform as well in or had to work exceptionally harder to overcome the obstacle. When African-American males feel supported, accepted, and valued at school, they are more likely to make academic connections and demonstrate greater intrinsic motivation (Byrd & Chavous, 2011; Dancy & Brown, 2008; Dixon et al., 2009).

However, all the participants named teachers that they felt variously lacked cultural-racial competence. This is consistent with the literature on Black students

(Sampson, 2010; Waddell, 2014). The participants felt that many teachers did not have a genuine desire to fully support them, falling short in meeting the social, emotional, and academic needs of their African American male students. These teachers reportedly allowed their personal biases against African Americans, and perhaps African American males, to trump their professional, moral, and ethical responsibilities. The participants revealed that African Americans, specifically African American males, are not consistently seen as capable learners who are valuable to academically advanced learning environments, even after countering the limited expectation on multiple measures (Berry, 2008). Although their resilience allowed them to effectively access these culturally insensitive environments, these environments, in many cases, hindered their opportunity to truly self-reflective on the necessity of their academic, racial, and cultural identities within the learning space.

Positive Peer Interactions. Another recurring theme identified in this study and the literature (Hrabowski et al., 1998; McGlamery and Mitchell, 2000; Noble, 2009; Stinson, 2004), is the importance for African American males having the social and academic support from a cohort of peers. Lashbrook (2000) defined peer pressure, in a neutral sense, as a “specific instance of social influence, which typically produces conformity to a particular way of acting or thinking” (p. 8). When making friends, participants gravitated towards people that had common backgrounds and interests but who also were also different enough to have an interesting friendship.

According to Noguera (2008), being accepted into a peer group plays a powerful role in the development of African American males, be it positive or negative. All the participants of this study reported developing healthy associations with other members

within their peer groups, more likely than not, outside of the classroom setting. They used their involvement at church, clubs, and sports to foster friendships and create social encounters to deescalate from their demanding course loads as well as indulge in safe spaces where they felt that they belonged. Emotional support, academic guidance, companionship, balance, encouragement, exposure, a release from academic pressure, fun, and identity development are a few of the resources that participants communicated that their friends offered them.

As part of accessing and achieving in advanced mathematics courses, African-American adolescent males benefit from surrounding themselves with academically motivated peers. Even though, for the most part, the participants navigated through the advanced mathematics pathway in isolation from other African American students, they all communicated the added value and comfort when seeing someone who looked like them in their classes. They also discussed that the scarcity in African American male enrollment in advanced level math classes was recurrent because of the lack of racial representation.

Participants expressed that it was through structured engagement, often, in extracurricular and/or co-curricular activities, where they found a safe space to socialize with other young African American males. These few safe spaces created opportunities to socialize with their peers in a cooperative, team building environment, which was not present in their advanced academic settings. As a member of these organizations and programs participants felt a part of something positive, creating a sense of belonging, self-worth, and the experience of being needed for something outside of themselves. Their coaches and sponsors played a vital role in their network of social relations, using

sports participation to link principles of character development, team work and collaboration, and academic success.

The students in this study found that participating in extracurricular and co-curricular opportunities provided them with an outlet to be their true selves, simultaneously escaping the peer-ascribed stereotypes of either being “too White” and “too Black.” When invited to collaborate in mathematics courses, these young men described having had to navigate negative stereotypes from their peers – and supported by some of their teachers – that classified them as incapable contributors, cheaters, hyper-aggressive, and invaders. Moreover, they found that being isolated from majority of their African American peers in advanced mathematics courses produced additional social-emotional burdens.

Access to Rigor, Achievement, and Greater Opportunities

While the overall enrollment of students in advanced or accelerated mathematics, including Algebra I in middle school, is increasing nationwide, there remains wide race- and class-based disparities (Bozick & Ingels, 2008; Civil Rights Data Collection, 2018; Dalton et al., 2007; Esmond, 2009; Martin, 2009; Moses & Cobb, 2001; Oakes, 2005). African American male students typically find themselves receiving disproportionate access and opportunity to advanced mathematics courses (Civil Rights Data Collection, 2018).

Over the last two decades, many states and school districts have been aggressively pushing a larger and more diverse pool of students to take Algebra I before entering high school. Beginning in the 1990s, the National Council of Teachers of Mathematics (NCTM) challenged schools to program for earlier access (i.e., eighth grade) to Algebra I

by increasing the rigor of mathematics instruction in earlier grades, back mapping into elementary grades (Kindergarten thru 5th grade), creating an infrastructure of readiness among the student population who demonstrated readiness (NCTM, 2014).

All six of the participants credited early access to an enriched and accelerated mathematics curriculum as crucial to their opportunity for access and long-term success in advanced secondary mathematics. In their individual accounts, each participant shared the point - all prior to entering the fourth grade – in which they were separated from their peers and labeled as highly able in some form. The elementary school identification of their mathematical capacities led to their enrollment in high performing schools and specialized programs and inadvertently exposure to rigorous secondary mathematics content. Those who reported not having had the most effective instructors cited gaining access through co-curricular opportunities over the summer and after school. For these six students, extra-curricular opportunities helped to fill the gaps that traditional schooling created.

This study substantiated the results of research that communicates the necessity of mathematical competency, even for those who do not plan to enter a STEM field in college or career (Isaacs, Sawhill, & Haskins, 2010; Leinwand, 2012). As a result of their school district adhering to the advised curriculum shift, each of the participants engaged in some form of enriched and accelerated mathematics course beginning in the 4th grade. This early identification and exposure to rigorous mathematics provided an opportunity for all six of the participants to engage in Algebra I while in middle school, positioning them for access and achievement in higher level courses.

Systemic and institutional practices allow students to be classified into categories, placed into certain classes, and provided with different expectations of learning. These expectations are based on perceived abilities as monitored by assessments, historical performance, teacher recommendations or a combination thereof. As discussed in Chapter 2, deficit thinking by teachers is one of the most powerful forces working against students of color motivating one to question the number of capable African American adolescent males who are denied access to a rigorous mathematics course pathway and not provided with the essential supports needed to achieve in higher level mathematics (Berry, 2008; Lattimore, 2005; Oakes, 2005). As discussed in Chapter 5, Greg recounted his experience with a school counselor who, he felt, had low expectations of his past accomplishment, capacity to succeed, and future college aspiration. In a similar manner, Eric very passionately retold the story of his Asian Pre-Calculus teacher who he believes intentionally encouraged all Black and Latino students to drop her course on the first day. He also reported that this teacher refused to extend him a 0.1 percent curve to his final grade, when she had done for several his non-Black classmates.

The study participants communicated that once they had reached a level of mastery of course content, they often qualified for specialized programming outside of their core math courses and in some cases outside their local school. These alternative routes to enrichment begin as early as fourth grade for participants and continued throughout high school. Often, their qualification for mathematical enrichment required them to leave the communities in which they lived and bused to other schools to access a schooling experience relevant and response to their needs. Although academically responsive and relevant, these new environments were not supportive of African

American male students, culturally, socially, nor emotionally. Even for the two participants who did not move to a physically different schools they were often isolated into a separate society within the school. As research conclude, students' cultural experiences are important to the development of their identity, inclusive of mathematics (Leonard, Brooks, Barnes, & Berry, 2010).

Cultivating Positive Academic Identities

Identity is shaped through an individual's developed beliefs about self within the context of past experiences, social groups (e.g., race, gender, ethnicity, social class), and the way they chose to express that relationship. According to Anderson & Collins (2007), student academic self-belief, which has an influence on achievement, can be viewed as one of three constructs: self-efficacy, expectation of success, and self-perception of ability in a specific social context to include systems of power, the institution of school, and inequality such as race, social class, and gender. Specifically for African American adolescent males, their racial identities and academic identities are co-constructed due, in no small part, in response to the racism they encounter throughout their educational trajectories.

Bandura's (1986) social cognitive theory outlined four sources of information on self-efficacy: enactive attainments, vicarious experience, verbal persuasion, and physiological state. Enactive attainments refer to the effects of experiences; prior success can elevate efficacy while prior failure can lower efficacy. As stated in the literature, by 4th and 5th grade, African American students often sense that they are being treated differently by educators than their White peers, often causing them to withdraw from the learning environment and question their academic placement (Hargrove & Seay, 2011).

All six participants were identified as having an enriched mathematical capacity at the end of third grade to enter the accelerated pathway, kicking starting their confidence as capable learners. This provided greater access and achievement in rigorous course work on the secondary level which aided in the development of their mathematical identity and self-efficacy.

To increase academic self-efficacy, it is important to assist students in developing strategies that would build their belief in the importance of education. Researchers communicate the value of students having role models and examples of college access and achievement (Hertz, Jayasundera, Piraino, Selcuk, Smith, & Verashchagina, 2007; McGue, Rustichini, & Iacono, 2017). Consistent with this, five of the six participants cited having at least one immediate family member attend college which, in turn, seemed to have aided in their belief that they would attend college as well.

Exposure to family members who have successfully matriculated through college is a great source for academic motivation for African American males is not the only form. Vicarious experience, also a part of Bandura's (1986) social cognitive theory, occurs when an individual believes in their ability to achieve certain results after observing other people, similar to them, who have engaged in the same activity and have acquired success. Schunk, Pintrich, and Meece (2008) state, "Observing the successes, failures, rewards, and punishments of others creates expectations in observers that they are likely to experience similar outcomes for performing the same behaviors" (p. 157). Adrian, Javian, and Nick specifically identified the relationship they developed with an African American male teacher, naming them as their most influential teacher and role model. As previously mentioned, Greg's father consistently engaged him with his

fraternity brothers, all African American male college graduates and now successful in their own rights.

While examining the relationships between the perceptions of school belonging, educational aspirations, and academic self-efficacy, Uwah, McMahon, and Furlow (2008) concluded that academic self-efficacy was predicted by student's educational aspirations and feelings of belonging. All six participants identified their college and career aspirations as driving forces to their academic success and enrollment in higher level mathematics courses. Even those who decided not to pursue a STEM major in college understood the importance of higher level mathematics as an entry point to college access and achievement, leading to a lucrative career trajectory. In many cases, this was developed through an environment of inclusion, motivation, and support driven by participant's parents and educators they deemed as caring and supportive.

A Complex Narrative

And when white Americans tell the Negro to "lift himself by his own bootstraps", they don't oh, they don't look over the legacy of slavery and segregation. I believe we ought to do all we can and seek to lift ourselves by our own bootstraps, but it's a cruel jest to say to a bootless man that he ought to lift himself by his own bootstraps. And many Negroes by the thousands and millions have been left bootless as a result of all of these years of Oppression and as a result of a society that deliberately made his color a stigma and something worthless and degrading (Martin Luther King Jr., 1967)

African American males' academic performance is widely recognized and generally accepted with language of failure. I deeply believe this narrative to be

troublingly incomplete. This narrative is created by the dominant culture as an “invisible hand” that guides both reality and perceived reality. This individualistic framing serves to blame the victim and not consider the vast socio-historical elements surrounding their academic performance. I feel that it is very important to clarify that communicating the differential outcomes of African American males’ academic achievement, always in comparison to that of their middle class European American peers, becomes counterproductive when the description is exclusive of systemic and societal issues of racism, economic inequality, bias in curriculum and tests, gaps in school resources including teachers, etc.

Therefore, scholars like myself aim to debunk negative storylines by highlighting evidence of the opposite, thus presenting what we coined as the counter narrative.

However, through careful reflection of this study I realize that the narrative of African American male academic access and achievement does not run completely counter to the dominant narrative. In part because, to be successful in mainstream institutions, people – inclusive of people of color – largely have to play by rules set up by people in power.

Participants in this study are both pushing back against the dominant narrative of nonsuccess while also adopting suggested dominant, White middle-class, strategies as the vehicle to their success. One of the most interesting findings for me in this study was the variance in participants’ awareness of discrimination, racism, and identity threat and, most shockingly, their response when it was realized. Many of the participants have learned the concept of “playing along to get along” without even realizing the negotiation of their unique individuality. This is evident in most of them not wanting to be seen as the aggressive Black man, internalizing racist comments from White peers as “playful

racism,” and accepting the “acting White” label as part of the academic process.

Students, inclusive of the six in this study, are often faced with stereotypes and, related, having their identity challenged and changed to better align to the picture society has labeled as successful. According to Steele (2010), the threat of changing how one views themselves is set as a standard predicament of life and simply put, “things you have to deal with in a situation because you have a given social identity” (p. 3). My question is: why does the prerequisite for success in American schools include checking one’s identity, experiences, and beliefs at the door?

The ultimate issue here is that the dominant and counter narrative live together in a flawed system. A system in which defined success hundreds of years ago from a culturally and racial isolated perspective and currently assigns access and opportunity. The educational system in America is clearly broken, paradoxical at best. As Dr. Martin Luther King Jr. eloquently stated, the legacy of slavery and segregation in America has created a society that continues to define the identity of the Black man to be worthless, forcing them to conform to European characteristics in order to experience “success.” Fortunately, as McGee and Martin (2011) and the six African American adolescent males of this study suggest, “students do not automatically experience a suppression of performance in situations where stereotypes exist” (p. 1349).

Limitations

As with any study, this interview study has limitations. One limitation is the number of students interviewed. The study data came from two interviews with six high-school-aged students. It is possible that the inclusion of a greater number of participants would have led to additional insights – possibly even results that contradicted some of the

results cited in Chapters 4 and 5. However, the goal of the study was not to necessarily produce generalizations but rather to produce insights about how African American males are succeeding in spite of the structural arrangements and racist ideology that works against them.

To be clear, I chose the arguably small sample size of six students for two reasons: the nature of this research was exploratory, and so I aimed for depth as opposed to breadth and generalizability, and six participants seems feasible given my resources and timeframe. Consistent with depth and richness of responses required for narrative inquiry, the study enrollment numbers needed to remain small and manageable. As the researcher I was more concerned with who the participants were, as they would need to exhibit the lived experiences that would allow me to answer the study's research questions.

A second, and related, limitation of this study is that the participants attended only four high schools. The four identified high schools provided a limited representation of the kinds of institutions attended by African American adolescent males. To capture a broader range of the academically successful African American male mathematics students, one would need to recruit students from many more schools and vastly different areas.

A third limitation of this study is my reliance on self-reported data and interviews rather than monitoring actual decisions or behaviors of the participants. This reliance only on verbal interviews might limit the validity of the results. Participants' accounts about the factors that led to their success in secondary mathematics might not reflect reality or, worse, might be due to social desirability (i.e., telling the researcher what he wants to hear). Although beyond the scope of this study, observations likely would have

helped to mitigate against such validity issues and might also have raised factors that the participants were not fully conscious of.

Despite these limitations, this study provides a “voice” for African American adolescent males who have, against the odds, demonstrated successful access and achievement in upper level secondary mathematics courses. Although the data gathered from these participants cannot represent the responses of all successful African American adolescent male learners from the four identified schools, let alone the larger community, this study provides a qualitatively rich, principled investigation of the experiences of the participants. More importantly, this analysis will play a significant role in understanding the links between African American adolescent males and mathematics access and achievement in upper level secondary mathematics and will add to a growing knowledge base that can be understood by mathematics researchers, practitioners, parents, and students.

Implications and Future Research

Implications for Policy and Practice

At the end of each individual interview, I posed the question, “If you had the opportunity to sit with your educational policy and decision makers, all having a desire to learn how to better support African American males’ access, achievement, and experience in advanced mathematics, what advice would you give them?” In response, Chris, Eric and Greg each focused on the value of teachers creating inviting spaces that allow African American males to feel a sense of belonging in advanced mathematics courses. Adrian believed that schools around the world should do a better job recruiting and supporting minority students to participate in higher level mathematics and other

advanced classes to alleviate such isolation from racial peers. Javian and Nick's number one recommendation was for school districts to invest in co-curricular programs that expose students and families to academic opportunities outside of the general curriculum.

As an African American male educator and researcher, of course, I also have recommendations for policymakers. I have both personal and professional stake in this phenomenon regarding under-represented minority students' academic experiences and outcomes, and society's generally low expectations of us. Thinking back to my own childhood experiences, both at school and in the home, I can understand, relate to, and sometimes challenge, the views that study participants articulated in interviews. As I reflect on the teachers I had, I credit my 7th and 8th grade English teacher as my favorite teacher even though it was my least favorite subject area. This identification was never due to the rich content knowledge shared with us, or her getting us excited about grammar and literacy but simply because of the way in which she made us feel as people.

As a district mathematics leader, I am constantly in discussion about, and many times debating, what is in the best interest of Black and Brown students as it relates to mathematical acceleration. With a firm understanding of the instructional shifts of Common Core standards and the introduction of the Standards for Mathematical Practices (SMP), compacting and skipping standards do not support conceptual understanding for students' long-term interest and success in post-secondary mathematics. This creates a double edged sword as it relates to the early acceleration debate, applicable to all six participants, and the work around equitable access and achievement. As stated by the participants, many of their counterparts are a part of

academic programs outside of the core curriculum provided by the school, which often come with a cost and always with awareness.

My recommendation to district leaders is that they focus less on acceleration and enrollment and more how students experience mathematics and develop mathematical knowledge. School districts should create a vision in which all students, regardless of course enrollment, believe they are mathematical thinkers – thinkers who see themselves as resourceful and valuable contributors to the mathematical learning process. Students should independent and collaborative interact with grade level appropriate mathematical content, engage in rich discourse, and persevere in solving non-routine problems. Districts should work towards a vision where all students are prepared for, interested in, and successful in higher level mathematics. As a result, their learning will transfer to other content areas, allowing them to navigate the world as confident critical thinkers.

For this vision to occur, in many cases, there first must be a shift in institutional-bureaucratic mindsets as it relates to mathematical programing and learning. Practitioners on every level must believe that *all* students, regardless of ethnicity, gender, socioeconomic status, disability category, etc. are capable of academic greatness and lifelong success. They must understand that mathematics is a creative discipline and an interconnected language where students and teachers can actively and collectively make meaning and build conceptual understanding in addition to procedural fluency.

As part of this, school districts should make it a priority to consistently and effectively build the capacity of their teachers and school leaders. District leaders should strategically, effectively, and consistently:

- Evaluate policies, practices, and structures needed to build teacher and school leader's capacity and improve student outcomes
- Reflect and respond to their own capacity for coaching and supporting schools in a process of ongoing improvement.
- Create and monitor an instructional program that allow for equitable access to a variety of pathways to college and career readiness.

Future Research

The description of the lives of the participants, the collection of their individual stories of experiences, and a discussion of the meaning of those experiences is the general make up of this research (Clandinin, 2013). Ultimately, my goal was to deeply understand their experiences and perspectives as African American males who had demonstrated their ability to academically perform. Even though this study substantiates the scant literature on high achieving African-American male students, specifically in mathematics, additional research is needed to develop a better understanding of their experiences and needs for greater results. Given some of the findings identified in this study, large-scale longitudinal studies should be conducted using a larger sample of participants to include students, parents, teachers, and district leaders. Studies such as this will allow mathematics researchers and practitioners to understand if similar findings are pervasive within a larger population.

In addition, a comparative study could be conducted on African American males who were not successful in accessing and achieving in advance mathematics to compare factors that are missing examining the nature of their family, educational, social, and personal experiences that may have led to their lower performance in mathematics,

pursuit of alternative disciplines, or even dropping out of school altogether. Another comparative study involves other racial, gender, and social demographic groups with similar academic profiles as the participants in this study to compare self-identified attributes of success.

My study included three first generation African American or Black males. The three first generation Blacks revealed more similarities than differences in their cultural identity and pride compared to U.S. born Blacks. According to McGee (2008) there are “nuances in racial identity that may occur involving nationality and culture, the commonalities in their experiences, such as lack of privilege and power, are shared because of the shared meanings for *Blackness* in the U.S. society” (pg. 224). Therefore, a comparative study could be conducted that compares students whose families have lived in American for 2 or more generations and those that are of first.

Since one of the goals of this study was to investigate several self-identified attributes of success impacting high achieving African American male mathematics students, there were limitations on the researcher’s ability understand deeply each individual factor. Future research should investigate each of these factors thoroughly. Not only must future research seek to understand these factors more deeply, there must be an exploration of the quality of these experiences in various populations of African American male students.

Chapter Conclusion

In this dissertation, I have presumably argued that a comprehensive focus on equitable access and achievement in advanced secondary mathematics requires researchers and practitioners to focus not only on the experiences and needs of the

underperforming, but careful consideration to those that, against the odds, have demonstrated success. Focus on this subgroup sheds light on how to better support the learning experiences of all students. Fighting against inequitable policies, practices, and mindsets justified and/or rationalized by the dominant narrative, creates opportunities to disrupt racialized injustices that fuel societal, institutional, and student marginalization. Documenting the lived experiences and self-identified attributes for success, of the academically successful African American adolescent males redefines the challenges, roles, and responsibilities of educators, to work endlessly and effectively to eradicate the opportunity and achievement gap.

Appendices

Appendix A

Interview Protocol

Part 1: Internal Relationships/Experiences

Self-Motivators

- What motivates you to do well in school?
- What are your plans after high school?
- After college?
- What made you want to choose this career path?
- How does it relate to the level of math courses you have taken?
- How would you describe yourself as a mathematical student?
- Ability? Grades? Effort?
- Tell me about the moment you realized you were good in math?
- Who was involved in this discovery?
- What factors influenced your course enrollment?
- Did you have a say in the decision?
- How does that make you feel?
- Can you remember a time where you did not perform well in Math? If so, when and how did you overcome?
- Tell me about a time you felt the proudest as a mathematical student?
- Who and what was involved?

Extra-Curricular and Co-Curricular Activities

- Are you involved in any extracurricular activities? Academic Clubs?
- Do they support your academic performance or hinder? How?

Race and Access

- Many people assume that success mathematics is for “White” or “Asian” students.
What are your feelings about this stereotype and have there been any instances where you have had to deal with it? How did you deal with it?
- Tell me about the racial makeup of the school(s) you attended? Students?
Teachers?
- What role did that play in your course enrollment and achievement?
- How has your elementary and middle school experience impacted your math achievement in high school now?
- How does your race play a role in mathematics course enrollment/achievement?
- Have you ever experienced racism in school from an adult or peer?

Part 2: External Relationships/Experiences

Family Influence

- Tell me about the structure of your family.
- Who lives with you?
- How do your parents/guardians support your learning? Math learning specifically?
- How could they support you more?
- Is your family religious?
- What role does religion play in your academics?
- How does your family’s income affect your academic achievement in school?

Role Model/Mentor

- Do you have any role models?

- Who are they?
- Tell me how you met.
- Tell me how they support your mathematical accomplishments.

Peer Influences

- Tell me about your friends. Other classmates.
- Are your friends in the same math class as you?
- How do your friends support your academic success?
- How do they hinder your success?
- How do other black students in your math class treat you? Not in your math classes?
- How do students of other races treat you?

Part 3: Schooling Relationships/Experiences

Instruction

- Describe to me what a typical math class looks like?
- Where are you seated?
- What you are doing?
- What are you thinking during a typical math class?
- Who does most of the talking?
- Are you challenged?
- If you do not understand something being taught what do you do?
- What does good math teaching look like to you?
- Do your teachers make lesson relevant to you? The real world?

- What are the most important Classroom factors that has helped you succeed in mathematics?
- If given the opportunity to take a more accelerated course, how do you think you would do?
- What supports would you need to be successful?

Caring Supportive Teachers

- Tell me about the mathematics teachers you have had.
- Who is your favorite teacher? What makes them stand out from the rest?
- Who is the worst teacher you have ever had? What makes them stand out from all the rest?
- Describe a positive experience you've had with a mathematics teacher? How did that affect your mathematics achievement?
- Describe a negative experience you've had with a mathematics teacher? How did that affect your mathematics achievement?
- How important is it for teachers to build relationships with their students?
- Have you ever had a teacher who did not believe in you?
- How did you know?
- How did this affect your performance in that class?
- Do your teachers believe African American males can succeed equally to the success level of White or Asian students?
- Do you believe this?
- Have you had any African American teachers? African American male teachers?
- Describe your relationships with them

- Describe your performance in their classes
- How does that compare to other teachers?

Part 4: Schooling Recommendations

Influential Factors

- You have been given an opportunity to sit with district leaders as they plan specifically around supporting African American males in higher level mathematics courses. Reflecting on your experiences and the experiences of other African American males, what do you want them to know and consider?
- You have the opportunity to speak to a group of African American male 6th graders, what do you want them to know and consider as they matriculate through school, specific advice on access and achievement in higher level mathematics?
 - Include specific school factors that have helped you to succeed in Mathematics.

References

- Alliman-Brissett, A. E., & Turner, S. L. (2010). Racism, parent support, and math-based career interests, efficacy, and outcome expectations among African American adolescents. *Journal of Black Psychology, 36*(2), 197-225
- Anderson, M. L., & Collins, P. H. (2007). Systems of power and inequality. In M. L. Anderson & P. H. Collins (Eds.), *Race, class, & gender: An anthology* (6th ed.; pp. 61-90). Belmont, CA: Thomson Wadsworth.
- Baldi, S., Jin, Y., Skemer, M., Green, P. J., & Herget, D. (2007). Highlights from the PISA 2006: Performance of U.S. 15-year-old students in science and mathematics literacy in an international context. Retrieved from:
<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2008016>
- Battistich, V., Schaps, E., & Wilson, N. (2004). Effects of an elementary school intervention on students' "connectedness" to school and social adjustment during middle school. *Journal of Primary Prevention, 24*, 243-262.
- Bell, D. A. (1992). *Faces at the bottom of the well: The permanence of racism*. Basic Books. Bernar, HR. (1988). Research methods in cultural anthropology. Sage Publications.
- Berry III, R. Q. & McClain, O. L. (2009). Voices, Power, and Multiple Identities: African American boys and mathematics success. *New England Mathematics Journal 41*, 17-26.
- Blakesley, S. (2013). Single-sex education in northern Canada: A case study of traplin elementary school. *The Qualitative Report, 18*(24), 1-14.
- Blanchett, W. J. (2014). African American students and other students of color in special

- education. *Handbook of urban education*, 271-284.
- Bonilla-Silva, E. (2006). *Racism without racists: Color-blind racism and the persistence of racial inequality in the United States*. Rowman & Littlefield Publishers.
- Bostic, J. D., & Matney, G. (2014). Standards for mathematical Practice. *THANK YOU TO OUR REVIEWERS*, 113.
- Bozick, R., and Ingels, S.J. (2008). Mathematics Course taking and Achievement at the End of High School: Evidence From the Education Longitudinal Study of 2002 (ELS: 2002) (NCES 2008-319). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Brantlinger, A., Cooley, L., & Brantlinger, E. (2010). Families, values, and class relations. *The Routledge international handbook of the sociology of education*, 179.
- Byrd, C. M., & Chavous, T. (2011). Racial identity, school racial climate, and school intrinsic motivation among African-American youth: The importance of person context congruence. *Journal of Research on Adolescence*, 21(4). doi: 10.1111/j.1532-7795.2011.00743.x
- Chen, X. (2009). Students Who Study Science, Technology, Engineering, and mathematics (STEM) in Postsecondary Education (NCES 2009-161). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Chhuon, V., & Wallace, T. L. (2012). Creating connectedness through being known: Fulfilling the need to belong in US high schools. *Youth & Society*, 46(3), 379-401.
- Civil, M., & Planas, N. (2004). Participation in the mathematics classroom: does every

student have a voice? *For the learning of mathematics*, 24(1), 7-12.

Clandinin, D. J. (2013). *Engaging in narrative inquiry*. Walnut Creek, CA: Left Coast Press.

Clandinin, D.J. and Connelly, F.M. (2000) *Narrative Inquiry*. San Francisco, CA: JosseyBass.

Coates, T. N. (2015). *Between the world and me*. Text publishing.

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

Council of Chief State School Officers. (2010). *Common core standards for mathematics*.

Retrieved from

http://www.corestandards.org/assets/CCSSI_math%20Standards.pdf

Creswell, J. W. (2012). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: Sage.

Dalton, B., Ingels, S.J., Downing, J., and Bozick, R. (2007). *Advanced mathematics and Science Course taking in the Spring High School Senior Classes of 1982, 1992, and 2004* (NCES 2007-312). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.

Dancy, E. E., II, & Brown, C. M., II. (2008). Unintended consequences: African American male educational attainment and collegiate perceptions after *Brown v. Board of Education*. *American Behavioral Scientist*, 51(7), 984-1003. doi: 10.1177/0002764207312001

Decker, D. M., Dona, D. P., & Christenson, S. L. (2007). Behaviorally at-risk African

- American students: The importance of student–teacher relationships for student outcomes. *Journal of School Psychology*, 45(1), 83-109.
- Dickens, A. (1996). Revisiting brown v. board of education: How tracking resegregated America’s schools. *Columbia Journal of Law and Social Problems*, 29(4), 469-506.
- Dixson, A. D., & Rousseau, C. K. (2005). And we are still not saved: Critical race theory in education ten years later. *Race ethnicity and education*, 8(1), 7-27.
- Dixon, A. L., Scheidegger, C., & McWhirter, J. (2009). The adolescent mattering experience: Gender variations in perceived mattering, anxiety, and depression. *Journal of Counseling & Development*, 87(3), 302-310. doi: 10.1002/j.1556-6678.2009.tb00111.x
- Du Bois, W. E. B. (1903). *The souls of black folk*. New York: Bantam Classic.
- Duncan, D. J., Yeung, W. J., Brooks-Gunn, J., & Smith, J. R. (1998). How much does childhood poverty affect the life chances of children? *American Sociological Review*, 63, 406-424.
- Educational Testing Service (ETS). (2007) *America’s perfect storm*. Washington, D.C.:
- Kirsch, I. Education Trust. (2009). *Closing the gaps*. Retrieved from <http://www.edtrust.org/issues/pre-k-12/closing-the-gaps>
- Epstein, J. (2005). Attainable goals? The spirit and letter of the No Child Left Behind Act on parental involvement. *Sociology of Education*, 78(2), 179-182.
- Esmonde, I (2009). Ideas and identities: Supporting Equity in cooperative mathematics learning. *Review of Educational Research*, 79(2), 1008-1043.
- Ford, D.Y., Harris, J.J., III, Tyson, C.A., & Trotman, M.F. (2002). Beyond deficit

- thinking: Providing access for gifted African American students. *Roeper Review*, 24, 52-58.
- Gamoran, A., and Hannigan, E.C. (2000). Algebra for Everyone? Benefits of college-Preparatory mathematics for Students with Diverse Abilities in Early Secondary School. *Educational Evaluation and Policy Analysis*, 22(3): 241–254.
- Gladieux, L. E. & Swail, W. S. (2000). Beyond access: Improving the odds of college success. *Phi Delta Kappan*, 82(9), 688-692.
- Gowers, T. (2002). *Mathematics: A Very Short Introduction*, Oxford, UK: Oxford University Press.
- Grantham, T.C., & Ford, D.Y. (2003). Beyond self-concept and self-esteem for African American students: Improving racial identity improves achievement. *High School Journal*, 87, 4-7.
- Gregory, A., Skiba, R., & Noguera, P. (2010). The achievement gap and the discipline gap: two sides to the same coin? *Educational Researcher*, 39, 59-68.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research*, 2(163-194), 105.
- Gutiérrez, R. (2008). A " gap-gazing" fetish in mathematics education? Problematizing research on the achievement gap. *Journal for Research in Mathematics Education*, 357-364
- Haberman, M. (1991). The pedagogy of poverty versus good teaching. *Phi Delta Kappan*, 73(4), 290–294
- Haberman, M. (2010). The pedagogy of poverty versus good teaching. *Phi Delta Kappan*, 92(2), 81-87.

- Hamre, B. K., & Pianta, R. C. (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development*, 72, 625-638.
- Hansen, P. (1998). Schooling a European Identity: ethno-cultural exclusion and nationalist resonance within the EU policy of "The European dimension of education". *European Journal of Intercultural Studies*, 9(1), 5-23.
- Hargrove, B. H., & Seay, S. E. (2011). School teacher perceptions of barriers that limit the participation of African American males in public school gifted programs. *Journal for the Education of the Gifted*, 34(3), 434-467.
- Herbert, B. (2005, 29 August) Left behind, way behind. *New York Times*, p. A00015.
- Hertz, T., Jayasundera, T., Piraino, P., Selcuk, S., Smith, N., & Verashchagina, A. (2007). The inheritance of educational inequality: International comparisons and fifty-year trends. *The BE Journal of Economic Analysis & Policy*, 7(2).
- Howard, T. C. (2008). Who really cares? The disenfranchisement of African American males in preK-12 schools: A critical race theory perspective. *Teachers College Record*, 110(5), 954-985.
- Howard, T. C. (2013). 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(1), 54-86.
- Irvine, J. (2003). *Educating teachers for a diverse society: Seeing with the cultural eye*. New York: Teachers College Press.
- Isaacs, J. B., Sawhill, I. V., & Haskins, R. (2008). *Getting ahead or losing ground: Economic mobility in America*, Washington, D.C.: Brookings Institution Press.

- Keiser, K., & Schulte, L. (2009). Seeking the sense of community: A comparison of two elementary schools' ethical climates. *School Community Journal*, 19(2), 45-58.
- Kilpatrick, J., Swafford, J., & Findell, B. (2001). *Adding it up: Helping children learn mathematics*. Washington, DC: National Academy Press.
- Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health*, 74, 262-273.
- Kulik, J. A. (1992). An analysis of research on ability grouping: Historical and contemporary perspectives. Executive Summary. The National Research Center Report on the Gifted and Talented, 9204, 3-75.
- Ladson-Billings, G. (1998). Just what is critical race theory and what's it doing in a nice field like education? *International journal of qualitative studies in education*, 11(1), 7-24.
- Ladson-Billings, G., & Tate IV, W. F. (2016). Toward a critical race theory of education. *Critical Race Theory in Education: All God's Children Got a Song*, 11.
- Lashbrook, J. T. (2000). Fitting in: Exploring the emotional dimension of adolescent peer pressure. *Adolescence*, 35(140), 747-757.
- Lattimore, R. (2005). Harnessing and channeling African American children's energy in the mathematics classroom. *Journal*
- Lazar, A. M. (2007). It's not just about teaching kids to read: Helping preservice teachers acquire a mindset for teaching children in urban communities. *Journal of Literacy Research*, 39, 411-443.
- Leinwand, S. (2012). *Sensible Mathematics*. Portsmouth, NH: Heinemann
- Leonard, J., Brooks, W., Barnes-Johnson, J., & Berry, R. Q. (2010). The nuances and

- complexities of teaching mathematics for cultural relevance and social justice.
Journal of Teacher Education, 61(3), 261-270.
- Lewis, A. (2003). *Race in the schoolyard: Negotiating the color line in classrooms and communities*. Rutgers University Press.
- Lipman, P. (2005) Metropolitan regions—new geographies of inequality in education: The Chicago metroregion case. *Globalisation, Societies and Education*, 3(2), 141–163.
- Lubienski, S. T., & Crockett, M. D. (2007). NAEP findings regarding race and ethnicity: mathematics achievement, student affect and home school experiences. *Results and interpretations of the 2003 mathematics assessment of the National Assessment of Educational Progress*, 227-260
- Lucas, S. R., & Berends, M. (2002). Sociodemographic diversity, correlated achievement, and de facto tracking. *Sociology of Education*, 75(4), 328-348
- Lucas, S. R., & Berends, M. (2007). Race and track location in U.S. public schools. *Research in Social Stratification and Mobility*, 25, 169-187.
- Martin, A. J., & Dowson, M. (2009). Interpersonal relationships, motivation, engagement, and achievement: Yields for theory, current issues, and educational practice. *Review of educational research*, 79(1), 327-365.
- Martin, D. B. (2009). Researching race in mathematics education. *Teachers College Record*, 111(2), 295-338.
- Martin, D. B. (2003). Hidden assumptions and unaddressed questions in mathematics for all rhetoric. *The Mathematics Educator*, 13(2).
- Martin, D. B. (2000). Mathematics success and failure among African-American youth:

The roles of sociohistorical context, community forces, school influence, and individual agency. Routledge.

Martin, D. (2007). Mathematics learning and participation in African American context: The Co-construction of identity in two Intersecting realms of experience. In N. Nasir & P. Cobb (Eds.), *Diversity, Equity, and Access to Mathematical Ideas* (pp. 146-158). New York: Teachers College Press.

Martin, D. (2009a). Researching race in mathematics education. *Teacher College Record*, 111(2), 295-338.

Matthews, M.S., and Farmer, J.L. (2008). Factors Affecting the Algebra I Achievement of Academically Talented Learners. *Journal of Advanced Academics*, 19(3): 472–501.

Maxwell, J. (1996) *Qualitative Research Design*. Thousand Oaks, CA: Sage.

Maxwell, J. A. (2012). *Qualitative research design: An interactive approach* (Vol. 41). Sage publications. <https://www2.ed.gov/about/offices/list/ocr/docs/stem-course-taking.pdf>

McGlamery, S., & Mitchell, C. T. (2000). Recruitment and retention of African-American males in high school mathematics. *Journal of African-American Men*, 4(4), 73–87.

McGee, E. O., & Martin, D. B. (2011). “You would not believe what I have to go through to prove my intellectual value!” Stereotype management among academic successful black mathematics and engineering students. *American Educational Research Journal*, 48(6), 1347—1389.

McGue, M., Rustichini, A., & Iacono, W. G. (2017). Cognitive, noncognitive, and family

- background contributions to college attainment: A behavioral genetic perspective. *Journal of personality*, 85(1), 65-78.
- Merriam, S. B. (1998) *Qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass.
- Milner, H. R. (2006). But good intentions are not enough: Theoretical and philosophical relevance in teaching students of color. In J. Landsman and C. Lewis, *White teachers in diverse classrooms: A guide to building inclusive schools, promoting high expectations, and eliminating racism* (pp. 79-90). Sterling, VA: Stylus.
- Moses, R. P., & Cobb, C. E. (2001). *Radical equations: math literacy and civil rights*. Boston: Beacon Press.
- Mysore, A. R., Lincoln, F., & Wavering, M. J. (2006). Attitudes of preservice teachers toward issues in multicultural education. *Working Papers in Educational Linguistics*, 21(2), 73-85.
- National Council of Teachers of mathematics. (2010). *Making it happen: A guide to interpreting and implementing the Common Core State Standards for mathematics*. Reston, VA: Author
- National Council of Teachers of mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA: Author.
- Oaks, J. (2005). *Keeping track: How schools structure inequality* (2nd Ed.). New Haven: Yale University Press.
- Oakes, J. (1995). Two cities tracking and within-school segregation. *Teachers College Record*, 96(4), 681-691.
- Pica-Smith, C., & Veloria, C. (2012). At risk means a minority kid: Deconstructing

- deficit discourses in the study of risk in education and human services. *Pedagogy and the Human Sciences*, 1(2), 33-48.
- Polkinghorne, D. E. (1995). Narrative configuration in qualitative analysis. *International journal of qualitative studies in education*, 8(1), 5-23.
- Riegle-Crumb, C., & Humphries, M. (2012). Exploring bias in math teachers' perceptions of students' ability by gender and race/ethnicity. *Gender & Society*, 26(2), 290-322
- Sampson, D. (2010). African American Boys Checklist (AABC). Retrieved from <http://teacher2teacher.education/wp-content/uploads/2016/01/African-American-Boys-Checklist.pdf>
- Schott Foundation for Public Education. (2010). *Yes we can: The Schott 50 state report on public education and black males*. Cambridge, MA: Author. Retrieved from <http://blackboysreport.org/bbreport.pdf>
- Sleeter, C. E. (2001). Preparing teachers for culturally diverse students: Research and the Overwhelming presence of whiteness. *Journal of Teacher Education*, 52(2), 94-106.
- Solórzano, D., & Yosso, T. (2001). Critical race and LatCrit theory and method: Counterstorytelling. *International Journal of Qualitative Studies in Education*, 14, 471–495.
- Solórzano, D., & Yosso, T. (2002). A critical race counterstory of race, racism, and affirmative action. *Equity & Excellence in Education*, 35, 155–168.
- Smyth, J. (2006). ‘When students have power’: student engagement, student voice, and

- the possibilities for school reform around ‘dropping out’ of school. *International Journal of Leadership in education*, 9(4), 285-298.
- Spielhagen, F. R. (2006). Closing the achievement gap in math: Considering eighth grade Algebra for all students. *American Secondary Education*, 34 (3), 29-42.
- Steele, C. M. (2010). *Whistling Vivaldi: And other clues to how stereotypes affect us*. New York, NY: W. W. Norton & Company.
- Stetser, M. C., & Stillwell, R. (2014). Public High School Four-Year On-Time Graduation Rates and Event Dropout Rates: School Years 2010-11 and 2011-12. First Look. NCES 2014-391. *National Center for Education Statistics*.
- Stinson, D. W. (2004). Mathematics as “gate-keeper” (?): Three theoretical perspectives that aim toward empowering all children with a key to the gate. *The mathematics Educator*, 14(1), 8–18.
- Stinson, D. W. (2008). Negotiating sociocultural discourses: The counter-storytelling of academically (and mathematically) successful African American male students. *American Educational Research Journal*, 45(4), 975-1010
- Terry Sr, C. L. (2011). Mathematical counterstory and African American male students: Urban mathematics education from a critical race theory perspective. *Journal of Urban Mathematics Education*, 4(1), 23-49.
- Terry Sr, C. L., & McGee, E. O. (2012). “I’ve come too far, I’ve worked too hard”: Reinforcement of Support Structures Among Black Male mathematics Students. *Journal of mathematics Education at Teachers College*, 3(2).
- The American Heritage® dictionary of the English language (4th ed). (2000). Boston: Houghton Mifflin.

- Thompson, G. (2004). *Through ebony eyes: What teachers need to know but are afraid to ask about African American students*. San Francisco, CA: Jossey-Bass.
- Thompson, L., & Davis, J. (2013). The meaning high-achieving African-American males in an urban high school ascribe to mathematics. *The Urban Review*, 45(4), 490-517.
- Thompson, L. R., & Lewis, B. F. (2005). Shooting for the stars: A case study of the mathematics achievement and career attainment of an African-American male high-school student. *High School Journal*, 88(4), 6–18.
- Tokunaga, T., & Douthirt-Cohen, B. (2012). The Ongoing Pursuit of Educational Equity in Japan: The Accreditation of Ethnic High Schools. *Equity & Excellence in Education*, 45(2), 320-333
- Tyson, K. (2011). *Integration interrupted: Tracking, black students, and acting white after Brown*. New York, NY: Oxford University Press.
- Ungar, M., Brown, M., & Liebenberg, L. (2007). Unique pathways to resilience across cultures. *Adolescence*, 42(166), 287-310.
- Vanocur, S. (Reporter). (1967, June 11). *After Civil Rights -- Black Power*. [Television series episode]. NBC News. Retrieved from <https://archives.nbclearn.com/portal/site/k-12/browse/?cuecard=112976>
- Waddell, L. R. (2014). Using culturally ambitious teaching practices to support urban mathematics teaching and learning. *Journal of Praxis in Multicultural Education*, 8(2), 1- 21.
- Woodson, C. G. (1919). *The education of the Negro prior to 1861*. Retrieved from <http://www.gutenberg.org/files/11089/11089-8.txt>

Yosso, T. J. (2002). Toward a critical race curriculum. *Equity & Excellence in Education*, 35, 93-107.

