

SCHOOL-LEVEL FACTORS AND EDUCATIONAL EXPERIENCES THAT INFLUENCE
THE GIFTED IDENTIFICATION RATES FOR BLACK MALES

by

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(Under the Direction of Tarek C. Grantham)

ABSTRACT

The purpose of this study was to identify school-level factors and educational experiences that influenced the gifted identification rates of Black males and key elements that contributed to their STEM identity development and career success. The first empirical study examined Black male access to gifted education programs by identifying influential school-level factors using data from the Georgia Department of Education Data Collection 2021-2022. Data were analyzed using linear regression models with independent predictor variables (x) as school-level factors and the dependent predictor variable (y) as the relative percentage of Black male gifted enrollment. The major findings revealed that as Black male enrollment counts increased, their gifted identification rates increased. However, the predicted gifted identification rates for Black males were lower in physiographic regions with more rural areas than urban cities and also lower in Title 1 schools across all physiographic regions.

The second empirical study collected semi-structured interview data from retrospective reflections of three high-achieving Black males in medicine who are first-generation college graduates. The participants attended urban K-12 public schools in low to lower-middle-class communities. The findings indicated that restrictive classroom structures that lacked real-world

relevance and support prevented Black males from exhibiting their potential, and as a result, K-12 teachers were unable to observe true abilities. In the context of Critical Race Theory and counter-storytelling, the findings challenge mainstream deficit narratives and shed light on how Black males develop positive STEM identities despite their widespread underrepresentation in gifted and advanced mathematics and science education.

Implications of the collective studies prompted the recommendation to implement the Implicit Association Test to encourage courageous conversations regarding race in educational settings, which are frequently avoided due to teachers' discomfort. The Degrees of Equity Grading Scale was also recommended as a self-check tool to evaluate Black male equity within advanced educational programs. Such recommendations were made to create an upstander school culture of teachers who develop positive relationships with Black males and integrate relevant content with kinesthetic and scientific experimental learning opportunities to minimize underachievement and stimulate the true potential of Black males.

INDEX WORDS: Black males, gifted education, STEM identity development, underrepresentation, implicit association test, degrees of equity grading scale

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A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial
Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2023

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DEDICATION

This dissertation is dedicated to Tron and Ronald. Words cannot express how grateful I am for your love and support. I consider myself most fortunate to have both of you as brothers.

ACKNOWLEDGEMENTS

The completion of my doctoral degree would not have been possible without the financial support of University of Georgia's Educational Psychology Department Graduate Assistantship, Wells Fargo Scholars Program Scholarship, Del Jones Memorial Trust Scholarship, and Margaret C. Totty Memorial Scholarship; such generosity has allowed me to expand and diversify academic skills under the supervision of experts in the field of educational psychology.

I am especially indebted to my dissertation committee, Dr. Tarek C. Grantham (Chair), Dr. Matthew J. Madison, Dr. A. Kadir Bahar, and Dr. Kristen Bub, all of whom have served as invaluable assets to my development and provided me with unwavering support, extensive guidance, and a profound belief in my abilities. I am also extremely grateful to all of those with whom I have had the pleasure to work and/or receive mentorship: Dr. Meg Hines, Dr. Brittany Anderson, Dr. Erinn F. Floyd, Thelron Pleas, Ed.S., Dr. Jessa Luckey Goude-lock, Dr. Gregory Pennington, Dr. Danielle Carrier, Dr. Bernice J. deGannes-Scott, and Dr. Valerie B. Lee.

Most importantly, I would like to express my deepest appreciation to my entire family and close friends. My success would not have been possible without the love and nurturing of my parents, Willie L. Bullard and Augusta B. Bullard. I give my sincerest thanks to my "circle:" Dr. Tron Bullard, Dr. Rae Bullard, Ronald Sanders, PA-C, Alisha Sanders, NP, Dr. Sean Sanders, and Dr. Candice Sanders; my dearest cousin, Kenneth Pass, the Leadership Team of Viral Solutions, and those who inspired me but are no longer physically with us, Annie B. Baccus (1935 – 2019) and Dr. Mohammad Wehbi (1969 – 2020). I consider myself privileged to have far too many names and reasons to be thankful to list here.

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CHAPTER 1

INTRODUCTION

According to the National Association for Gifted Children (NAGC), gifted students are identified based on their performance or having the ability to perform at higher levels compared to their peers in one or more domains (i.e., same age, experience, environment, etc.). NAGC (2020a) also informs that gifted students need modifications to their educational experiences, come from *all* backgrounds (i.e., race, culture, economic strata), require access to appropriate learning opportunities to realize their potential, and need support and guidance to develop their talents. Gifted students' high abilities are cultivated by access to advanced materials (enrichment), fast-paced curriculum (acceleration), and higher-level instruction (advanced curriculum), which proved successful during the early developments of gifted and talented education (GATE). Dating back to the 1870s, some schools accommodated gifted learners with grade-skipping or accelerated programs, and in 1901, the first gifted school opened in Worcester, Massachusetts (Rimm et al., 2018). Historically, schools utilized the Stanford-Binet Intelligence Scale (1916) (i.e., IQ testing) to assess student intelligence (giftedness).

Lewis Terman (1877–1965) is credited as the “Father of Gifted Education” due to his revision of the Binet–Simon test (i.e., the Stanford-Binet Intelligence Scales) and his longitudinal study on gifted education from 1921 to 1956 (i.e., until his death). The original Binet–Simon tests were developed in the 1890s by Alfred Binet with the assistance of Theodore Simon to “devise a test to identify which *dull* children would not benefit from regular classes, and therefore, should be placed in special classes to receive special training” (Rimm et al., 2018, p.

4). However, Binet's main purpose was to identify students with sufficient intelligence. In 1922, following the implementation of the Stanford–Binet Intelligence Scale, Terman and his colleagues identified 1,528 gifted students (Rimm et al., 2018). The students in Terman's study were identified by their intelligence quotient (IQ), which is a number that denotes a person's aptitude or ability as compared to the statistical norm or average for their age (Braaten & Norman, 2006). Thus, Binet's intelligence testing was centered on mental age. Mental age is the concept that a child may perform intellectually higher or lower compared to the average intellectual performance of their actual chronological age (Silverman, 2009).

Terman's high-IQ students were referred to as "Termites" and generally came from privileged backgrounds (i.e., educated and financially stable families). The outcome of the identified students hinted at the ideology of heredity versus environment. Heredity (nature) is referred to as biological prescribed tendencies, whereas the environment (nurture) is referred to as external factors that influence a person's development (Dai, 2018; Grinder, 1990).

Noteworthy conclusions of Terman's (1925) findings suggested that gifted students were more productive through accelerated learning, success was influenced by the education levels and values of their families and parents, and the caveat was that the use of IQ testing restricted identification as it did not account for other elements of giftedness such as creativity (Rimm et al., 2018). More importantly, Leslie (2000) highlighted:

By 1928, Terman had 1,528 subjects between the ages of 3 and 28. As a group, they were overwhelmingly white, urban and middle class....The group was lopsided in other ways as well: there were only two African-Americans, six Japanese-Americans and one American Indian. (n.p)

Based on Terman's sample of predominantly White children from affluent backgrounds, it is reasonable to conclude that the development and measurement constructs of intelligence testing were not conducive to culturally diverse and lower socioeconomic students. Not to mention, gifted education emerged during an era when racism and the forced inferiority of minority races (e.g., Black/African American) were societal norms. For example, it is reasonable to question racial biases in assessments considering the end of slavery in the United States (1865) occurred only 56 years before the Stanford-Binet Intelligence Scale (1916) was used to assess student intelligence (giftedness). Torrance (1974) challenges the racial biases of Terman's subjects.

Terman (1974) asserted (see also Grantham, 2013):

Very few Black or disadvantaged children appeared in Terman's sample... with Terman's sample, tests that place a high premium on verbal comprehension, speed of response, and the ability to select the one and only correct answer have played determining roles in the identification of such groups. Such tests are almost always loaded with bias against the culturally different child. In a re-evaluation of the Terman study on its fiftieth anniversary, Fincher points out that there are few lower-class children of any kind in Terman's sample; 80 percent of their fathers came from the professions, semi-professions, and business. In fact, Terman limited his sample largely to urban areas, and there were few Blacks or Mexicans in the schools from which he drew his subjects.

(p. 480)

Underrepresentation in Gifted Education

Over a century after gifted education emerged, empirical research continues to show considerable disproportionate percentages of minority students identified for GATE compared to their overall enrollment (Ford, 2010; Ford et al., 2008; Frasier, Hunsaker, Lee, et al., 1995;

Naglieri & Ford, 2003). In response to the critical need to diversify the racial makeup of gifted education classes, prominent scholars, such as Dr. E. Paul Torrance (1915–2003) and Dr. Mary Frasier (1938–2005), developed alternative assessments for giftedness. Dr. E. Paul Torrance (1915–2003), the “Father of Creativity,” created an alternative method to assess giftedness in the 1960s called *The Torrance Tests of Creative Thinking* (TTCT). The TTCT consists of simple tests of divergent thinking and problem-solving skills and is scored on four scales: fluency, flexibility, originality, and elaboration (Kim, 2006). Torrance (1977) asserts that the “TTCT identify a somewhat different group of gifted students than do tests of intelligence,” as it shows very little racial and economic bias (p. 19). While IQ testing selects the top 20%, it excludes 70% of the top 20% who are equally gifted based on the TTCT (Torrance, 1977). Equally important, Grantham (2013) attested:

Torrance’s rise to prominence as a creativity scholar coincided with the resistance to desegregated schools and fueled his commitment to lead the charge in gifted education and educational psychology to address equity for Black students. Torrance’s [1974] research and advocacy helped to redefine intelligence inclusive of creativity, and Black males benefited because their intelligence could be viewed through the lens of different creative strengths versus deficit thinking related to Black people. (p. 519)

Like Torrance, Frasier called attention to the underrepresentation of students from minority populations, economically disadvantaged backgrounds, and students with limited English proficiency in GATE and advocated for equitable representation. Frasier, Hunsaker, et al. (1995) argued that giftedness can be observed through certain fundamental and identifiable traits, aptitudes, and behaviors (TABs) (see Table 1.1). TABs were designed for educators,

parents, and other authorized individuals to refer to and identify culturally diverse children at various social

Table 1.1

Definitions and General Descriptions of the 10 Core Attributes of Giftedness (Traits, Aptitudes, and Behaviors - TABs)

Trait (Core Attribute)	Definition of Aptitude	General Description of Behavior
Motivation	Evidence of desire to learn	Forces that initiate, direct and sustain individual or group behavior in order to satisfy a need or attained goal.
Communication skills	Highly expressive and effective use of words, numbers, symbols, etc.	Transmission and reception of signals or meanings through a system of symbols (codes, gestures, language, numbers).
Interest	Intense (sometimes unusual) interests	Activities, avocations, objects, etc. that have special worth or significance and are given special attention.
Problem-solving ability	Effective (often inventive) strategies for recognizing and solving problems	Process of determining a correct sequence of alternatives leading to a desired goal or to successful completion or performance of a task.
Imagination/Creativity	Produces many ideas; Highly original	Process of forming mental images of objects, qualities, situations, or relationships, which are not immediately apparent to the senses; solve problems by pursuing nontraditional patterns of thinking.
Memory	Large storehouse of information on school or non-school topics	Exceptional ability to retain and retrieve information.
Inquiry	Questions, experiments, explores	Method or process of seeking knowledge, understanding, or information.
Insight	Quickly grasps new concepts and makes connections; senses deeper meanings	Sudden discovery of the correct solution following incorrect attempts based primarily on trial and error.

Reasoning	Logical approaches to figuring out solutions	Highly conscious, directed, controlled, active, intentional, forward-looking, goal-oriented thought.
Humor	Conveys and picks up on humor well	Ability to synthesize key ideas or problems in complex situations in a humorous way; Exceptional sense of timing in words and gestures.

Note. TABS is a guide for observing high-potential children in the classroom and is utilized for anecdotal notes of evidence during the interaction; adapted from Frasier, Hunsaker, et al. (1995).

and economic levels (Frasier, Martin, et al., 1995). However, despite such efforts and a wealth of research, culturally diverse populations are still less likely to be identified for gifted education services, and therefore continue to be underrepresented (Ford, 2010; Ford et al., 2008; Wright et al., 2017). Practically, prior research has shown that Black students have been underrepresented by approximately 48% in the United States and the percentage of gifted Black males was even smaller (Ford, 2010; Ford et al., 2008; Whiting, 2006).

Gifted Education & STEM

Furthermore, STEM is a critical component of nurturing students' potential by recognizing the developmental needs, high ability, and diversity of giftedness. STEM fosters critical skills in scientific domains and plays a key role in developing students' holistic scholarly identity to meet their highest potential in academics and future careers. Common characteristics of giftedness that are essential to STEM fields include the following, but are not limited to:

- Inquisitiveness or intellectual curiosity
- Enthusiasm toward unique and/or complex interests and topics
- Creative problem-solving, imagination, and interest in applying concepts
- Ability to absorb information quickly and retain a large vocabulary

- Self-awareness, social awareness, and awareness of global issues (Arikan, 2017; Bahar, 2013; Bahar & Maker, 2011; Collins & Grantham, 2014; Renzulli, 1999; Torrance, 1965; NAGC, 2022a)

We're currently living in the 21st century, which is an era of transformation and technological advancement and requires critical thinkers and problem-solvers to sustain economic growth and innovation (Rotherham & Willingham, 2009). STEM is one of the most critical mechanisms in education. It cultivates skills that aid students' development in being employable and capable of meeting demands in a highly competitive and global society. STEM is respected for its contribution to providing learners with beneficial skills across disciplines, and the opportunity to engage in an in-depth understanding of social awareness, and community and global issues (Cramond, 2009; Frasier et al., 1997; de Raadt et al., 2004; Hines et al., 2017; Vidal, 2009). Nevertheless, Black males are underrepresented in K-12 advanced mathematics and science courses, which is reflected in their inequitable representation in STEM collegiate studies and careers.

Underrepresentation of Black Males in Gifted Education & STEM

Black students are referred for advanced education programs at disproportionately low rates when compared to their overall student population, and the percentage is even lower for Black males when compared to Black females (Flowers & Banda, 2019; Ford, 2011; Grantham, 2013; Grissom & Redding, 2016). While Black males are underrepresented in GATE and Advanced Placement (AP) mathematics and science courses, they are overrepresented in school disciplinary records and special education programs (Ford, 2010; Grissom & Redding, 2016; Strayhorn, 2008). Underrepresentation of any race or gender is unjust because it deprives the population of gifts and talents that could be used to boost economic growth. Students who

receive the most appropriate education that meets their needs are much more likely to attend and graduate college, as well as obtain STEM degrees, which lead to more fulfilling and lucrative careers, and economic mobility (Bullard & Bahar, 2023; Bullard & Grantham, 2023; Bullard et al., 2022). Gifted students are defined as those who “come from *all* racial, ethnic, and cultural populations, as well as economic strata” (NAGC, 2022b) and STEM education is notable for nurturing universal skills across disciplines that relate to gifted characteristics. Yet underrepresentation of Black males in such programs is persistent; this means that they lack “*access* to appropriate learning opportunities to realize their potential” (NAGC, 2022b) and are less likely to develop a positive STEM - identity that leads to future competitive careers (Lewis et al., 2012; Grantham, 2013).

Statement of the Problem

While I agree that racism and classism were innately rooted in the development of GATE during the 1870s, I also argue that such programs are necessary to nurture the potentialities of high-ability students currently living in the 21st century. “Gifted and talented students and those with high abilities need gifted education programs that will challenge them in regular classroom settings, and enrichment and accelerated programs to enable them to make continuous progress in school” (NAGC, 2022b, n.p). NAGC (2022c) states that students who participated in GATE were given a chance to thrive, maintained their interests over time, and continued to be involved in creative productive work after completing college and graduate school at a higher base rate of expectation. The goal of GATE is not to separate students with the intent to classify them as superior versus inferior based on race, ethnicity, and/or culture. Many GATE programs, however, require equitable improvements in providing a diverse and inclusive learning environment and acknowledging and identifying students based on multiple dimensions of

giftedness. “The National Research Center on Gifted and Talented (NRC/GT) found that 61% of classroom teachers had no training in teaching highly able students, limiting the challenging educational opportunities offered to advanced learners” (NAGC, 2022c, n.p).

Misconceptions and a lack of knowledge in cultural competence and literacy on the multidimensionality of giftedness result from inadequate to no gifted education training. Gifted training and knowledge are needed to improve gifted identification for minority students such as Black males (Frasier, 1997; Anning, 2010; Flavell et al., 2013). The concepts of gifted and STEM education are central to the scholarly and employable development of *all* students; nevertheless, Black males are underrepresented. Statistics show that Black students are least likely to be referred, enroll, and remain in advanced mathematics and science courses and pursue STEM careers (Wright et al., 2017; Davis et al., 2019; Collins & Jones Roberson, 2020). Like gifted enrollment, the percentage of Black students enrolled in AP mathematics and science is lower for Black males than for Black females (Corra et al., 2011; Davis et al., 2019). American businesses are facing a serious problem due to their inability to fill a large category of STEM jobs to meet the demands of constant economic growth (Lazio & Ford, 2019), and therefore, we can argue that the underrepresentation of minority populations contributes to this problem. It is imperative for a student’s interest in STEM to be nurtured; this can be achieved by equitable access to advanced courses, building positive relationships that encourage positive self-identity in educational settings, and presenting content and activities in creative and culturally relevant ways (Banks et al., 2001; Chen, 2013; Vu et al., 2019).

Purpose of Study

An extensive review of existing literature (chapter two) was conducted, highlighting the causes of the underrepresentation of Black students and Black males in gifted and STEM

education and the impact that underrepresentation may have on Black males' learning and identity development. The literature revealed that Black males are notoriously underrepresented in advanced educational programs such as GATE and AP or honors (advanced) courses in mathematics and science (Ford et al., 2008a; Frasier, 1997; Grantham, 2011; Davis et al., 2019; Flowers & Banda, 2019). As a result, the purpose of the first empirical study (Chapter three) is to investigate school-level factors associated with Black male gifted identification rates using statistical data from the Georgia Department of Education for the academic year 2021-2022. The findings of Bullard et al. (2022) also motivated the purpose of chapter three, which discovered that while Black students were underrepresented in Georgia's gifted education programs overall, Black boys were less likely to be enrolled in gifted education programs than Black girls.

The second component of this dissertation (Chapter four) utilizes qualitative data from the educational reflections of three high-achieving Black male physicians in order to explore potential classroom occurrences and/or teaching practices that may act as barriers to gifted and/or advanced education referrals for Black boys. Chapter four also focuses on STEM (e.g., medical profession) due to the related concepts of giftedness and STEM talent (skills) and the reported underrepresentation of Black males in advanced mathematics and science courses. Thus, qualitative data was collected on the key factors that contribute to Black males' success (e.g., STEM identity development) to make appropriate recommendations for effective curriculum programming and teaching practices. By examining both statistical and qualitative data, this dissertation obtains a rich data collection to paint a clear picture of what is happening in educational settings with Black males, resulting in inequitable representation in advanced educational programs. Thus, the overarching research question asks, "What school-level factors

and educational experiences influence Black male underrepresentation in advanced K-12 education programs?”

Overview of Studies

It is well known that historically, the United States has struggled to provide inclusive and equitable education for culturally diverse students, such as African American/Black students. Even more, prior research on Black males in K-12 education has revealed that, while they are overrepresented in special education and disciplinary records, they are underrepresented in advanced educational programs and STEM-related fields (Strayhorn, 2008; Flowers & Banda, 2019). Even though we are aware of Black male underrepresentation in advanced educational programs, it is critical to comprehend the factors that contribute to this phenomenon in educational settings. This dissertation uses Georgia Department of Education statistical data as well as retrospective interview data from prior K-12 Black male students who attended public schools that are required to provide gifted services in the states of Georgia (i.e., participants one and two) and New Jersey (i.e., participant three).

My motivation for using Georgia data, specifically in study one, stems from the state's 1994/1995 state law, which mandated multiple criteria assessment practices for GATE programs. Georgia's due process procedures were designed to be "equitable and fair" in their approach to "identifying a diverse group of talented students for gifted education programs" (Humble, 2018, p. 3). Data from Georgia schools were also collected based on Gentry et al.'s (2019) findings — Georgia received a failing grade (i.e., F) for Black equity in categories of Title 1, Non-Title 1, statewide, city, suburb, town, and rural (see Gentry et al.'s Georgia Report Card in Appendix A.1). Subsequently, based on statistical data from the Georgia Department of Education, Bullard et al.'s (2022) findings confirmed Gentry et al.'s conclusion that Black students were

underserved in Georgia's GATE program (see Bullard et al.'s data Table 1.5 in Appendix B.1). Bullard et al. added that while Black girls were underrepresented, they were slightly more likely to be identified for GATE than Black boys during the academic year of 2021 – 2022 (see Table 1.6 in Appendix C.1). While statistical data from the previous studies reveal the underrepresentation of Black males in Georgia's GATE programs, other studies have reported that such underrepresentation is a persistent problem throughout the United States (U.S.) and also seen in advanced mathematics and science courses such as advanced placement (AP) and honors courses. The qualitative data obtained from study two consist of participants who attended K-12 public schools in Georgia (southeast U.S. region) and New Jersey (northeast U.S. region), which may provide additional insight on similarities and/or differences in classroom structures and teaching practices that may act as influences of low gifted education enrollment rates for Black males nationwide.

Study One: Assessing Black Male Access to Gifted Education Programs in Georgia

The first empirical study (chapter three) is a quantitative study, using a linear regression model (multiple regression analysis) (see Table 1.2). The independent predictor variables (x) are school-level characteristics (level, total enrollment count of Black males, socioeconomic status (Title 1 and non-Title 1), and physiographic region) and the dependent variable (y) is the relative percentage of Black male gifted enrollment. I quantify the relative differences between Georgia's school-level characteristics (the predictor variables) and how such predictors impact the relative percentages of Black male gifted enrollment (the outcome variable). The purpose of study one is to determine which school-level factors that are associated with Black male gifted identification. More specifically, the research asks:

- 1) How do Black male gifted identification rates in Georgia compare across school-level education (i.e, elementary, middle, and high schools)?
- 2) How do Black male gifted identification rates in Georgia compare to varying total enrollment counts for Black males?
- 3) How do Black male gifted identification rates in Georgia compare to schools with varying socioeconomic status (Title 1 versus non-Title 1)?
- 4) How do Black male gifted identification rates compare for Georgia's schools of varying physiographical regions?
- 5) Do any of the predictors above interact?

Study Two: Where are the Gifted Black Boys? Educational Reflections of Three High-Achieving Black Male Medical Physicians

The second empirical study (chapter 4) is an extension of a preliminary qualitative study that examined the educational experiences of high-achieving Black men in medicine (STEM) who were not identified for GATE or advanced placement courses in mathematics and/or sciences (Bullard, 2022). Analogous to study one, the purpose of this article is to gain a better understanding of factors that contribute to the underrepresentation of Black males in advanced education programs and contributing factors to their STEM identity development despite Black males' widespread underrepresentation in gifted and advanced education in STEM related courses. While study one examines school-level factors from a larger scale (e.g., overall school characteristics) utilizing statistical data, this study, from a microscopic view, explores classroom experiences and teaching practices that may influence the exclusion of Black males from advanced education programs through qualitative narrative inquiry.

Drawing on narrative research that conducts retrospective experience-focused research, this study describes the educational experiences of three Black men who are now leaders in medicine but were not referred to or identified for gifted education or enrolled in STEM-related advanced courses during their K – 12 schooling. The participants of this study also attended K-12 public schools located in lower to lower-middle-class communities and are schoolwide Title I eligible. The purpose for selecting Black males in medicine stems from the assumption that if students are selected for advanced courses based on their intelligence and potential to acquire the highest levels of degrees, high-paying, and in-demand careers, then how were three high-achieving Black male physicians overlooked for or excluded from advanced educational programs? Black males are not only underrepresented in GATE but also in advanced courses in mathematics and science. In exploring this phenomenon, the data might provide a window into how the school system perpetuates social injustice and racial disparity. To explore the educational experiences of the selected participants, my research asks:

- 1) How do Black males describe their school experiences from K - 12 to college?
- 2) How do Black males describe or understand the role of a teacher in their educational trajectory?
- 3) How do Black males describe or understand key elements of their success in the medical field (STEM)?

Study Three: Addressing Implicit Bias and Utilizing the Degrees of Equity Grading Scale to Work Toward Equitable Gifted Representation of Black Males

One of the most common implications drawn from studies one and two is stereotypes of Black males, which may be influenced by implicit bias and deficit thinking in educational settings. Therefore, the third study (chapter five) is a conceptual practitioner-based article. This

article defines and promotes awareness of implicit biases within educational settings and introduces the Implicit Association Test (IAT) as a tool to stimulate courageous conversations and take action toward building equitable GATE programs for Black males. This article also introduces and recommends the Degrees of Equity Grading Scale (DEGS) as a self-check tool for school districts to evaluate program equity, motivate planning and actions toward equity, and conduct routine monitoring of Black males' equitable representation in their GATE programs. Based on the qualitative findings from study two, in terms of educational structures that contributed to their success, study three also underline the need to integrate relevant content, and kinesthetic and scientific experimental learning opportunities conducive to Black males' preferential learning styles. The primary objectives of this article are to:

- 1) Define implicit bias and the systems of cognition associated with implicit bias.
- 2) Explain implicit bias through the theoretical framework of Social Learning Theory.
- 3) Highlight previous research that addressed implicit biases in gifted education.
- 4) Introduce the Implicit Association Test (IAT) as a tool to engage in courageous conversations about race and equity in efforts to increase gifted and/or other advanced education referrals for Black males.
- 5) Introduce Degrees of Equity Grading Scale (DEGS) as an application framework to evaluate, plan, take action, and monitor the equitable representation of Black males in advanced education programs.
- 6) Emphasize the need to integrate relevant content, and kinesthetic and scientific experimental learning opportunities conducive to Black males in demonstrating their true potential.

Closing of Dissertation

The last component of this research is a comprehensive summary of findings from the previous studies mentioned above. This section briefly discusses the history of Black students' underrepresentation in gifted education as well as STEM education (i.e., K-12 advanced mathematics and science courses), and the unique challenges that marginalize Black males. The primary purpose of each study, methodologies, data collection, and major conclusions are then reiterated. The collective implications of

Rationale and Contribution to Knowledge Base

This research contributes to studies on gifted education and STEM talent development (i.e., fostering scientific skills) that are central to the social and emotional needs, and cognitive processes involved in learning for culturally diverse students, particularly Black males (Anderson & Coleman-King, 2021; Anderson et al., 2022; Bullard & Grantham, 2023; Collins & Jones Roberson, 2020; Ransaw, 2016; Warren, 2013). Findings inform understanding of teachers' perceptions and/or behaviors that impact underrepresented students' identification as gifted and/or advanced learners, interest in STEM, and development of scholar identity. The research results can help to determine policies, practices, and instructional strategies that promote awareness of implicit bias and commitment to multicultural education and mentorship to underserved student groups. The findings of this study can also encourage future research that assesses current trends in equitable enrollment in advanced education programs and STEM, such as AP courses, for Black males as well as students of all races/ethnicities and gender/non-gender identities. This includes tools that stimulate conversation about race and educational equity and motivate educational stakeholders to perform self-checks and maintain accountability for evaluating equity levels of gifted and advanced programming (Bullard et. al, 2022; Grantham et

al., 2023). Analyzing school factors that may influence Black male enrollment in GATE assists in determining how well educational policies and practices work to provide diverse and inclusive learning environments in advanced education programs.

Additionally, I will expand on this dissertation by conducting future research focusing on equity-focused evaluations of gifted and advanced education programs, and studies related to educational and social psychology with the overarching objective to understand how educational social structures influence students' behavior and mental process (e.g., identity development). Particularly, studies that examine fostering scholar identities among underserved students who are frequently threatened by the consequences of historical systemic racism that pervades the classroom. This is especially true for students from low-income families and underrepresented racial groups. I also plan to examine these issues through historical social movements to inform educational reforms. Future studies will continue to utilize relatable critical readings of philosophical and analytical approaches shaped by a variety of theories that shed light on how societal norms hold minority groups to low standards and create barriers to equitable educational. Educational inequities require educators to question their thoughts and actions, and how their teaching methods impact students' self-efficacy and achievements. Hence, such theoretical frameworks also inform how implicit biases and lack of social and emotional support can have a negative impact on a student's motivation and sense of self, and therefore aid in making recommendations for addressing implicit biases and implementing practices to promote equitable and inclusive learning environments. To that end, my current and future research will allow me to connect with other emerging scholars, as well as demonstrate my commitment to positively impacting the educational experiences of marginalized students.

Research Design Outline

Two separate empirical studies were conducted to answer the overarching research question, “What school-level factors and educational experiences influence Black male underrepresentation in gifted and advanced K-12 education programs?” The first study uses statistical data to analyze school-level factors in the state of Georgia that influence Black male gifted education (see Table 1.2). The second study explores the retrospective educational experiences of high-achieving Black men (see Table 1.3). By analyzing data from the semi-structured interviews, study two provides insight into how these individuals may have been overlooked or excluded from gifted and advanced education during their K-12 schooling. Overall, studies one and two of this dissertation provide awareness of school-level factors, classroom structures, and teaching practices that influence referrals, identification, and/or enrollment of Black males in competitive advanced education programs. Drawing from the implications of studies one and two, the third study makes recommendations to an audience of educational stakeholders such as teachers, administrators, and policymakers in an effort to address implicit biases and utilize self-check tools to evaluate, monitor, plan, and take action toward equitable representation of Black males in gifted and/or advanced STEM programs (see Table 1.4).

Table 1.2

Study One: Research Design Outline

Assessing Black Male Access to Gifted Education Programs in Georgia	
Purpose	To determine school-level factors associated with Black male gifted identification rates in the state of Georgia.
Research Questions	1) How do Black male gifted identification rates in Georgia compare across school-

level education (i.e., elementary, middle, and high schools)?

- 2) How do Black male gifted identification rates in Georgia compare to varying total enrollment counts for Black males?
- 3) How do Black male gifted identification rates in Georgia compare to schools with varying socioeconomic statuses (SES) (Title I versus non-Title I)?
- 4) How do Black male gift identification rates compare for Georgia's schools of varying physiographical regions?
- 5) Do any of the predictors above interact?

Data Collection Sources

Georgia Department of Education Data Collection, academic year 2021-2022

Method/Data Analysis

Quantitative methodology; multiple linear regression analysis

References

Bullard et al., 2022; Ford et al., 2008; Gentry et al., 2019; Grantham, 2011; Grantham et al., 2023; McBee, 2010; Peters, 2021.

Note. This table outlines the quantitative research design of part one of the dissertation.

Table 1.3

Study Two: Research Design Outline

Where are the Gifted Black Boys? Educational Reflections of Three High-Achieving Black Male Medical Physicians

Purpose

To explore retrospective educational experiences of three high-achieving Black males in medicine (STEM) from low to lower-middle-class communities who were not referred for gifted education and/or advanced courses in mathematics and science as a means to identify classroom structures and/or teaching practices that influence Black male gifted and advanced identification and/or enrollment rates. To investigate contributing factors to their success in the medical profession (i.e., positive STEM-identity development) in aiding recommendations for effective teaching practices and curriculum programming.

Research Questions	<ol style="list-style-type: none"> 1) How do Black males describe their school experiences from K – 12 to college? 2) How do Black males describe or understand the role of a teacher in their educational trajectory? 3) How do Black males describe or understand key factors that contribute to their success in the medical field (i.e., STEM)?
Conceptual/Theoretical Framework	<p>In the context of Critical Race Theory (CRT) in Education, examines the potential causes of underrepresentation in gifted and advanced education programs due to historical and persistent trends of low referrals/enrollment rates of Black students and Black males.</p>
Data Collection Sources	<p>Retrospective counter storytelling from three participants chosen for case study research; common identifiers: race (Black), gender (male), the proximity of age (30 – 35) for generation-y connection [millennials], K – 12 gifted identification status (not referred or identified), first-generation college graduates, graduate-level education (medical school), and current profession (Medical Physician and/or Physician Assistant).</p>
Method/Data Analysis	<p>Qualitative methodology, case study research; semi-structured open-ended interviews, retrospective narratives inquiry, critical discourse analysis and inductive and deductive reasoning.</p>
References	<p>Bullard, 2022; Davis et al., 2019; Flowers III & Banda, 2019; Ford et al., 2001; Given, 2008; Grantham, 2011; Grantham, 2013; Grissom & Redding, 2016; Ladson-Billings & Tate, 1995; Siegle et al., 2015; Torrance, 1987; Winsler et al., 2013; Wright & Ford, 2019.</p>

Note. This table outlines the qualitative research design of part two of the dissertation.

Table 1.4*Study Three: Outline of Conceptual/Practitioner-Base Article*

Addressing Implicit Bias and Utilizing the Degrees of Equity Grading Scale to Work Toward Equitable Gifted and Advanced Education Representation of Black Males	
Purpose	To define and promote awareness of implicit biases within educational settings and introduce the Implicit Association Test (IAT) as a tool to stimulate courageous conversations and take action toward building equitable gifted and advanced education programs for Black males, as well as introduce the Degrees of Equity Grading Scale (DEGS) as a self-check tool for school districts to evaluate program equity, motivate planning and actions toward equity, and conduct routine monitoring of Black males' equitable representation levels in their gifted education programs.
Objectives	<ol style="list-style-type: none"> 1. Define implicit bias and the systems of cognition associated with implicit bias. 2. Explain implicit bias through the theoretical framework of Social Learning Theory. 3. Highlight previous research that addressed implicit biases in gifted education. 4. Introduce the Implicit Association Test (IAT) as a tool to engage in courageous conversations about race and equity in efforts to increase gifted referrals for Black males. 5. Introduce Degrees of Equity Grading Scale (DEGS) as an application framework to evaluate, plan, take action, and monitor the equitable representation of Black males in gifted and advanced programs. 6. Emphasize the need to integrate relevant content, and kinesthetic and scientific experimental learning opportunities conducive to Black males in demonstrating their true potential.

Conceptual/Theoretical Framework	In the context of SLT, guides understanding of how cultural and racial stereotypes are activated by learning from/observing mainstream deficit beliefs and behaviors, which innately cause implicit biases.
Data Collection Sources	Empirical findings from chapters three and four on the school level factors and educational experiences that influence gifted identification rates of Black males. Previous research on racial disparities within gifted education programs, teachers' implicit biases, and teacher professional development on the importance of inclusive and equitable programming and curriculum (e.g., relevant/unbiased content and differentiated learning).
Method/Data Analysis	Conceptual research; develops logical arguments around the topic of inequitable representation in gifted/advanced education programs; provide practical knowledge, ideas, and recommendations to improve teaching practices and program/curriculum planning.
References	Anderson et al. (2022); Bandura (1977); Banks (2008); Bullard et al. (2020); Bullard et al. (2022); Ford et al. (2011); Grantham (2011); Grantham (2013); Grantham et al. (2023); Grissom & Redding (2016); James (2012); Kahneman (2011); Moule (2009); Singleton & Hays (2008); Staats (2016); Yen et al. (2018)

Note. This table outlines the objectives of the practitioner-based articles that draw from common implications that emerged from studies one and two.

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APPENDIX A.1

GEORGIA REPORT CARD

Gifted Education in the United States

GEORGIA (GA) REPORT CARD



LAW The state of Georgia **mandates** by law **identifying and serving** "gifted students." This mandate is **fully funded**.

Opportunity to Be Identified as Gifted		
	Grade or Rank	Notes and Explanation
ACCESS	Access to Identification Rank	A 1st 95.61% of students attend a school that identifies students with gifts and talents Rank among 50 states and DC in access
	Equity of Access Between Title I and Non-Title I Schools Rank	F 41st Students in Title I schools are identified at 42% of the rate of those in Non-Title I schools (7.37% vs. 17.49% yields a ratio of 0.42 between Title I and Non-Title I schools).
	Equity of Access by Race	A 1.00 AIAN The ratio of race access to general access in schools that identify indicates whether students proportionally attend schools that identify. Ratios close to or greater than 1.00 means good access, so underrepresentation is not a function of lack of access.
		A 0.97 Black
		A 1.02 Latinx
	A 1.01 NHPI	

	Underserved Groups (in schools that identify)	Category	Statewide	City	Suburb	Town	Rural
			Grade—RI	Grade—RI	Grade—RI	Grade—RI	Grade—RI
EQUITY	AIAN Equity (n=3,391)	Overall	C -0.86	D -0.81	B -0.91	C -0.87	F -0.72
		Non-Title I	D -0.82	F -0.69	D -0.83	F -0.69	D -0.82
		Title I	C -0.86	C -0.87	A -1.02	A -0.95	F -0.57
	Black Equity (n=605,047)	Overall	F -0.50	F -0.46	F -0.53	F -0.35	F -0.47
		Non-Title I	F -0.53	F -0.50	F -0.52	F -0.30	F -0.58
		Title I	F -0.62	F -0.57	F -0.77	F -0.38	F -0.46
	Latinx Equity (n=249,127)	Overall	F -0.49	F -0.51	F -0.45	F -0.49	F -0.53
		Non-Title I	F -0.48	F -0.49	F -0.47	F -0.42	F -0.49
		Title I	F -0.58	F -0.62	F -0.59	F -0.53	F -0.57
	NHPI Equity (n=1,895)	Overall	C -0.88	F -0.70	B -0.92	A -1.07	C -0.86
		Non-Title I	D -0.80	D -0.80	F -0.78	A -1.32	F -0.70
		Substantial population Title I	A -1.04	F -0.76	A -1.27	A -1.07	A -1.01

MISSINGNESS **Students Missing From Gifted Education Identification: 23% at the Lower Boundary. Grade: Fail. Rank: 10**
 Georgia identified 189,320 students as gifted in 2016. Statewide, the number of missing students in schools that do not identify and in schools that underidentify ranges from 56,848 to 125,737, (23% to 40%) with most of these missing students coming from Title I schools and from underserved populations. For example, 34,285 Black children are identified, with 38,969 to 80,004 (53% to 70%) missing. These numbers are detailed in Table 7 in the accompanying state report.

SUMMARY **Key Findings and Recommendations**
 With a fully-funded mandate, Georgia is first in access among all states, but in the bottom 10 for equity between percentages of students in Title I and Non-Title I schools who are identified for gifted services. Additional inequity exists for children of color, with low RIs across Title I and Non-Title I schools for Black and Latinx youth. With about 34,000 of nearly 600,000 Black youth identified, compared to 116,000 of about 700,000 White youth or RIs of .50 and 1.47 respectively, White youth are 3 times more likely to be identified with gifts and talents than are Black youth in the state of Georgia. This, considered with the inequity between Title I and Non-Title I schools, clearly indicates that Georgia needs to reform its policies and procedures to address racial and poverty equity issues in identification and subsequent programming.

AIAN=American Indian or Alaska Native, NHPI=Native Hawaiian or other Pacific Islander

Gentry, M., Gray, A., Whiting, G. W., Maeda, Y., & Pereira, N. (2019). *Access denied/System failure: Gifted education in the United States: Laws, access, equity, and missingness across the country by locale, Title I school status, and race*. Report Cards, Technical Report, and Website. Purdue University: West Lafayette, IN; Jack Kent Cooke Foundation: Lansdowne, VA.



APPENDIX B.1

GEORGIA GIFTED EDUCATION ENROLLMENT

Table 1.5*Degree of Equity for Georgia Gifted Education Enrollment, 2017 – 2018*

Race	Student Enrollment		Equity Representation Level				Description
	TE%	GTE%	EI	Min.%	Diff.	DEG	
AI/AN	0.20	0.17	0.40	0	0	82 (B-)	Slightly Above Expected Min.
AS	4.09	9.94	0.82	3	7	148 (A+)	Profoundly Over Equity Level
B/AA	36.72	17.84	7.34	29	-12	67 (D+)	Inequitable
HP	15.58	8.02	3.12	12	- 4	68 (D+)	Inequitable
PI/NH	0.10	0.09	0.02	0	0	84 (B)	Moderately Above Expected Min.
TMR	3.67	4.16	0.73	3	1	94 (A)	Excellent Equity
WH	39.64	59.78	7.93	32	28	110 (A+)	Moderately Over Equity Level

Note. American Indian/Alaska Native (AI/AN), Asian (AS), Black/African American (B/AA), Hispanic (HP), Pacific Islander/Native Hawaiian (PI/NH), Two or more races (TMR), White (WH); Total enrollment (TE), Gifted total enrollment (GTE), Equity index (EI), Minimum (Min), Difference (Diff), Degree of Equity Grade (DEG); Adapted from Grantham et al. (2023) and Bullard et al. (2022).

APPENDIX C.1

BLACK FEMALE AND MALE GIFTED ENROLLMENT FIGURES

Table 1.6*Overview of Gifted Enrollment for Black Female and Male Students in Georgia's Top Five Largest School Districts, 2017 – 2018*

District	Black Female Enrollment			Representation Level			Description
	TE%	GTE%	EI	Min%	Diff.	ELG	
100	15.64	11.06	3.13	13	-1	76 (C)	Moderately Below Expected Min.
200	15.34	7.51	3.07	12	-5	67 (D+)	Inequitable
300	30.26	21.1	6.05	24	-3	76 (C)	Moderately Below Expected Min.
400	20.93	8.74	4.19	17	-8	64 (D)	Severely Inequitable
500	34.35	35.18	6.87	27	8	89 (B+)	Significantly Above Expected Min.

District	Black Male Enrollment			Representation Level			Description
	TE%	GTE%	EI	Min%	Diff.	ELG	

100	16.27	9.01	3.25	13	-4	70 (C-)	Severely Below Expected Min.
200	15.61	6.27	3.12	12	-6	63 (D)	Severely Inequitable
300	31.62	16.27	6.32	25	-9	68 (D+)	Inequitable
400	21.00	6.13	4.20	17	-11	59 (F)	Egregiously Inequitable
500	35.13	27.88	7.03	28	0	80 (B-)	Meets Expected Min.

Note. Total Enrollment Percentage (TE%), Gifted and Talented Enrollment (GTE%) [TE% and GTE are rounded to the nearest place value (hundredths, 2 decimals)], 20% Allowance Equity Index (EI), Minimum (Min.) Equity Range Percentage, Difference (Diff.), and Degree of Equity Grade (DEG), with the corresponding percentage, are based on data findings; Adapted from Grantham et al. (2023) and Bullard et al. (2022).

CHAPTER 2

LITERATURE REVIEW

Despite decades of research highlighting the underrepresentation of Black males in gifted education, many researchers believe that little progress has been made toward equitable access (Ford, 2012; Moore & Flowers, 2012; Wright et al., 2017; Young & Young, 2022). While some researchers attest that implicit bias plays a significant role in discriminatory selections for gifted referrals, there are additional contributing factors to consider (Grissom & Redding, 2016; Vega & Moore, 2018; Pearman & McGee, 2022). Equally important, STEM is an important component in developing students' potential through recognizing developmental needs, high ability, and giftedness variety (Bullard & Bahar, 2023; Bullard & Grantham, 2023; Collins & Grantham, 2014; Collins & Jones Roberson, 2020). Nonetheless, Black males' inequitable representation in STEM education, such as advanced placement (AP) courses in mathematics and science, is comparable to their underrepresentation in gifted education (Collins & Jones Roberson, 2020; Davis et al., 2019; Flowers & Banda, 2019; Moore & Flowers, 2012; Wright et al., 2017).

The review of literature not only seeks to provide a deeper understanding of the causes of underrepresentation in gifted and STEM education, but it also seeks to inform why there is a sense of urgency and awareness of the negative consequences of underrepresentation on the academic and future career outcomes for Black males. Thus, this section aims to introduce key ideas that help us understand the gifted identification (or lack thereof) of Black male youth and their participation in AP mathematics and sciences courses. The following subsections include

previous studies that inform readers of the causes and impact of Black males' underrepresentation in gifted and STEM education. Noteworthy, while some studies address the underrepresentation of all minority students (e.g., Black, and Hispanic), the concepts are still applicable to Black male youth.

Causes of Underrepresentation in Gifted Education

Access and Attitudes

In addressing the underrepresentation of minority students, Frasier (1997) argued that “there is no logical reason to expect that the number of minority students in gifted programs would not be proportional to their representation in the general population” (Frasier, 1997, p. 498). In raising awareness of the then and now nationally recognized problem with gifted identification and education as it pertains to low minority representation, Frasier provided four major problems with gifted identification: 1) access, 2) assessment, 3) accommodations, and 4) attitudes (see Table 2.1). In particular, Frasier’s section on attitudes offered greater insight into how students of color have limited access to gifted education programs. The major issues with teacher and educational personnel attitudes are the belief that underserved populations are incapable of engaging in or are interested in intellectual endeavors and common descriptions of gifted students cause a less-than-positive attitude towards minority students for consideration as gifted.

Frasier also informed that limited or inequitable access to gifted education programs is a byproduct of low expectations, a low rate of gifted referrals, teacher inability to notice gifted traits of minority students, and minimal regard for cultural differences in the classroom. Frasier concluded that the solutions that were developed actually hindered the progress in resolving gifted identification, contending that minority students did not fare well with assessments due to

cultural and linguistic differences. For these reasons, Frasier expressed concerns about educators' unidimensional view of giftedness and argued the need to reframe the process of gifted identification to assess students with a multidimensional approach and recommends changing one's views about IQ testing and creating new assessments that are relevant to cultural differences.

Table 2.1

Frasier's Four-A Framework of the Causes of Underrepresentation in Gifted Education

Cause of Underrepresentation	Associated Barriers
Access	<ul style="list-style-type: none"> • Low expectations due to culturally and linguistically diverse students • Low rate of referral by gifted minority parents • Inability of educators to identify gifted behaviors of minority students • Minimal regard for culture and environment, which impacts teacher referral
Assessment	<ul style="list-style-type: none"> • "Over-reliance" (excessive dependence or trust) to standardized tests • Testing instruments and practices developed in the Euro-American tradition that are not relevant to minorities • Pervasive bias – "more reflective of racial discrimination than low intelligence."
Accommodation	<ul style="list-style-type: none"> • Program designs and curriculum that do not reflect diversity in culture and language • Remedial and compensatory strategies to help minorities "fit" into the form • Accommodations made without consideration of the needs of minority students to develop abilities valued by more than one culture
Attitude	<ul style="list-style-type: none"> • Concerns that the increase in gifted students will outweigh resources • Fears of demands from parents of children not from special populations

-
- Belief that minority students are incapable of engaging in or are interested in intellectual endeavors.
 - Common descriptions of gifted student cause a less-than positive attitude towards minority students (501).
-

Note. Adapted from Frasier (1997).

Income Disparity, Lack of Minority Teachers, & Insufficient Gifted Identification Methods

Morgan (2020) conducted a conceptual study in which the author offered various reasons for the underrepresentation of students of color in gifted education in the United States and provided examples from Florida and Virginia because gifted education practices and policies vary by state. The author also discussed low-income students because families of color (minorities) typically earn significantly less than White families (Badger, 2017). Morgan claimed that, in addition to implicit bias, other causes of underrepresentation include the following: a) income inequality, b) a lack of minority teachers, c) insufficient identification methods, and d) harsh living conditions that contribute to poor nutrition. Wealth disparities contribute to gifted education underrepresentation because wealthier parents are more aware of the identification and appeal processes and can afford the costly expenses that may accompany assessments. For example, when their children are too young to take the tests offered by the Florida school district, high-income parents can afford to pay for IQ tests. Morgan added that if a wealthy child is denied gifted identification in Virginia, wealthy parents can appeal by paying a high fee for a psychologist reassessment.

Equally important, Morgan (2020) advised that “even when students of color meet crucial requirements for gifted services, they are generally less likely to be identified as gifted, in part because the process involves teacher referrals” (p. 209). Black and Hispanic teachers are more likely to refer minority students for GATE because they are more aware of diverse gifted

characteristics seen in same-race students; however, such referrals are uncommon due to a shortage of Black and Hispanic teachers. Despite research urging the need for more minority teachers, the increased hiring efforts have not kept up with the growth of Black and Hispanic students. In addition to teacher referrals, Morgan identified the act of relying solely on achievement tests as an inadequate identification method. “Many low-income, high-ability students perform poorly on tests as a result of out-of-school factors and do not get placed in gifted education even though they have above-average learning ability” (Morgan, 2020, p. 210). Out-of-school factors include income disparities; for example, minority families earn less than White families, making it more difficult for Black students to participate in after-school enrichment programs and benefit from tutoring services.

Moreover, income disparities are linked to harsh or less stimulating living environments (Morgan, 2020). Morgan cited Olszewski-Kubilius and Corwith (2018), Burrows et al. (2017), and Sparks (2015), who argued that low-income students are more likely to eat less nutritious food and have poor literacy development. Low energy levels caused by poor nutrition can have a negative impact on optimal learning. The barrier of low energy and poor literacy is often seen in students' grades and test scores. This is significant because, despite the use of alternative methods such as assessing talent and creativity, academic ability and achievement tests are the main methods for gifted identification. For the reasons stated above, Morgan emphasized the importance of considering out-of-school factors that may impede the identification of giftedness in students of color. The author suggested universal screening as a potential solution to narrow the gap between students of color and gifted education. The article regarded universal screening as a “powerful way to reduce the bias associated with selecting low-income students for gifted

education” because it is “based on testing *all* students rather than relying on a teacher or parent recommendation” (Morgan, 2020, p. 210 - 211).

Inadequate Teacher Training on Giftedness and Gifted Education, & Preconceived Beliefs

Over 20 years prior to Morgan’s (2020) article, Ford (1998) identified similar barriers to equitable access to GATE. Like Morgan (2020), Ford found inadequate identification methods to be a source of underrepresentation but added that students of color were frequently taught by less qualified and/or inexperienced teachers. Ford referenced gifted education research (Archambault et al., 1993; Karnes & Whorton, 1991) that found teachers were less effective and accurate in identifying students who needed gifted education services than parents. Not to mention that, regardless of providing gifted education services, many teachers did not receive professional development in gifted education, many states did not require gifted certifications or endorsements, and gifted education training was optional in some states. Likewise, Donovan and Cross (2002) argued that a lack of training on gifted identification strategies led to teacher discretion in the referral process and hampered gifted identification for Black students. Berman et al. (2012) conducted a primarily qualitative study to determine how in-service and pre-service teacher candidates and education students perceived gifted and talented (GT) learners and their feelings about teacher training tailored to the nature (e.g., characteristics) and needs of GT learners. Pre/post-course questionnaires were used to collect empirical data on participants' existing beliefs and assumptions about GT learners at various stages of teacher development.

In short, Berman et al.’s results indicated that teachers’ preconceived beliefs about GT learners guided their willingness and teaching methods more than specialized training on giftedness. Also, the data suggested that some teacher education programs were less informative; for example, Berman et al. highlighted a direct quotation from an in-service teacher enrolled in a

master's degree program, which asked, "...Why didn't I learn about this in my teacher education program? (Master's degree level student, 2010) (2012, p. 19). Relative to Frasier (1997), researchers find that "attitudes" or preconceived beliefs are often inflexible. Berman et al.'s findings support studies like Donovan and Cross (2002) because the data show that it is "painfully obvious that the vast majority of general educators have little (if any) insight about the needs of GT learners in their classroom" (2012, p. 19). The data also revealed that teachers' judgments on giftedness (e.g., gifted characteristics) were primarily influenced by their preconceived beliefs, lending support to Grissom and Redding's (2016) findings on implicit bias and the lack of teacher referrals for Black students. Based on these findings, Berman et al. urged their readers that greater efforts from gifted education programs are needed. "Teacher education programs must include coursework and experiences focusing on the nature and needs of GT learners if we expect to meet these learners' needs in common classroom settings" (Berman et al., 2012, p. 24). It goes without saying that general and special education teachers, not just gifted education teachers, must be educated on giftedness and the multidimensional nature of giftedness (Frasier, 1997). Hence, improved efforts within gifted education programs can address the underrepresentation of Black students caused by implicit biases and dominant culture-centered notions of gifted characteristics.

Implicit Bias

Adding to awareness of implicit bias and how it translates into the classroom, Galman et al. (2010) conducted a qualitative study to examine three elementary-level teachers' treatment of antiracist pedagogy. Galman et al.'s qualitative data included (1) semi-structured focus group data from teacher education students and alumni and (2) multifaceted accounts of teachers' own beliefs and practices as teacher educators [self-study data]. Relative to the need to address

implicit bias, Galman et al. findings revealed that beliefs, attitudes, and practices perpetuated and reinforced White racial knowledge by affirming White non-participation and non-engagement in capacities with White teacher educators and permitting missed opportunities to address racism in the classroom by “silencing race talk.” These findings are significant because it suggests that the concern for the comfort of White teachers in training took priority over the need to prepare a predominantly White middle-class, female teaching force to effectively work with diverse populations of students.

In addition, Moule (2009) argued that implicit bias is a mechanism that shapes teacher expectations of student achievement (see also Staats, 2016). To explain the phenomenon of implicit bias in education, Moule shared personal, yet common, experiences of unconscious bias that result to unintentional racism directed toward Black students. Moule described moments in which unconscious bias became visible, birthing racist acts, even if such acts were not premeditated. For example, Moule explained that when an African American is spotted by a stranger in a public place, the stranger may check for their wallet or move their purse when the African American approaches; such action is a reflection of behavior guided by implicit biases and stereotyping (see also Vinacke, 1957). The purpose of Moule sharing daily accounts was to caution that unconscious bias extends from random public places with strangers to long-term relationships within the classroom such as teachers and students, teachers and other educators, and teachers and parents. Similar to stereotyping behavior among strangers, teachers may implicitly avoid close relationships with Black students and/or have preconceived beliefs that Black males are troublemakers or incapable of achieving academic success in rigorous educational settings.

Implicit Bias Towards Working-Class Parents of Culturally Diverse Students

Not only is implicit bias imposed on culturally diverse students, but also toward working – class parents of such students. For example, Posey (2012) informed that middle and upper-middle-class parents were more likely to heighten PTA budgets, volunteer at school functions, and exploit their political and social capital connections/networks to acquire adequate resources for their children. As a result, this generates preferential treatment toward White-middle class parents and their children, whereas assumptions or “biases” are shaped toward minority working-class parents and their children. The issues underlined in Posey’s article shed light on how ethnic and racial stereotypes are further developed from unconscious bias among social class between teachers and working-class parents of culturally diverse students. As a result, if implicit biases lead to negative judgments of parents of culturally diverse students, it is vital to investigate how well teachers communicate with parents about giftedness, gifted education, and their right to refer their child for gifted education.

Furthermore, Greene (2013) examined the roles of minority working-class parents as it relates to their beliefs in child-rearing methods and educational support and advocacy for their child(ren). Despite popular opinion, the findings revealed that minority working-class parents *do not* limit their involvement in supporting their children. In contrast to Galman et. al. (2010), which encouraged teachers to self-access their own beliefs and perceptions and to engage in race talk, Greene urged educators to talk with minority working-class parents. Greene stated that such conversations could aid in understanding parents' beliefs (e.g., concerted cultivation versus natural growth development), values, lifestyles, and personality traits, rather than drawing conclusions without communicating with parents. As noted by Posey (2012), communication would allow teachers to address and hopefully eliminate biases that tend to result in preferential

treatment for White middle-class parents, and thereby, develop partnerships to inform of students' interests and abilities, and likely observe an increase in students' academic performance.

Low Expectations from Teachers & Educational Personnel

Additionally, considering educational research on low expectations and biases toward Black students, Gershenson et al. (2016) sought to investigate how teachers form expectations and whether they are systematically biased. The authors performed a quantitative study (i.e., descriptive linear regressions) using data from the Education Longitudinal Study of 2002 (ELS), which was conducted by the National Center for Education Statistics (NCES). To identify the effect of student-teacher demographic mismatch on teachers' expectations, nationally representative survey data were used containing two teachers' expectations for each student's educational attainment. In response to the question of what causes the formation of public school teachers' expectations, the findings were troubling yet unsurprising. Gershenson et al. stated that student-teacher demographic mismatch affected academic achievement, and by "novel causal evidence," the demographic mismatch also affected teachers' expectations for students' long-run educational attainment. According to the authors, teachers consistently had lower expectations for Black students' educational attainment than for White students. However, Black teachers had 30-40% higher expectations for Black students than non-Black teachers. "For example, relative to teachers of the same race and sex as the student, other-race teachers were 12 percentage points less likely to expect Black students to complete a four-year college degree" (Gershenson et al., 2016, p. 222). Thus, non-Black teachers of Black students had lower expectations than Black teachers. The disadvantages of low teacher expectations primarily impede Black students, especially Black males and math teachers (Gershenson et al., 2016). Because K-12 teachers are

crucial in shaping students' attitudes and motivation toward academic achievement, low expectations have a malleable impact on students' decision-making. As a result, Black students are more likely to underestimate their potential and, therefore, aim low, assuming that higher, more challenging goals are unattainable.

While the articles above discussed underrepresentation due to the causes of teachers' actions and students' out-of-school factors, C. B. Floyd (2022) examined organizational barriers to equitable gifted education programs (i.e., underrepresentation in GATE). Utilizing qualitative research, Floyd conducted semi-structured interviews and narrative inquiry with three Virginia gifted education coordinators. The data collected aided the author's understanding of practice implementations in 14 districts that improved racial proportionality in gifted education programs. However, the author argued that "gifted education coordinators in those districts improving in racial proportionality would have needed to interpret for themselves why underrepresentation of children of color in their gifted programs existed in the first place" (C. B. Floyd, 2022, p. 5). Forthcoming, I discuss two of Floyd's key findings in response to the research question, "what perceptions did gifted education coordinators hold concerning the underrepresentation of historically marginalized children?" Comparable to Elhoweris et al. (2005), McBee (2006), and Gershenson et al. (2016), Floyd found that educational personnel held low expectations for students of color. Low expectations were demonstrated through actions such as denying access to courses that would have aided in college acceptance and/or hostility toward high-achieving children of color. What's more, gifted education was a low priority in the districts chosen. The district-wide statement, for example, demonstrated GATE's low priority by illustrating a philosophical structure that lacked a vision for gifted education and commitment to equitable access for children of color.

Underrepresentation of Black Students in Rural Gifted Education

Poverty, Remote/Isolated Location, & Limited Access to Resources. In further probing the causes of GATE's underrepresentation of Black students, it is necessary for this study to review the literature on underrepresentation in rural gifted education programs. Hence, the fourth research question of this study asks, "how do Black male gifted identification rates compare for Georgia's schools of varying geographical regions?" While some Georgia regions consist of large school districts and cities in the greater Atlanta area, some areas are considered rural. In conjunction with the relevance of the research question, we must be cognizant that the underrepresentation of Black students occurs in all demographic communities (i.e., urban, suburban, and rural). Davis et al. (2020a) expanded and reexamined their previous work to delineate various factors that create challenging circumstances for Black gifted students as they seek to access specialized program services and coursework that match their advanced intellectual abilities. In general, the findings showed that equity barriers to rural gifted education programs for Black students were similar to those in urban GATE programs, with a few key differences. The authors found that poverty was a significant factor in rural Black students' underrepresentation in GATE, which was exacerbated by a lack of qualified educators available to meet the needs of all rural students. This finding is consistent with comparable past and current published research such as Ford (1998) and Morgan (2020). As several gifted education studies have shown (E. F. Floyd et al., 2008; Berman et al., 2012; Gershenson et al., 2016; Grissom and Redding, 2016), educators' lack of training, implicit biases, and low expectations often act as barriers to equitable opportunities for Black students to showcase their abilities and thereby overlooked for gifted programming and services.

Furthermore, Davis et al. (2020a) stated that there are some key differences in GATE's equity barriers that are unique to the characteristics of rural schools. Borrowing from Davis et al. (2020b), the authors provided a table to compare the educational, social, and cultural characteristics between urban and rural schools (see Table 2.1). The key differences identified were a) geographically remote, b) physical isolation from a concentrated group of academic and intellectual peers, c) limited access to technology, d) the historical legacy of segregated/low resource schools, e) distance from concentrated enrichment resources and f) distance from resources of higher education (Davis et al., 2020b). For example, Ford (1998) and Donovan and Cross (2002) categorized a lack of training or less qualified and/or inexperienced teachers as a cause for the underrepresentation of Black students in GATE. However, Davis et al. added that unique to rural schools, teachers lack access to specialized training about the nature of gifted and talented learners even more so due to remote communities. The impact on rural students was often reflected in feelings of isolation such that being geographically disconnected from a concentrated culturally and socially enriched community and common peer groups can hinder rural students' academic performance. Additionally, being isolated and disconnected from urban area resources may limit students' access to cultural and enrichment opportunities that could greatly enhance their educational experiences, including technology. Rural schools tend to have

Table 2.2

Educational, Social, & Cultural Characteristics of Urban Versus Rural Schools

Characteristic	Urban	Rural
Preponderance of low-performing schools	X	X
Geographically remote		X
Cultural discontinuity between teachers and students	X	X

Physical isolation from a concentrated group of academic and intellectual peers		X
Limited access to technology		X
Limited access to highly trained teachers	X	X
Limited family engagement with schools	X	X
Presumption of low intelligence	X	X
Low teacher expectations	X	X
Historical legacy of segregated, low-resource schools		X
Limited availability of social and academic enrichment	X	X
Distance from concentrated enrichment resources (e.g., arts, corporate, sciences)		X
Distance from resources of higher education		X
Economically impoverished communities	X	X
Low educational attainment of parents	X	X

Note. Adapted from Davis et al. (2020a) and Davis et al. (2020b).

Limited access to technology, which is detrimental because “technology helps connect students in rural schools with the world outside their isolated communities” and online, and distance education programming has the potential to provide enhanced curricula, academic peer grouping, and access to highly trained classroom teachers” (Davis et al., 2020a, p. 92; Hébert, 2001; E. F. Floyd et al., 2008).

Analogous to Davis et al. (2020a), Hemmler et al. (2022) sought to understand the underrepresentation of Black students in rural gifted education programs. The authors used logistic regression to analyze data from the identification process in local district-led identification strategies and study-led methods. According to Hemmler et al., the study-led process was “designed to increase equitable access to gifted education by administering a universal screening assessment, collecting teacher ratings for every student, and interpreting

scores using local norms” (2022, p. 1). Noteworthy, the districts selected for this study were 11, even when CogAT scores of White students were slightly higher than Black students, teacher ratings for White students were much higher than for Black students. The authors rationalized these results as teachers’ perceptions of Black and White students differed in that favor was given to the White students.

In addition to Hemmler et al.’s findings, the study-led gifted identification methods were less discriminatory, and therefore, more effective in increasing gifted identification for Black students. When the authors translated the CogAT’s raw scores to locally normed, the scores between Black and White students were statistically similar. Likewise, when universal screening (an alternative identification method) was used and locally normed CogAT scores were compared, there were no statistically significant differences between Black and White students’ scores. To be more specific, comparing students with similar experiences and learning opportunities resulted in a greater number of qualified Black students being identified for gifted education, effectively granting them access to a space from which they had previously been excluded (Hemmler et al., 2022). Overall, the results of this study, like Morgan (2020), recommend the implementation of alternative methods of gifted identification to address underrepresentation. The use of local norms and universal screening are strategies that provide a direct and tangible solution to the racial injustice experienced by rural Black students in which they are frequently overlooked for the most appropriate educational services to meet their needs and grant them opportunities to foster their potential (Butler & Sinclair, 2020; Hemmler et al., 2022). The findings support Grissom and Redding (2016), who argue that similar test scores between Black and White students, but significantly higher teacher ratings for White students, indicate racial biases toward Black students.

Underrepresentation of Gifted Black Males

Stereotyping, Teachers' Low and Negative Expectations, & Lack of Upstanders

Being Black puts students in a historically and currently oppressed group (Ford et al., 2008a; Davis et al., 2020a), and being Black and male exacerbates the marginalization. While the preceding literature sheds light on the general underrepresentation of Black students in gifted education, we must also take into account the unique challenges that Black males face in our educational systems to better understand their underrepresentation in GATE. James (2012) explored the role of stereotypes in the social construction of Black/African Canadian male youth as “at risk” students using the conceptual lenses of cultural analysis and Critical Race Theory (CRT). By reflecting upon a wealth of literature, the article explained how stereotypes of Black/African male youth as “immigrant, fatherless, troublemaker, athlete, and underachiever contribute to their racialization and marginalization that in turn structure their learning processes, social opportunities, life chances, and educational outcomes” (James, 2012, p. 464). James discussed the context of Black males as stereotyped foreigners (i.e., immigrants), in which educators tend to believe that when such youth underachieve or exhibit “disciplinary problems,” nothing or very little can be done to help them. This is comparable to U.S educators’ beliefs and practices when Black males do not look like or act like the dominant White American culture, despite being Americans themselves. Not to mention, when Black males come from stigmatized, heavily policed, low-income urban neighborhoods characterized by unemployment, poverty, limited school involvement, and negative media, educators attribute their future outcomes to their parent's circumstances. As seen in the United States, Black male youth in Canada are subjected to stereotypes of being “fatherless” and suffering from low expectations because single

parenthood (i.e., single Moms) does not provide the opportunities to actively engage in their children's education and Black male are thus labeled as at risk of failing in school (James, 2012).

With that in mind, Black males also bear the consequences of being labeled as good but “dumb” athletes. Sports are frequently used as a pathway to success for Black males so that they do not drop out of school and have a better chance of being accepted into college (Dexter et al., 2021). Despite their athletic talents, educators and the general society grant them a “double negative label” — assuming that they are poor students with high athletic ability. Referencing Hernandez and Davis (2009), James (2012) added that “Black boys arrive with high regard for their teachers and very optimistic about their learning;” however, their positive outlook is short-lived when teachers implicitly send the message that Black boys have the potential to thrive in sports but not in academics (p. 477). Similarly, when Black boys display any sort of dissatisfaction and frustration with educational systems that deny them appropriate learning environments to meet their needs and cultural interests, they are quickly labeled as troublemakers and, worse, future subjects of the criminal justice system (James, 2012). In a qualitative study conducted by James and Taylor (2010), Black male participants indicated that stereotyping or racial profiling by educators, school administrators, and police officers was a part of their daily lives. Lastly, James argued that, despite Black male youth's high educational and social aspirations, they are consistently stereotyped as underachievers. This is explained by inequitable schooling systems, which include educators' implicit biases and Eurocentric curriculum, both of which serve as impediments to Black students' academic achievement. James (2012) asserted:

Thus, the degree to which the stereotype seems to be justified is not merely a result of Black students' lack of intelligence, skills, interests, or their immigrant or “Black culture” that is thought to be antithetical to academic pursuits. The stereotype of Black students

being underachievers is maintained by the social context of schooling, teachers' attitudes and practices, and how Black youth themselves take up or act upon the underachiever stereotype. (p. 482).

In summary, stereotypes of Black male youths as immigrants, fatherless, troublemakers, athletes, and underachievers, or as violent, aggressive, criminal, unmotivated, and hypersexual all interact to influence educators' perceptions of the youths' abilities, skills, and aspirations, as well as the youths' responses to these categorizations (James, 2012; Smith & Hope, 2020). Such stereotypes against Black male youth have also been attributed to implicit biases reflected in low teacher ratings even when their test scores closely mirror those of White students and a lack of teacher referrals for gifted education (Grissom and Redding, 2016; Hemmler et al., 2022). Grantham (2011) drew attention to the prevalent misperceptions of Black males and challenged people to be upstanders rather than bystanders in order to combat the educational neglect of Black men who can be and who are gifted. Grantham defined the bystander effect as an individual's lack of or prolonged delay in intervening in emergency situations, whereas an upstander recognizes injustice and acts to solve the problem. Bystanders in education include "watching intelligent Black males become over-referred for special education, remaining unengaged in class due to culturally biased curriculum, and ignoring the aspirations of underprivileged gifted Black males," which often results in barriers to their future endeavors (Grantham, 2011, p. 265). Notably, bystanders in the educational crisis of underrepresentation of any student population contribute to the issue's persistence. This is evident in the fact that, despite increased international, state, and local focus on the Black male educational crisis, little to no progress has been made in increasing Black male gifted identification.

Culturally Biased Curriculum & Underachievement due to Inequitable School Systems

D. Y. Ford and Moore (2013) addressed the achievement gap in urban schools among Black/African American male students, such as the extremely low representation in gifted education. “Gifted and high potential African American males’ low achievement is often a function of what takes place in schools relative to attitudes, policies, and practices (e.g., low educator expectations, deficit thinking, racism, sexism, irrelevant curricula, poor quality, and culturally incompetent educators, few or no resources, etc.) (D. Y. Ford & Moore, 2013, p. 401). For this reason, it may be difficult or impossible for Black male students to muster the commitment, energy, and resources to defy those in power and effect change in order to excel academically in educational settings that overlook their value to society. Ford and Moore remind their readers that when and if Black males are underachieving, we must not assume that failure is an innate fate, but instead ask ourselves: “What can be done to help these students reach their academic potential?” (2013, p. 402). Thus, we are challenged to be upstanders and remember that highly capable Black males are not born underachieving or low achieving, and thus poor academic performance can be unlearned or reversed (Grantham, 2011; D. Y. Ford & Moore, 2013). Acting otherwise contributes to the underrepresentation of Black males in GATE as well as the potential negative impact of future outcomes (e.g., college attendance and/or future lucrative careers).

Wright and Ford (2019) discussed the social context of Black boys in and out of school settings in the United States, highlighting the critical issue of Black boys’ disproportionate gifted identification. According to the authors, Black boys are very seldom viewed as ideal candidates for gifted education screening, identification, placement, and services. The article also addressed the difficulty that parents experience in obtaining high-quality preschool and early childhood

education programs for their Black son(s). Utilizing data from the US Department of Education's Office for Civil Rights (OCR), Wright and Ford found that even as preschoolers, Black boys are overrepresented in suspension and expulsion. For example, Black boys represent 19% of preschool enrollment, but 45% received out-of-school suspensions "As early as preschool, Black boys faced low and negative expectations that contributed to excessive subjective-based discipline, over-referrals by teachers to special education, and under-referrals by teachers to gifted education" (Wright & Ford, 2019, p. 17). What's troubling about Black boys' early misbeliefs and malobservations is that they lead to academic barriers such as (1) overrepresentation in and frequently misdiagnosed in special education programs; (2) under-referral and under-representation in gifted education, Advanced Placement (AP), and college-preparation programs; (3) low school retention rates, and high suspension and expulsion; and (4) stereotype threats that frequently jeopardize their academic self-efficacy (Wright & Ford, 2019).

Similar to James (2012), Little and Tolbert (2018), and Hope and Smith (2020), Wright and Ford (2019) emphasized common stereotypes of Black males as "bad, violent, uneducated, unteachable, disinterested, lazy, hyperactive, hypersexual, athletic, thug" based on deficit thinking, rhetoric, and racist ideology (p. 19). The impact of implicit biases and negative stereotypes leads to racist teacher behaviors such as habitually punishing Black boys more harshly than their White peers for minor offenses, which is too often seen in their overrepresentation in disciplinary referrals, suspensions, and expulsions (Wright & Ford, 2019; Erickson & Pearson, 2022). "Consequently, instead of looking for and nurturing the brilliance of Black boys—their assets and potential—Black boys find themselves in school discipline hubs where the focus is extensively and/or exclusively on maintaining order and control" (Wright & Ford, 2019, p. 21). In conjunction with suspensions, expulsions, and program misalignment,

Black boys are frequently associated with inexperienced teachers who are unfamiliar with their cultural backgrounds and needs as students. “When an education is culturally responsive, it permeates all aspects of schooling; it is comprehensive, penetrating, and integrating rather than narrow, supplementary, restrictive, and/or assimilating” (Ford, 2011, p. 60). As with many young children, Black boys may find it difficult to advocate for and stand up to school systems that consistently deny them the most appropriate education and misperceive them as “bad;” thus, as upstanders, we must give voice to young Black boys who are unable to fight educational injustices (Grantham, 2011; Wright & Ford, 2019; see also Ford et al., 2008a; Ford et al., 2008b; Moore & Flowers, 2012).

Comparable to Wright and Ford (2019), Winsler et al. (2013) also addressed gifted identification for Black boys during early education such as preschool and elementary. Utilizing statistical data from predominantly low-income Black males, Winsler et al. investigated the protective factors at the child, family, and school level that increase Black male youth’s equitable access to gifted education during early elementary school. Such research is relevant for the review of literature because we need to understand not only the causes of Black male underrepresentation in GATE but also predictors of the increased likelihood of Black male gifted identification. The authors reported, controlling for background variables, the data revealed that Black males who began kindergarten with greater readiness in cognitive, language, fine motor, and behavioral skills were more likely to be identified as gifted. Contributions to student readiness or predictors for Black male gifted identification include emergent literacy in kindergarten, advanced skills in language and math as preschoolers, entering kindergarten at an older age, and attending public school pre-K programs versus community daycare. Winsler et al. explained that when parents and early preschool teachers emphasized the use of language and

symbols (e.g., English literacy) Black males' chances of being identified as gifted increased. Furthermore, when early performance was controlled for, Black males from homes where another language was spoken in addition to English were consistently more likely to be identified as gifted.

More telling, students who were older when they started kindergarten had a better chance of being placed in gifted programs. For instance, "for each month older a student was, the odds of him being placed in a gifted program increased by 8–22 % depending on the particular model examined" (Winsler et al., 2013, p. 442). Nonetheless, the authors cautioned that there may be some potential long-term disadvantages of delayed entry into kindergarten, also known as academic redshirting. Also, Black boys who went to pre-K programs instead of community childcare programs exhibited more advanced academic skills and thereby greater kindergarten performance. Hence, according to the data, attending pre-K programs in public schools more than doubled the likelihood of young Black males being identified as gifted. In terms of the timing of classification and assessments for gifted classification, Winsler et al. informed:

Most Black males were identified as being gifted in either 1st grade (43 %) or 2nd grade (24 %), the years when standardized testing in reading and math first began in the community. Less than 10 % of Black males identified as gifted in our sample scored at or above the 89 % on the SAT-10 (Stanford Achievement Test, 10th edition), one of the alternative gifted criteria used in the county. Thus, it does not appear that students' SAT-10 standardized reading and math scores in grades 1–2 are being relied upon for gifted identification. (2013, p. 442-443).

However, helpful tools in identifying giftedness in Black boys as young as three or four are developmental and/or school readiness assessments. Lastly, while 6.5% of Black males receiving

childcare subsidies or attending public-pre-K programs at the age of four were identified as gifted between kindergarten and fifth grade, Black males were under-identified for gifted education in early elementary school when compared to low-income Hispanic and White peer groups (Winsler et al., 2013). This finding is consistent with other studies centered on the gifted identification disparities of Black students (Lamb et al., 2019; Peters, 2022; Young & Young, 2022).

Underrepresentation of Black Male Students in Advanced Mathematics & Science
Educational Leaders as Gatekeepers, Eurocentric View of Achievement

Similarly in gifted education, Black males have been found to be underrepresented in K-12 advanced math and science courses (i.e., STEM) (Collins & Jones Roberson, 2020; Davis et al, 2019; Flowers & Banda, 2019). Davis et al. (2019) argued that the underrepresentation of Black males in advanced mathematics is the result of educational leaders who develop and implement policies, programs, and standardized tests, as well as serve as gatekeepers in gifted education, honors, Advanced Placement (AP), and International Baccalaureate (IB) programs and courses. According to Davis et al., “White adults and students are the primary beneficiaries of these specialized mathematics options, thereby making them White institutional spaces” (p. 140). Frasier (1997) raised awareness of culturally diverse students’ struggles with standardized assessments while still displaying abilities and talents, Davis et al. warned that current definitions of success and high accomplishment for Black students are still centered on test performance and grade point averages, which are static data points and represent a Eurocentric view of achievement.

Davis et al. further explained that mathematics standardized test results and course grades have played an important part in propagating a deficit view and narrative regarding the

mathematical competence of Black male students. As a result, Black male students are too often seen as incapable of learning and performing at the same level as their White counterparts due to a lack of innate talent, capacity, or interest. Like C. B. Floyd (2022), Davis et al. reported that, in addition to teachers having low expectations for Black students, educational personnel such as policymakers and administrators of advanced mathematics, who are predominantly White, also have deficit thinking about Black males due to stereotyping, as also noted in James and Taylor (2010), James (2012), and Wright and Ford (2019). These characterizations of Black male students shape teachers' deficit views, beliefs, and perspectives, resulting in low teacher expectations and poor quality instruction that impedes students' development of conceptual understanding and procedural fluency in mathematics, which is required for advanced and college preparatory mathematics coursework.

Limited Access to Necessary Resources

In addition to Davis et al.'s (2019) reasons for the underrepresentation of Black male students in advanced STEM courses, Flowers and Banda (2019) advised on the consequences. According to Flowers and Banda, disparities in the successful completion of AP courses by minoritized communities (e.g., Black males) result in what the economists regard to as a permanent national recession (see also Baum et al., 2010). Flowers and Banda went on to emphasize that a recession restricts access to middle-class status, which impedes full participation in a democratic society in terms of health and financial contributions to society (see also Auguste et al., 2009). Thus, in an attempt to assist practitioners in cultivating Black males' STEM identity, Flowers and Banda used a multiple case studies technique to investigate the perceptions of identification to STEM prospects of Black boys who participated in advanced placement and math and science courses. Flowers and Banda's data analysis revealed three

themes: 1) defining the possibilities of a STEM identity, 2) self-efficacy, and 3) conflicting self-identity formation, and community support essential to positive self-identity. Flowers and Banda came to the conclusion that a positive academic self-concept is fundamental in order for Black males to have a STEM identity, especially when they come from a highly underrepresented population.

As Black males begin to believe in their abilities to succeed in STEM, their STEM identity begins to form. Flowers and Banda observed that this is due to developing a science identity and appreciating the value of competency and performance in a STEM context. More telling, because AP courses are often dominated by White and Asian classmates and White teachers, community, peer, and familial support had a significant influence on Black males' racial identification to succeed in such classes (Davis et al., 2019; Flowers & Banda, 2019). Flowers and Banda also cautioned that Black males are more likely to experience challenges in gaining access to necessary resources, which their White and Asian counterparts are not. This included a lack of access to technology as well as a lack of finance on the part of their families. A lack of resources in Black males' households and other environments they may encounter can act as a barrier to Black males in AP mathematics and science courses, despite the environment within such courses challenging them academically (Flowers & Banda, 2019). This finding supports the notion that minority students (e.g., Black males) in STEM are compelled to seek help outside of their families to succeed.

Summary of Literature Review

“When too many Black boys experience academic environments where they are not recognized for their strengths, gifts, and talents—not understood in terms of their needs—and where their identities are criminalized and adultified, they learn the message early that schools

do not support, encourage, or care for their overall humanity and development” (Wright & Ford, 2019, p. 21). These negative stereotypes of Black boys serve as a reminder that far too few educators truly understand and nurture young Black boys’ cultural needs. Such deficit beliefs are commonly seen in gifted education, where Black males are seldom screened, identified, and placed in GATE. Thus, the goal of the literature review was to gain a better understanding of the causes of underrepresentation in GATE, as well as the unique challenges that Black boys face because of historical stereotypes that persist in educational systems. The findings of the reviewed literature were consistent. Causes of underrepresentation in GATE were consistently identified as implicit bias, income inequality, lack of minority teachers, insufficient identification methods, low priority of GATE within schools and/or districts, and less qualified teachers, particularly those who lack training and/or understanding of the multicultural needs of all students. Additionally, when training new teachers, teacher educators tend to be more concerned about the comfort of White teachers rather than the need to prepare a predominantly White middle-class, female teaching force to effectively work with diverse populations of students. As a result, talks and training activities about race are often avoided (Galman et al., 2020).

Analogous to implicit bias, research has also shed light on low expectations toward low-income and/or Black students, and preconceived beliefs about giftedness that tend to guide teachers’ judgment more than specialized training (Frasier, 1997; Berman et al., 2012; Gershenson et al., 2016). Even more relevant to this study, research on the underrepresentation of Black students in rural gifted education and factors specific to Black males were examined. According to Davis et al. (2020a), equity barriers to rural gifted education programs for Black students were like those in urban GATE programs, but a few key differences occurred. Black students in rural schools are often marginalized by shortcomings unique to rural schools such as

being geographically remote, physically isolated from a concentrated group of academic and intellectual peers, and limited access to technology. Not to mention, rural schools are victims of the historical legacy of segregation and low resources. As a result of being geographically remote, rural students are distanced from resources related to concentrated enrichment and higher education. When exploring factors that impede Black males' academic experiences, the literature consistently underlined salient stereotypes.

Common negative stereotypes unjustly imposed on Black boys included fatherless, bad/troublemaker/ violent/aggressive/ criminal/thuggish, underachiever, unmotivated, hypersexual, hyperactive, uneducated/unteachable, and disinterested/lazy. Sadly, implicit bias and stereotypes are also imposed on working-class parents of culturally diverse students; this cause a lack of communicate and partnership between teachers and parents and missed opportunities for increased parent awareness of giftedness and students' academic performance that usually result from strong relationships between their parent and teacher (Greene, 2013; Posey, 2012). James (2012) also observed that "immigrant" stereotypes play a role in Black male academic barriers in Canada; this is comparable to American Black boys who frequently do not exhibit characteristics of the dominant White culture.

Although Black males are celebrated for their athletic abilities, teachers, coaches, and general society, directly and indirectly, send the message that Black boys have the potential to excel in sports but not in academics (e.g., the dumb athlete). Other equitable barriers were classified as little to no resources and teaching practices to reflect relevant curricula, and high-quality, and culturally competent educators, who nurture the needs of Black boys. While Winsler et al. (2013) reported on the predictors of early gifted identification in Black boys, the authors discovered that Black males were under-referred compared to their low-income Hispanic and

White peers. Furthermore, Ford and Wright (2019) reported that even as preschoolers, Black males faced excessive disciplinary action. Most notably, Grantham (2011) emphasized the prevalence of Black male underrepresentation, implying that equity barriers in GATE will persist if we act as bystanders rather than upstanders.

In addition to gifted education programs, Black males are underrepresented in AP mathematics and science courses. Davis et al. (2019) informed that their underrepresentation in STEM is a result of educational leaders who develop and implement policies, programs, and standardized tests, as well as serve as gatekeepers in gifted education, honors, Advanced Placement (AP), and International Baccalaureate (IB) programs and courses. Not to mention that AP courses tend to be spaces for the majority race (e.g., White peers and teachers), leaving Black males subjected to stereotype threats. Flowers and Banda (2019) added that, in contrast to their White and Asian counterparts, Black males are more likely to be limited in resources such as a lack of access to technology as well as a lack of financial support on the part of their families, which indicates that Black males in STEM are compelled to seek help outside of their families in order to succeed. Due to underrepresentation in higher education programs, Black male identity development is jeopardized, including how they see their skills to thrive in academic settings and evolve into future contributors to society. Flowers and Banda warned that disparities in the successful completion of AP courses by minoritized communities (e.g., Black males) result in what economists call a permanent national recession, limiting access to middle-class status and impeding full participation and contributions in a democratic society's health and financial economic expansion (see also Collins & Jones Roberson, 2020).

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CHAPTER 3

ASSESSING BLACK MALE ACCESS TO GIFTED EDUCATION IN GEORGIA

Several decades of gifted education research have revealed that Black students are consistently underrepresented in terms of access and participation (Goodman & Frechtling, 1980; Serwatka et al., 1989; Frasier, 1997; Ford and King, 2014; Pearman & McGee, 2022). For example, Black students are underrepresented by as much as 51.56% and as little as 36.13% on an annual basis (Young & Young, 2022). According to Young and Young (2022), there were only 122,256 Black students in gifted education out of 1,661,573 in 2018, compared to 330,774 Black students in gifted education out of 3,329,544 in 2014. In other words, between 2014 and 2018, Black students' gifted enrollment dropped from 9.93% to 7.36%. The authors further explained that in order to be considered equitable, Black student representation would need to be increased by 14.25% to 12.08% based on the equity index 20% allowance formula (Young and Young, 2022). The National Association of Gifted Children (2022a) emphasizes that gifted children come from all backgrounds (i.e., diverse cultures, socioeconomic statuses, and races) and require access to optimal services to meet their full potential. Yet, Black students, and specifically Black males for this study, are severely underserved and thus lack "sufficient access to appropriate learning opportunities to realize their potential" (NAGC, 2022a, para. 1; Ford, 2021; Wright et al., 2017). Bullard, Madison, and Grantham (2022) conducted a descriptive statistics study on equitable access to gifted education in Georgia for the 2017-2018 academic year and developed the Degrees of Equity Grading Scale, also known as DEGS (Bullard et al., 2022; Grantham et al., 2023).

DEGS measures equity levels within gifted and talented education (GATE) and is designed to motivate other educational stakeholders to closely examine their own GATE programs and implement necessary plans to address equity. DEGS is similar to the traditional academic grading scale in that it takes into account the common familiarity and use of the plus and minus academic grading system in the United States and provides opportunities for small steps toward improvement (Bullard et al., 2022). Based on Bullard et al. findings, Black students were underrepresented in Georgia's gifted education programs and received a DEG (Degree of Equity Grade) of 67% — this represents a letter grade of D+ and the enrollment description was noted as “inequitable.” When comparing Black students by gender, Black females scored 6.2 points higher than Black males on the DEGS (Bullard et a. Underrepresentation in any population is detrimental because it prevents certain groups from accessing and benefiting from programs that are advantageous to their development and our society's progression in creativity, innovation, and economic growth. Subotnik et al. (2011) affirm that GATE research indicates that when high-ability students do not have access to the most appropriate education services, such as GATE, they tend to fail or underachieve. For example, “every student in the United States is guaranteed a free and appropriate education, but too many academically gifted students spend their days in school relearning material they have already mastered, trapped in classes that are not challenging and too slow paced” (Subotnik, Olszewski-Kubilius, & Worrel, 2011, p. 11). As a result of a lack of challenge and/or motivation, students are likely to become bored, disengaged, and unable to see the value of education.

According to the Georgia Department of Education (2022a), also known as the GADOE, the total number of K-12 public school students for the academic year 2021-2022 was 1,686,318, with 309,470 of those students being Black males. Only 16,279 Black male students were

identified as gifted during the same academic year (GADOE, 2022c). Thus, while Black male students account for 18.4% of the student population in Georgia schools, only 5.3% have been identified as gifted. However, we acknowledge that the global pandemic of COVID-19 has had an impact on gifted enrollment. Nonetheless, the few Black males identified as gifted are less likely to continue in gifted programs (Grantham, 2011; Ford and Moore III, 2013, Wright and Ford, 2019). Bryan and Ford (2014) informed:

Although Black males are gifted, their presence is still lacking in gifted programs because of teachers' biases, stereotypes toward them, deficit thinking about them, and definitions used to determine giftedness that are seldom culturally responsive. Collectively, these issues contribute to the unacceptable presence of Black male students in gifted programs. (p. 157).

Bryan and Ford (2014) further explained that "Black males may become gifted underachievers because of teachers' heavy reliance on colorblind and cultureblind beliefs, values, and curricula" (p. 157). It is imperative to be mindful of this phenomenon because students learn best in inclusive environments where they feel safe, seen, and have a sense of belonging. Children's academic achievement and future career choices are significantly shaped by their classroom experiences and rely heavily on receiving equitable access to the most appropriate education to meet their needs.

Underrepresentation & Teacher Referrals for Gifted Students

Notwithstanding advocacy for social justice and the widespread recognition of the negative consequences of underrepresentation, gifted education programs continue to struggle with racially diverse enrollment. When gifted enrollment exceeds overall enrollment, this is referred to as overrepresentation, whereas underrepresentation takes place when gifted

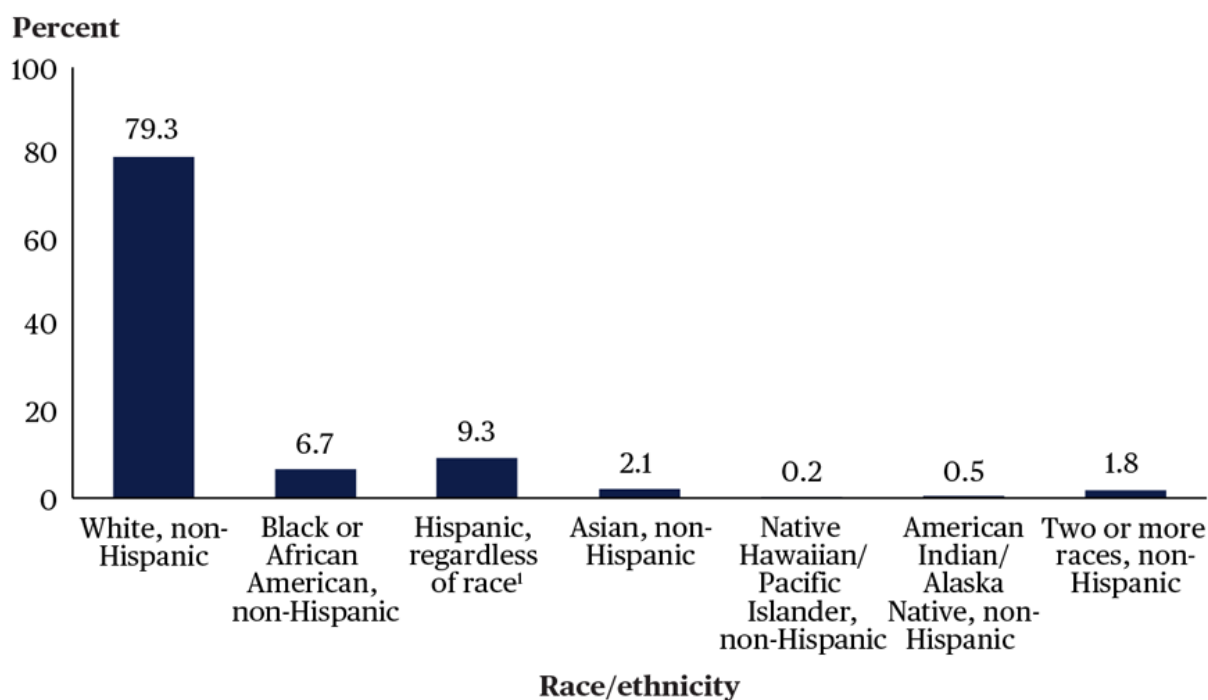
enrollment falls below overall enrollment. According to Ford (2014), “group representation in general and gifted education is [or should be] mirrored, leaving no range or allowance to account for and reconcile group differences (e.g., income, resources, language, gender)” (p. 145). While Asian and White students are commonly overrepresented in GATE, Black and Hispanic students are frequent casualties of underrepresentation (Yoon & Gentry, 2009; Ford, 2013; Lamb et al., 2019; Peters, 2022). Previous research on GATE underrepresentation suggests that classroom teachers can act as gatekeepers for gifted education enrollment because gifted identification most often begins with a teacher referral (Frasier et al., 1995a; Donovan & Cross, 2002; Card & Giuliano, 2016). In a longitudinal study of 14,280 U.S. elementary students, Grissom and Redding (2016) analyzed teacher referrals for gifted programs. The authors found that “in any given survey wave, an average of 5.3% of White students in schools with gifted programs are assigned to gifted services, compared to 6.2% of Asian students, 3.5% of Hispanic students, and 2.2% of Black students” (Grissom and Redding, 2016, p. 6). With identically high standardized math and reading test scores, White, Hispanic, and Asian students had a statistically similar chance of being referred for gifted education, which was around 6%. Black students, on the other hand, accounted for 2.8%, making them 50% less likely to be referred for gifted services.

Not only are Black students referred for gifted education at a disproportionately low rate when compared to White and Asian students, but Black teachers are also three times more likely to assign Black students to gifted programs than non-Black teachers (Grissom & Redding, 2016). The issue here is that, despite the growing diversity of school-aged students, the majority of teachers in the United States are White, and thereby, may harbor implicit biases toward groups that do not fit the traditional norms of the dominant U.S. culture. The National Center for Education Statistics (2020) reported:

In the 2017–18 school year, 79% of public school teachers were White and non-Hispanic (see Figure 3.1). About nine percent of teachers were Hispanic (of any race), and seven percent were Black and non-Hispanic. Two percent of teachers identified as Asian and non-Hispanic, two percent as Two or more races and non-Hispanic, and less than one percent as Native Hawaiian/Pacific Islander, non-Hispanic and American Indian/Alaska Native, non-Hispanic. (para. 2).

Figure 3.1

Percentage of Distribution of Teachers by Race/Ethnicity, 2017 – 2018



Note. Hispanic includes Latino/a. Teachers include both full-time and part-time teachers. Detail may not sum to totals because of rounding. Image retrieved from the following source: U.S. Department of Education, National Center for Education Statistics, National Teacher and Principal Survey (NTPS), “Public School Teacher Data File,” 2017–18. <https://nces.ed.gov/pubs2020/2020103/index.asp>

However, when the percentages of student populations were examined, the report showed that 61% of teachers tended to be White in schools where the majority of students were not White.

The student racial composition consisted of 54% Hispanic, 54% Black, 60% Asian, or American Indian/Alaska Native (NCES, 2020). As we investigate the underrepresentation of Black students in GATE programs in the United States, it is worth noting that 6.7% of public school teachers are Black, and 15% of students are Black (NCES, 2022; Taie & Goldring, 2020). Although Black teachers are three times more likely to assign Black students to GATE (Grissom & Redding, 2016), Black students outnumber Black teachers by slightly more than 50%.

Implicit Bias in Gifted Education & Black Males

Chin et al. (2020) stated that a large body of research in education shows that teachers treat students differently based on race, and social psychologists have shown that people have “implicit racial biases,” or biases that exist outside of conscious awareness. Implicit bias is defined as the “attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner” (Staats, 2016, p. 29). Implicit biases cause us to draw conclusions based on a person’s characteristics, abilities/inabilities, or behaviors based on the group of people with whom they belong or associate. Such conclusions lead to salient stereotypes toward gender, age, social class, culture, and/or race, and these stereotypes are thus related to, or a function of, prejudice or authoritarianism (Vinacke, 1957). Given the history of racism against minority groups in the United States, particularly Black males, one could argue that majority social groups may harbor biases learned from social observation. These same biases make their way into our school systems and have been identified as a potential factor in low-gifted referrals for Black males, and educators with stronger implicit biases may be more likely to interpret Black males’ behaviors as threatening (Henfield, 2013; Bryan & Ford, 2014; Grissom & Redding, 2016; Smith & Hope, 2020). Thus, such interpretations impose referrals for discipline and/or special education rather than gifted and/or advanced education (Ford & Russo, 2016; Chin et al., 2020).

In Robins et al. (2022), Munroe proclaimed, “Black males, throughout history, have been at the forefront of innovation, creativity, and social justice transformative moments; they have also been viewed as a threat, violent, and ill-prepared for academic success” (p. iv). Thus, it is critical to discuss society’s perceptions or stereotypes of Black males and how it impacts their educational experiences in terms of equitable access to appropriate learning opportunities. In educational systems, stereotypes and implicit biases matter because unconscious beliefs frequently lead to discrimination against certain groups of students and influence how we act toward and evaluate their academic abilities. Frasier (1997) stated that some teachers believe that minority students (e.g., Black males) are incapable or uninterested in intellectual pursuits, and stereotypes of gifted students foster a negative attitude toward Black students. Frasier also expressed concerns about unidimensional views of giftedness, which lead to misconceptions about various gifted characteristics. Educators’ perceptions of gifted characteristics, both positive and negative, can influence their decision to refer Black males to gifted education programs. Gifted characteristics can display either positive or opposing behaviors (see Table 3.1). If teachers harbor implicit biases as a result of salient stereotypes, Black males with adverse gifted characteristics are more likely to be referred for disciplinary action and remedial/special education rather than gifted and advanced education.

Table 3.1

Characteristics of Gifted Children: Positive & Negative (Other) Behaviors Which May Be Exhibited

Characteristics	Positive Behavior	Negative (Other) Behavior
Learns rapidly/easily	Memorizes/master basic facts quickly	Gets bored easily, resists drill, disturbs others
Reads intensively	Read many books and uses library on own	Neglects other responsibilities

Advanced vocabulary	Communicates ideas well	Shows off, evokes peer resentment
Retains a quantity of information	Ready recall and responses	Monopolizes discussion
Long attention span	Sticks with tasks or projects	Resists class routine, dislikes interruptions
Curious, has a variety of interests	Asks questions, gets excited about ideas	Goes on tangents, no follow through
Works independently	Creates and invents beyond assigned tasks	Refuses to work with others
Alert and observant	Recognizes problems	Impolitely corrects adults
Has a good sense of humor	Able to laugh at self	Plays cruel jokes or tricks on others
Comprehends, recognizes relationships	Able to solve social problems alone	Interferes in the affairs of others
High academic achievement	Does schoolwork well	Braggs, egotistical, impatient with others
Fluent, verbal facility	Forceful with words, numbers; leads peers in positive ways	Leads others into negative behaviors
Individualistic	Asserts self and ideas, has few friends; sense of own uniqueness	Stubborn in beliefs
Self-motivated, self-sufficient	Requires minimum teacher directions or help	Is overly aggressive, challenges authority

Note. Adapted from the Ohio Association for Gifted Children (2022).

Impact of the Underrepresentation of Black Males

A wealth of literature identified common causes of Black male underrepresentation in GATE (Ford & Moore, 2013; Grantham, 2011; Harper & Davis, 2012; Henfield et al., 2014; Whiting, 2009), raising the question of how equity barriers affect their learning and development. When compared to their well-represented counterparts, underrepresented groups such as Black males are at a disadvantage. They face obstacles that make life more difficult and complex. To elaborate, the prevalence of academic disparities calls for concern about the future outcomes of marginalized students in terms of potential negative effects that could hinder academic achievement, positive self-identity, preparation for higher education, career

aspirations, and so on. For instance, Black students risk becoming underachievers if they are not properly identified and placed in GATE programs, and underachievement is frequently linked to boredom (Ford, 2013). Boredom is caused by being under-challenged and disengaged, which leads to behavioral issues that could be resolved by a culturally relevant and rigorous curriculum (Wright & Ford, 2019). This also highlights the fact that many teachers are untrained in the diverse characteristics of gifted children, let alone gifted Black males (Ford et al., 2008a; Ford 2011; Grantham, 2013). Failure to refer Black males to GATE due to deficit thinking, as well as a lack of rigor and cultural competence in teaching methods and curriculum, all contribute to widespread educational gaps. They are less likely to graduate from college and complete advanced degrees, and as a result, only a few role models and mentors who look like them are available to help guide them through the process of higher education and advanced career choices. We waste talents that could be valuable to societal advancements when we fail to recognize the high potential of Black males. The effects of underrepresentation can be seen in lower proportions of Black males in more lucrative and competitive careers like STEM, and the workforce in general (Flowers & Banda, 2019; Collins & Jones Roberson, 2020).

Underrepresentation is detrimental to the workforce because we require a diverse group of people who can work peacefully and efficiently across cultures and with people who think differently (Bullar & Bahar, 2023; Ford et al., 2008a; Newton & Newton, 2014). Not to mention, diversity offers experiential perspectives that broaden our way of thinking, acting, reacting, and conversing, making us more tolerant and compassionate toward those around us. Providing equitable opportunities allows all students to use their unique characteristics to help a rapidly evolving society that is plagued by unexpected circumstances (e.g., global outbreaks of COVID-19 and Monkeypox), necessitating skill sets and knowledge bases for asking questions and

providing solutions through the collaboration of diverse groups of people (Bullard & Grantham, 2023; Bullard & Bahar, 2023; Bullard et al., 2023). Regrettably, the prevalence of underrepresentation, particularly among Black males, jeopardizes society's progress and innovation. Wright and Ford (2019) informed:

Being mindful of intersectionality, we are aware of these academic disparities as inextricably linked to negative life outcomes (social and environmental) that include economic hardships due to high rates of under-employment, unemployment, discrimination in various sectors of the job market, adverse health conditions, drug and alcohol abuse, negative media perceptions, racial hate-crime violence, and victimization due to police violence. (p. 19).

Torrance (1991) also explained:

When disadvantaged people are enslaved, isolated, segregated, discriminated against, or made helpless, their anger and hatred are throttled, and their creativity finds outlets in unobtrusive ways. Likewise, their destructiveness is more covert. When there is social equality, these feelings and behaviors are allowed to surface. We progress if we acknowledge them and set about to deal with them in constructive ways. (p. 4).

In other words, as educators, we must act with urgency to create change, which includes advocating for and recognizing differences as other types of strengths rather than deficits among Black males (Torrance, 1974).

Statement of Problem

“Since the racial integration of American public schools, educators have faced the challenge of improving educational experiences of Black youth, which have often met frustration” (Hébert, 2002, p. 25). Various gifted education studies have provided valuable

insight into the causes of the underrepresentation of Black students in GATE programs, with some focusing on Black males specifically. Because of mainstream deficit beliefs of Black males in academic and non-academic settings, this study will examine how Black males are represented in GATE, as they face unique challenges that differ from those faced by other minority groups. According to Busette (2018), “no other demographic group has fared as poorly, so persistently, and for so long” in relation to Black males (para. 2). Smith and Hope (2020) contend that, while Black boys and men benefit from male privilege, racism exposes them to multiple systems, including criminal justice and education. “From prekindergarten through high school, teachers and administrators in their schools see Black boys as violent, aggressive, unmotivated, hypersexual, and even criminal” (Smith & Hope, 2020, p. 552). As a result, many researchers believe that teachers who harbor implicit biases or hold negative stereotypes about Black males are the primary contributors to the negative impact on Black boys’ self-esteem, self-efficacy, and overall learning outcomes, as well as their disproportionate suspension, expulsion, and drop-out rates (Grantham, 2011; Little & Tolbert, 2018; Wright & Ford, 2019). Black boys are rarely considered when it comes to receiving a teacher referral for gifted education services. Nonetheless, Black boys are overrepresented in remedial courses, special education programs, and disciplinary referrals (Whiting, 2009; Sacks, 2019).

Purpose of Study

Despite Black males’ achievements and valuable contributions to society (e.g., Dr. Charles Drew, Thurgood Marshall, and the 44th President of the United States Barack Obama), they have long faced educational disparities as seen in GATE programs. Decades of research have shown that Black males are underrepresented in gifted education, and it is critical to understand the factors that contribute to this phenomenon. When we have a clear understanding

of the causes of underrepresentation, we are better able to develop policies and practices that advocate for marginalized students (e.g., Black males) and identify solutions to provide an equitable education for them. Therefore, this study expands on Gentry et al. (2019) and Bullard et al. (2022) — studies that investigated equitable access to gifted education for Black students in the state of Georgia. To account for the potential ecological fallacy, I use disaggregated data from the Georgia Department of Education (GADOE). Hence, drawing conclusions about educational inequalities based on aggregate data may imply ecological fallacy, in which incorrect conclusions may be drawn from the relationship between ecological and individual-level data. The data are disaggregated into the following school-level factors: 1) elementary, middle, and high schools, 2) schools' total enrollment count of Black males, 3) socioeconomic status, and 4) physiographical regions.

Research Questions

Thus, the goal of this study is to determine which school-level factors are associated with Black male gifted identification, and more specifically, the research asks:

- 1) How do Black male gifted identification rates in Georgia compare across school-level education (i.e., elementary, middle, and high schools)?
- 2) How do Black male gifted identification rates in Georgia compare to varying total enrollment counts for Black males?
- 3) How do Black male gifted identification rates in Georgia compare to schools with varying socioeconomic status (i.e., Title I versus non-Title)?
- 4) How do Black male gifted identification rates compare for Georgia's schools of varying physiographical regions?
- 5) Do any of the predictors above interact?

Order of Subsequent Sections of Study

The succeeding section of this article describes the data collected and the quantitative methodological approach used to answer the research questions, respectively. The proceeding section presents empirical findings that identify school-level factors that act as barriers to gifted identification for Black males. The final section summarizes the major findings and discusses the implications of the findings, limitations, and recommendations for future research.

Method

Data Collection

In the state of Georgia, gifted education programs are funded by the Georgia Department of Education (GADOE). In 1994/1995, Georgia mandated multiple criteria assessment practices for GATE programs in order to increase the opportunity and identification of culturally diverse gifted and talented students (Humble, 2018). The GADOE (2022c) defines a gifted education student as:

One who demonstrates a high degree of intellectual and/or creative ability(ies), exhibits an exceptionally high degree of motivation, and/or excels in specific academic fields, and who needs special instruction and/or special ancillary services to achieve at levels commensurate with his or her ability(ies). (para. 1).

Nonetheless, students from minority racial groups and low-income families have been underrepresented in GATE programs. Gentry and colleagues reported in 2019 that Black students in Georgia had inequitable access to GATE. In addition to Gentry et al., Bullard et al. (2022) discovered that Black girls in Georgia were more likely than Black boys to be identified for GATE. Based on these previous studies, I investigate Georgia's school-level factors that influence Black male identification for the academic year 2021-2022. Notably, I recognize that

the data is post-COVID, and thus student enrollment may also be impacted by the unexpected pandemic.

The first step in obtaining the appropriate data for this study was requesting data via the GADOE data request form (GADOE, 2022c). Data collected for this study included kindergarten to 12th grade (K-12) Black male students and gifted student counts for the academic year 2021-2022. The number of Black males enrolled in gifted programs was 16,279, and their total enrollment was 309,470, which was reduced to 14,435 and 280,701, respectively after 268 schools were excluded. The schools excluded from the data set consisted of charter schools (4.28%), state charter schools (0.79%), magnet schools (0.74%), state schools for the blind (0.04%), and deaf (0.09%), alternative schools (1.35%), treatment center schools (0.96%), and schools under the department of juvenile justice (DJJ) (1.27%). Such schools were excluded because gifted identification and/or services were not provided, offered, or mandated; thereby, the initial sample size of schools was reduced from 2,289 to 2,071 schools.

The final school counts consisted of 1,217 (58.76%) primary/elementary schools, 454 (21.92%) middle schools, 395 (19.07%) high schools, and five (0.24%) schools that served all K-12 grade levels. Schools were also classified as Title 1 or Non-Title 1. For this study, there are 1,454 (70.21%) Title 1 schools, of which 1,438 (69.44%) schools were under the Georgia Schoolwide Program (SWP) and 16 (0.77%) were under the Targeted Assistance Program (TAP). A Georgia school that is classified as Title I has a high number or percentage of low-income children, and thus receives federal funds through the GADOE to help ensure that all children meet challenging state academic content and student academic achievement standards (GADOE, 2022c). SWP Title 1 schools receive supplemental funds that can be used to serve all students at the school based on a needs assessment but must prioritize the needs of students who

are most vulnerable. TAP Title 1 schools, on the other hand, receive supplemental services to serve identified Title 1 students based on a variety of objective criteria to help children meet Georgia’s challenging academic standards (GADOE, 2022d). This study also consists of 617 (29.79%) non-Title schools. Lastly, based on each school’s appointed county (i.e., school district), the sample was then divided into six geographical regions of Georgia: 1) Appalachian Plateau (4/0.19%), 2) Ridge and Valley (144/6.95%), 3) Blue Ridge Mountain (22/1.06%), 4) Piedmont (1304/62.96%), 5) Upper Coastal Plain (344/16.61%), and 6) Lower Coastal Plain (253/12.22%) (see also Table 3.2).

Table 3.2

Counts and Percentages of Black Male Enrollment and Socioeconomic Status of Schools by Georgia’s Physiographical Regions

Physiographical Region	TEC	GIDC	GID%	T1C	T1%	NT1C	NT1%
App. Plateau*	7	0	0%	2	50%	2	50%
Ridge & Valley	3,314	132	3.8%	117	81.3%	27	18.7%
Blue Ridge Mountain*	33	0	0%	16	72.7%	6	27.3%
Piedmont	194,212	11,627	6.0%	802	61.5%	502	38.5%
Upper Coastal Plain	52,843	1,386	2.6%	316	91.9%	28	8.1%
Lower Coastal Plain	30,292	1,290	4.1%	201	79.4%	52	20.6%

Note. *denotes physiographical regions removed due to small sample size; TEC = Total Enrollment Count, GIDC = Gifted Identification Count, T1C = Title 1 School Count, NT1C = non-Title 1 School Count; % = Percentage.

Data Criterion

The following requirements were used to formulate and validate data to meet the research objective of this study: 1) total enrollment and gifted counts of Black males; and 2) data counts from Georgia schools that require referrals, screening, identification, and services for gifted and talented education students. The first requirement was established because the study is only interested in how school-level factors influence Black male gifted identification. The study makes no comparisons of Black males to other races, genders, or non-binary identities. The research questions revolve around gifted identification to gain a better understanding of the

wealth of research indicating that Black males are persistently underrepresented in GATE (Grantham, 2011; Wright & Ford, 2019). Furthermore, data from Georgia schools were collected based on Gentry et al.'s (2019) Georgia report of inequitable access to GATE for Black students, and Bullard et al.'s (2022) findings that Black boys were identified for GATE at lower rates than Black girls. As previously stated, Georgia's mandated law promotes equity and fairness by assessing students using multiple criteria. As a result, the second data requirement was limited to Georgia public schools that are required to provide gifted education services. The initial dataset from GADOE included enrollment counts of Black males from public schools, magnet schools, charter schools, state schools for the deaf and blind, and alternative/schools under the department of the juvenile justice system.

Subsequently, each school type was evaluated to determine if the data met the study's requirement. NAGC (2022a) states:

Although Federal law acknowledges that children with gifts and talents have unique needs that are not traditionally offered in regular school settings, it offers no specific provisions, mandates, or requirements for serving these children. Currently, gifted education is a purely local responsibility and is dependent on local leadership. (n.d., para.1).

Hence, not all school types identify and/or provide gifted and talented education services, and nor are they all required by law to do so. Under Georgia Board of Education (SBOE) Rule 160-4-2-. 38 and GBOE-approved regulations, all public schools in the state of Georgia are required by law to provide gifted services to all students who have been identified as gifted (Humble, 2018). Thus, based on the data inclusion criteria for this study, all public schools remained in the dataset. However, NACG (2022a) and GADOE (2022a) inform that many gifted education

decisions and procedures are left to the discretion of local school systems so that they may address the unique needs of their communities and for systems that have been awarded IE-2 (Investing in Educational Excellence) or Charter status. For clarification, under the IE-2 model, a local district has a performance contract with the State Board of Education (SBOE) granting the district freedom from specific Title 20 provisions (i.e., outlines the role of education in the United States Code), SBOE rules, and GADOE guidelines (GADOE, 2022d).

Rationale for Data Exclusion. While the data for magnet and charter schools included gifted Black males in their enrollment counts for school total and gifted identification, these school types were removed. Typically, gifted students apply to attend charter and magnet schools, and those who choose to attend have been identified prior to their enrollment, and such schools are not required to provide specialized (i.e., differentiated) gifted education. For example, “a charter school is a public school of choice that operates under the terms of a charter, or contract, with an authorizer, such as state and local boards of education” (GADOE, 2022c, para. 1). GADOE asserts “As the number of charter schools and charter systems in Georgia continues to increase, it is important that schools and systems operating under charter contracts continue to meet the needs of gifted learners” (GADOE, 2022d, para. 1). Nonetheless, charter schools may opt out of gifted services, thereby opting out of state funding for gifted education. GADOE (2022c) explained that in exchange for a higher level of accountability for improving student achievement, certain state and local rules are waived for charter schools. As a result, Georgia charter schools have the *option* of providing gifted education services (Eger, 2012, slide 5).

Private schools were also excluded because they are not subject to Georgia law that mandates gifted services. Private schools are designed to offer advanced curriculum, but such

curriculum does not include specialized gifted programs. Magnet schools, like charter and private schools, are schools of choice and attendance is not based on where the students reside. Yet, magnet schools differ from charter and private schools because they are part of the local public school system. The admissions criteria for magnet schools include 1) first come, first-serve applications, 2) lotteries, 3) percentage set-asides for neighborhood residents, and 4) standardized test scores. While Georgia schools use the Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP) to determine eligibility for both magnet and gifted programs, the programs are different. Georgia's gifted education programs offer students specialized instruction and/or ancillary services to help them achieve at levels commensurate with their high level of intellectual and/or creative ability(ies) (GADOE, 2022c). On the other hand, students choose to enroll into magnet schools according to their interest in the school's theme. This means that each magnet program focuses on a distinct area of study (i.e., theme), such as STEM, performing arts, or career-focused, and that students are evaluated based on the district-defined criteria relevant to such theme, rather than gifted identification.

Moreover, the Georgia schools for the deaf and blind, and alternative schools (i.e., the juvenile justice system) were removed from the dataset because they did not identify, screen, and/or provided gifted education services. The school for the deaf provides comprehensive, appropriate education and services to deaf and hard-of-hearing students and their families aged three to twenty-one (GADOE, 2022c). These programs also aim to assist students in becoming socially and emotionally stable young adults capable of leading full and productive lives. In comparison, the school for the blind provide development opportunities for visually impaired and non-sensory impaired students aged three to twenty-one in the areas of intellectual growth, vocational skills, and functional living experience (GADOE, 2022c). Nonetheless, no gifted

Black males were included in the GADOE gifted enrollment count for the state schools for the deaf and blind, and there was no mention of gifted and talented education on their websites. Lastly, alternative schools and schools under the department of juvenile justice system were removed. The GADOE (2022d) defines an alternative/non-traditional education school as:

An option for students who may experience difficulty in the traditional setting (para. 1). Georgia's alternative/non-traditional education program is designed to provide some program flexibility at the local level. A local school may provide the following: an attendance recovery program, a choice alternative education program, a community-based alternative education program, a credit recovery program, and other alternative program models that otherwise meet the requirements of the SBOE rule 160-4-8. (para. 6).

The Department of Juvenile Justice (DJJ) operates schools that serve the state's justice-involved youth up to the age of 21, with the goal of redirecting and shaping the young lives and teaching students to accept responsibility for their delinquent behavior (DJJ, n.d). DJJ training is intended to prepare students for the Official GED Ready exam as well as the Official GED test. Students who meet the qualifying scores are given resources on re-entry, job skills development, and post-secondary options. Consequently, neither the data for alternative schools nor the data for DJJ schools show gifted enrollment, nor do their websites mention a gifted education program. It should be noted that some characteristics of school types overlapped. As a result, the analytic sample of schools was reduced by 9.52%. The above school types were excluded due to state differences in whether these schools are required to meet the same legal mandates and general policies for services as traditional public schools.

Procedure

This study utilized quantitative research to collect and analyze numerical data from the GADOE for the academic year 2021 – 2022. Using a linear regression model (ANOVA/multiple regression analysis), the independent predictor variables (x) were school-level characteristics (school level, school size, school socioeconomic status (SES), and school geographical region) and the dependent variable (y) were the relative percentage of Black male gifted enrollment. I quantified the relative differences between Georgia's school-level characteristics (the predictor variables) and how such predictors impacted the relative percentages of Black male gifted enrollment (the outcome variable). More specifically, to determine the school-level factors that influence the rate of Black male identification, the following statistical analyses were performed: ANOVA (analysis of variance), simple linear regression, t-test, and ANCOVA (analysis of covariance). An ANOVA test is a statistical significance test used to determine whether two or more groups' mean scores on one or more variables or factors differ (equivalent to a multiple regression with dummy coded variables). However, tests of variance homogeneity were first performed to determine whether two or more subgroups of a population had the same distribution of a single categorical variable. If the assumption of homogeneity of variance was met, then the robust test of equality means and the information for the Games-Howell post hoc test would have been ignored.

Nevertheless, the assumption of variance homogeneity was violated (p -value less than .05), so the analysis was conducted using a robust test of equality means. Since the adjusted F ratio was significant, the null hypothesis was rejected based on the conclusion that at least one of the group means was significantly different from the others. Next, the Games-Howell post hoc follow-up test was used to compare all possible combinations of group differences. Each

statistical analysis was conducted through a Statistical Package for the Social Sciences (SPSS), which is a statistical analysis program. This study also examined the regression model diagnostics to ensure the validity of the model results. With large samples, the analysis included effect sizes, coefficients, R-squared for ANOVA, and interaction plots in addition to p -values. Small sample size data were removed because they reduced the study's power and increased the margin of error, potentially rendering the study meaningless.

An ANCOVA was also conducted in order to evaluate whether the means of the Black male gifted identification rates (dependent variable) were equal across schools located in varying geographical regions (categorical variables), while statistically controlling for the effects of varying overall enrollment counts of Black males (covariates). The analysis of covariance refines estimates of experimental error and uses adjusted treatment effects for any differences between the Black male identification (i.e., treatment group) that existed before experimental treatments were administered, and as such, helps to eliminate confounding variables. In general, this study performed an ANCOVA to test for differences between the predicted means of Black male identification rates to determine if an extraneous variable affected the outcome variable. The following section lists each research question, describes the statistical procedure used to answer the research question and presents the findings (answers to) each research question.

Question One: How do Black male gifted identification rates in Georgia compare across school-level education (i.e., elementary, middle, and high schools)?

$$\widehat{idrate} = \beta_0 + \beta_1(middle) + \beta_2(high)$$

For the first research question, an ANOVA was used to determine the statistical significance of the relationship between categorical independent variables and one continuous dependent variable. As shown in the equation above, the continuous independent variable is the

gifted identification rate, and the categorical independent variables are the following school levels: elementary school (1), middle school (2), and high school (3). Notably, four (0.22%) schools that housed all grade levels K-12 were removed due to the small sample size of data, which reduced the study's power and increased the margin of error. One or more school levels are hypothesized to influence the gifted identification rate of Black males, whereas the other group(s) serves as a control group and is not expected to influence the gifted identification rate. The reference group is elementary (i.e., the intercept).

Thus, the elementary group predicts the identification rate for elementary, while the slope for the middle school group predicts the change in identification rate for the middle relative to elementary. The slope for the high school group predicts the change in identification rate for high schools compared to elementary schools. The assumptions of the ANOVA test are the same as those of any parametric test. When performing an ANOVA test, it is assumed that there is no relationship between subjects in each sample (e.g., subjects in the first group are not in the second group) and that the gifted identification rate is normally distributed, with middle scores being more frequent and extreme scores being less frequent. Finally, the variances in the samples must be equal or homoscedastic, which means that the deviation scores should be similar across populations. Given that the samples were not equal or homoscedastic, a robust test of equality of means and the Games-Howell post hoc test was performed. When computing the results of ANOVA, an f-test is also performed, which illustrates the overall fit of the model.

Question Two: How do Black male gifted identification rates in Georgia compare to varying total enrollment counts of Black males?

$$\widehat{idrate} = \beta_0 + \beta_1(enrollment)$$

For research question two, a simple linear regression was performed to predict the variability of the gifted identification rate using information about the total enrollment size of Black male students. A linear regression line has an equation of the form $Y = a + bX$, where X is the explanatory variable (i.e., total enrollment size) and Y is the dependent variable (i.e., gifted identification rate). The slope of the line is b and a is the intercept (the value of y when $x = 0$). When performing a simple linear regression, we make the following four assumptions: 1) the relationship between X and Y must be linear, 2) Y must be independent of errors, 3) residuals must be approximately normally distributed, and 4) residual variance equals all values of X . As seen in the equation above, the gifted identification rate is a function of the total enrollment size for Black male students; hence:

$\beta_1 > 0$ indicates that the id rate increases as enrollment increases.

$\beta_1 < 0$ indicates that the id rate decreases as enrollment increases.

$\beta_1 \approx 0$ indicates that the id rate does not change as enrollment changes.

Question Three: How do Black male gifted identification rates in Georgia compare to schools with varying SES school status (Title 1 versus non-Title)?

$$\widehat{idrate} = \beta_0 + \beta_1(title1)$$

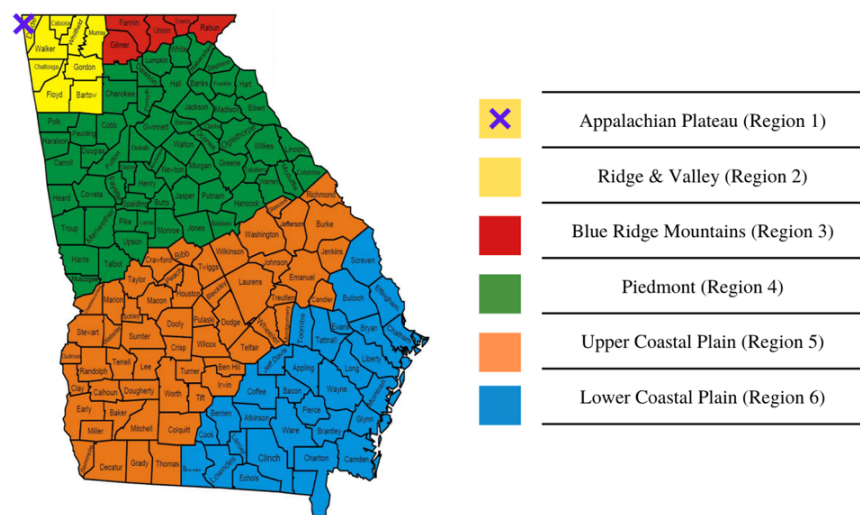
Analogous to research question one, research question three used a one-way ANOVA to determine if a statistical difference existed in the predicted gifted identification rates between the means of Non-Title 1 and Title 1 schools. In the equation above, Non-Title 1 schools are the reference group (i.e., intercept). The intercept predicts the gifted identification rate for Non-Title 1 schools, and the slope for Title 1 schools predicts the change in the gifted identification rate for Title 1 schools, relative to Non-Title 1 schools. The continuous independent variable is the gifted

identification rate, and the categorical independent variables are the socioeconomic statuses of Non-title 1 and Title 1 schools.

Question Four: How do Black male gifted identification rates compare for Georgia's schools of varying physiographical regions?

$$\widehat{idrate} = \beta_0 + \beta_1(region2) + \beta_2(region3) + \dots + \beta_5(region4)$$

An ANOVA was also used to answer the fourth research question. By performing an ANOVA, the results were analyzed to determine if the gifted identification (i.e., dependent variable) was affected by the geographical regions (i.e., categorical independent variables) in which Black male students were enrolled. Region two (Ridge and Valley) is the reference group, and all parameters are relative to region two. Each Georgia school was assigned to one of the six geographical regions based on the county in which they were located during the academic year 2021-2022. Georgia is commonly divided into five or six physiographic regions, depending on whether the upper and lower Coastal Plains are combined or separated. For this study, the Coastal Plains were separated by upper and lower regions (see Figure 3.2); therefore, the physiographic regions were coded as follows: 1) Appalachian Plateau, 2) Ridge and Valley, 3) Blue Ridge Mountains, 4) Piedmont, 5) Upper Coastal Plain, and 6) Lower Coastal Plain. Due to small sample sizes, regions one (Appalachian Plateau) and three (Blue Ridge Mountain) were eliminated, leaving four physiographical regions in the data collection, and resulting in 608 non-Title schools and 1,433 Title 1 schools, which totaled 2,041 schools.

Figure 3.2*Georgia's Physiographical Regions*

Note. Appalachian Plateau and the Blue Ridge Mountains were removed due to small sample sizes.

Question 5: Do any of the predictors above interact?

For question five, the following predictors were tested for possible interactions a) the varying socioeconomic status of schools and their physiographic regions, b) varying school levels (i.e., elementary, middle, and high schools) and their physiographic regions, and c) the varying overall enrollment counts of Black males and the physiographic regional location of the schools in which they attend. An ANOVA was performed for parts A and B to analyze the difference among means of the multiple predictors for homogeneity.

For part A, the results were analyzed to determine if the gifted identification rate for Black males (i.e., dependent variable) was affected by an interaction of categorical variables between a school's socioeconomic status (Title 1 or non-Title 1) and its regional location (see equation above). The same procedure was used for part B to determine if Black male gifted enrollment rates differed depending on the schools' level and physiographical region location

(see equation above). Next, for part C, $\hat{y} = \alpha + bX$, a one-way ANCOVA was conducted to determine a statistically significant difference between varying physiographical regions (i.e., independent/categorical variables) on the gifted identification rates for Black males (i.e., dependent/continuous variable) controlling for the total enrollment counts for Black males (i.e., covariate) (see equation above).

Results

Question One: How do Black male gifted identification rates in Georgia compare across school-level education (i.e., elementary, middle, and high schools)?

Results of the one-way ANOVA indicate that there was a significant difference in Black male identification rates across school-level types ($F(2, 2057) = 84.443, p < .001, \eta^2 = .076$) (see Table 3.3). Post-hoc comparisons indicated that high schools had higher gifted identification rates than elementary schools ($MD = 7.78, SE = .916, p < .001$), high schools had higher gifted identification rates than middle schools ($MD = 3.44, SE = 1.03, p = .003$), and middle schools had higher rates than elementary schools ($MD = 4.34, SE = .564, p < .001$) (see Table 3.4). Levene's test revealed that the assumption of homogeneity of variance had been violated, $F(2, 2057) = 128.89, p < .001$, so Welch's F was reported. Welch's results showed that the school-level types significantly affected the gifted identification rates of Black males, $F(2, 664) = 60, p < .001$

Table 3.3

Means, Standard Deviations, and One-Way ANOVA Descriptive for Black Male Gifted Identification Rates Across School Level Types

School Level	N	GATE ID RATE		$F(2, 670)$ = 59	η^2 .076
		M	SD		
Elementary	1217	4.58	7.43	(0.21)	
Middle	454	8.92	11.12	(0.52)	

High	389	12.36	17.58	(0.89)
Total	2060	7.01	11.30	(0.25)

Note. M = Mean; Standard error reported in parentheses; F from Robust tests of equality of means reported, (df1, df2); df = degrees of freedom; Differences among groups were statistically significant when F values were higher than the critical value of 0.05; N = sample size; η^2 = effect size (eta squared based on fixed – effect model).

Table 3.4

Games – Howell Post Hoc Multiple Comparisons of Black Male Gifted Identification Rates Across School Level Types

School Type (I)	School Type (J)	MD (I -J)	SE	Sig.
High	Elementary	7.78	.916	< .001
	Middle	3.44	1.03	.003
Middle	Elementary	4.34	.564	< .001

Note. The standard error (SE) indicated how different the population mean was likely to be from a sample mean; The mean difference (MD) was significant at the 0.05 level.

Question Two: How do Black male gifted identification rates in Georgia compare to varying total enrollment counts for Black males?

$$\widehat{idrate} = -0.794 + 0.057(enrollment)$$

A simple linear regression was calculated to predict Black male gifted enrollment rates based on the varying total enrollment counts for Black males (see Tables 3.5 & 3.6). A significant regression equation was found $F(1, 2069) = 1775, p < .001$, with a R^2 of .46. The significant change in gifted identification rates for Black males was due to their total enrollment count, $t(2069) = 42, p < .001$. With a 1% increase in their total enrollment count, the predicted Black male gifted identification rate will increase by 0.057%. Approximately 46% ($R^2 = 0.46$) of Black male gifted identification rates can be explained by their total enrollment count.

Table 3.5

The Effect of the Total Black Male Enrollment Count on Black Male Gifted Identification Rates

	β	SE B	t	p
(Constant)	-0.794	0.259	-3.065	.002

TOTENR COUNT	0.057	0.001	42.126	< .001
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Note. SE = standard error.

Table 3.6

Model Summary of the Correlation between Gifted Identification Rate and Total Enrollment Count of Black Males

	M	SD	<i>r</i>	R²	R²_{adj}	<i>F</i> (1,2069)	Sig.
GATE ID RATE	6.97	11.28					
TOTENR Count	135.54	133.84	0.679	0.462	0.461	1775	< .001

Note. Predictors: (Constant), Black male total enrollment count (TOTENR COUNT); M = Mean; SD = Standard Deviation; *R* = Pearson Correlation, a value greater than 0.4 was taken for further analysis; *R*² value greater than 0.5 showed that the model was effective enough to determine the relationship between the dependent and independent variables.

Question Three: How do Black male gifted identification rates in Georgia compare to schools with varying SES status (i.e., Title 1 versus Non-Title)?

$$\widehat{idrate} = 9.57 - 3.7(title1)$$

As shown in Table 3.7, non-Title 1 (M = 9.57, SE = 0.57) schools had higher Black male gifted identification rates than Title 1 schools (M = 5.87, SE = 0.25). The one-way ANOVA found a statistically significant difference in Black male gifted identification rates between Title 1 and Non-Title 1 schools, $F(1, 2069) = 48$, $p < .001$. However, Levene's test indicated that the assumption of homogeneity of variance had been violated, $F(1, 2069) = 67$, $p < .001$, so the degrees of freedom were adjusted from 2069 to 858. Based on Welch's *F*, varying socioeconomic school status had a significant effect on Black male gifted identification rates, $(F(1, 858) = 35, p < .001, \eta^2 = .023)$.

Table 3.7

Means, Standard Deviations, and One-Way ANOVA Descriptive for Black Male Gifted Identification Rates Compared to School Socioeconomic Status (SES)

School SES	N	GATE ID RATE		<i>F</i> (1, 858)	η^2
		M	SD		
Non-Title 1	617	9.57	14.28	35 (0.57)	.023

Title 1	1454	5.87	9.53	(0.25)
Total	2071	6.97	11.28	(0.25)

Note. *M* = Mean; *SD* = Standard Deviation; Standard error reported in parentheses; *F* from Robust tests of equality of means reported, *F*(*df*₁, *df*₂); *df* = degrees of freedom; *N* = sample size; η^2 = effect size (eta squared).

Question Four: How do Black male gifted identification rates compare for Georgia's schools of varying physiographical regions?

The one-way ANOVA presented a statistically significant difference in Black male gifted identification rates between Georgia's schools of varying physiographical regions, $F(3, 2041) = 39, p < .001$. Levene's test indicated that the assumption of homogeneity of variance had been violated, $F(3, 2041) = 53.112, p < .001$. A robust test of equality of means was performed, which adjusted the degrees of freedom from 2041 to 726. Based on Welch's *F*, Georgia's schools of varying physiographical regions significantly affected the gifted identification rates of Black males, $F(3, 726) = 160, p < .001, \eta^2 = .054$ (see Table 3.8). Post-hoc comparisons indicated that Ridge and Valley had lower gifted identification rates than Piedmont ($MD = -7.99, SE = 0.39, p < .001$), Ridge and Valley had lower gifted identification rates compared to both Upper Coastal Plain ($MD = -3.11, SE = 0.33, p < .001$) and Lower Coastal Plain ($MD = -4.18, SE = 0.46, p < .001$), Piedmont had higher gifted identification rates than Upper Coastal Plain ($MD = 4.88, SE = 0.47, p < .001$) and Lower Coastal Plain ($MD = 3.82, SE = 0.57, p < .001$), and the Upper Coastal Plain had slightly lower gifted identification rates compared to the Lower Coastal Plain ($MD = -1.07, SE = 0.52, p = .171$) (see Table 3.9).

Table 3.8

Means, Standard Deviations, and One-Way ANOVA Descriptive for Black Male Gifted Identification Rates Across Georgia's Physiographical Regions

School Region	N	GATE ID RATE		<i>F</i> (3, 726)	η^2
		M	SD		
Ridge & Valley	144	0.92	1.81	(0.15)	

Piedmont	1304	8.92	13.16	(0.36)
Coastal Plain – U	344	4.03	5.41	(0.29)
Coastal Plain – L	253	5.09	6.87	(0.43)
Total	2045	7.06	11.33	(0.25)

Note. Upper (U) and Lower (L) Coastal Plains reported; *M* = Mean; *SD* = Standard Deviation; Standard error reported in parentheses; *F* from Robust tests of equality of means reported, (*df*₁, *df*₂); *df* = degrees of freedom; *N* = sample size; η^2 = effect size (eta squared based on fixed – effect model).

Table 3.9

Games – Howell Post Hoc Multiple Comparisons of Black Male Gifted Identification Rates Across Georgia’s Physiographical Regions

School Region (I)	School Region (J)	Mean Diff. (I -J)	SE	Sig.
Ridge & Valley	Piedmont	-7.99	0.39	< .001
	CP-U	-3.11	0.33	< .001
	CP-L	-4.18	0.46	< .001
Piedmont	CP-U	4.88	0.47	< .001
	CP-L	3.82	0.57	< .001
Coastal Plain – U	CP-L	-1.07	0.52	.171

Note. The standard error (SE) indicated how different the population means was likely to be from a sample mean; CP-L = Coastal Plain-Lower; CP-U = Coastal Plain-Upper; The mean difference was significant at the 0.05 level.

Question Five: Do any of the predictors above interact?

Question five investigates how Georgia’s physiographical regions interact with all other predictors. More specifically, question five is divided into three subsidiary research questions: a)

Is there a significant interaction between schools’ varying physiographical regions and socioeconomic status that influence Black male gifted identification rates? B) Is there a significant interaction between schools’ varying physiographical regions and school-level education that influence Black male gifted identification rates? And c) Is there a significant difference between gifted identification rates for Black males attending schools of varying physiographical regions when controlling for the overall enrollment rates for Black males?

Below is the reporting of results for each of the subsidiary research questions.

Part 5A: Is there a significant interaction between schools' varying physiographical regions and socioeconomic status that influences Black male gifted identification rates?

A two-way ANOVA revealed that there was not a statistically significant interaction between the effects of schools' varying physiographical regions and socioeconomic status ($F(3, 2033) = .409, p = .747$) (see Table 3.10). A pairwise comparison revealed that the mean difference between Non-Title 1 and Title 1 schools was significant in Piedmont (see Table 3.11). The interaction plot shown in Figure 3.3 suggests that gifted identification rates were lower for Black males in Title 1 schools across all physiographic regions.

Table 3.10

Descriptive Statistics for Schools' Physiographical Region & Socioeconomic Status

School Region	SES	Mean	SD	N	Sig.	F(3, 2033)	η^2
Ridge & Valley	Non-Title 1	1.15	1.81	27	0.00	.409	.065
	Title 1	0.86	1.81	117	0.32		
Piedmont	Non-Title 1	10.54	15.24	501	0.00		
	Title 1	7.94	11.59	800	0.76		
Coastal Plain – U	Non-Title 1	7.18	7.05	28	0.00		
	Title 1	3.76	5.17	315	0.93		
Coastal Plain – L	Non-Title 1	7.62	9.41	52	0.00		
	Title 1	4.45	5.91	201	0.00		
School Region*SES					.747		

Note. After removing regions one and three due to small sample sizes, the total school count was 2,041; 608 non-Title 1 schools and 1,433 Title 1 schools. SES = Socioeconomic status (Non-title 1 & Title 1); N = Sample size; SD = Standard Deviation; Significant (Sig.) at the 0.05 level; 3= degrees of freedom (df) interaction; 2033 = df within; η^2 = effect size/R squared; The parameter was set to zero by SPSS due to redundancy.

Table 3.11

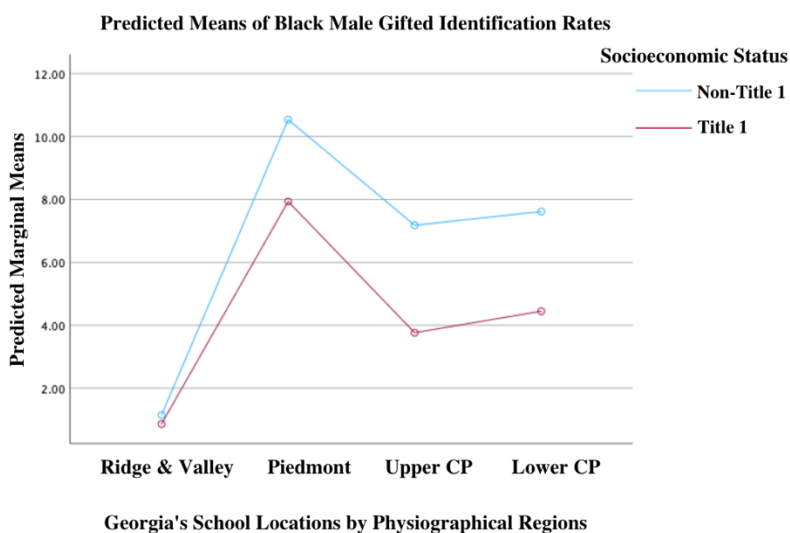
Pairwise Comparisons of Physiographic Regions & Socioeconomic Status

School Region	MD (NT1-T1)	SE	Sig
Ridge & Valley	.285	2.34	.903
Piedmont	2.60	.626	< .001
Upper CP	3.41	2.17	.115
Lower CP	3.17	1.71	.064

Note. MD = Mean difference; the mean difference is significant at the 0.05 level; NT1 = Non-title 1 school; T1 = Title 1 school; SE = Standard error.

Figure 3.3

Interaction between Schools' Varying Geographical Locations and Socioeconomic Status that Influences Black Male Gifted Identification Rates



Note. This line chart is generated from SPSS; the top line represents non-Title 1 schools, and the line below represents Title 1 schools; CP = Coastal Plain.

Part 5B: Is there a significant interaction between schools' varying physiographical regions and school-level education that influence Black male gifted identification rates?

A two-way ANOVA revealed that there was a statistically significant interaction between the effects of the school region and school levels ($F(6, 2029) = 9.17, p < .001$) (see Table 3.12).. The interaction plot shown in Figure 3.4 indicates that there is a greater difference in the predicted gifted identification rates for Black males in elementary schools when compared to the rates of middle and high schools located in the Piedmont region. This is also shown in the pairwise comparison of school regions and school levels. With a significance level of $p < .001$,

there is a significant difference between Black male identification rates for Piedmont across all school levels (Table 3.13).

Table 3.12

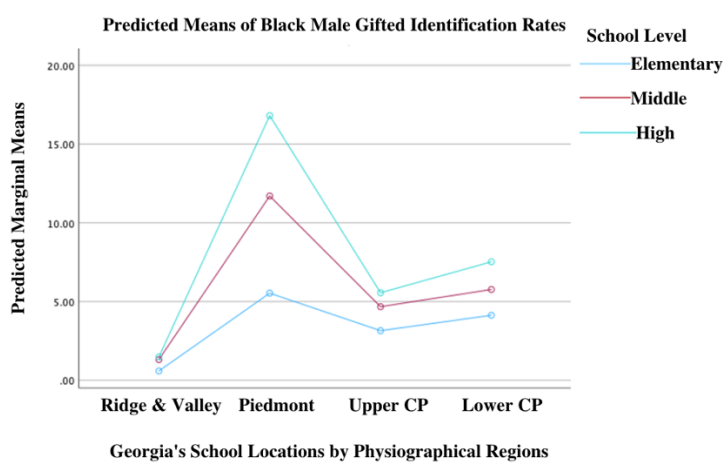
Descriptive Statistics & Between Subjects Effects: School Levels & Physiographical Regions

School Region	Comparison	M	SD	N	Sig.	<i>F</i> (3, 2033)	η^2
R & V	Elementary	0.59	1.31	85	< .001	9.17	.165
	Middle	1.31	2.58	32			
	High	1.48	1.91	27			
Piedmont	Elementary	5.53	8.45	779			
	Middle	11.7	12.7	285			
	High	16.8	20.4	237			
UCP	Elementary	3.15	4.03	188			
	Middle	4.67	4.94	76			
	High	5.56	7.85	79			
LCP	Elementary	4.13	6.11	152			
	Middle	5.76	5.95	55			
	High	7.52	9.34	46			

Note. After removing regions one and three due to small sample sizes, the total school count was 2,041; R & V = Ridge & Valley; UCP = Upper Coastal Plain; LCP = Lower Coastal Plain; SR *SL = Interaction between school region and school level; N = Sample size; SD = Standard Deviation; M= Mean/Proportions.

Figure 3.4

Interaction Between School Levels & Physiographical Regions



Note. This line chart is generated from SPSS; the bottom line represents elementary schools, the middle line represents middle schools, and the top line below represents high schools; CP = Coastal Plain.

Table 3.13*Pairwise Comparison of School Region & School Level*

School Region	SL (I)	SL (J)	MD (I-J)	SE	Sig.
Ridge & Valley	Elementary	Middle	-.724	2.17	1.00
		High	-.893	2.31	1.00
	Middle	High	-.169	2.73	1.00
Piedmont	Elementary	Middle	-6.17	.723	< .001
		High	-11.27	.775	< .001
	Middle	High	-5.10	.918	< .001
Upper CP	Elementary	Middle	-1.52	1.42	.851
		High	-2.41	1.40	.257
	Middle	High	-.886	1.68	1.00
Lower CP	Elementary	Middle	-1.64	1.64	.956
		High	-3.39	1.76	.160
	Middle	High	-1.76	2.09	1.00

Note. SL = School level; MD = Mean difference; the mean difference is significant at the 0.05 level; SE = Standard Error.

Part 5C: Is there a difference between gifted identification rates for Black males attending schools of varying physiographical regions when controlling for the total enrollment counts for Black males?

$$\text{Ridge \& Valley: } \hat{\gamma} = 0.097 + .036(\text{enrollment});$$

$$\text{Piedmont: } \hat{\gamma} = -.422 + .063(\text{enrollment});$$

$$\text{Upper Coastal Plain: } \hat{\gamma} = -.056 + .027(\text{enrollment});$$

$$\text{Lower Coastal Plain: } \hat{\gamma} = -.359 + .046(\text{enrollment})$$

There is a significant effect of varying physiographic regions on the gifted identification rates for Black males after controlling for Black male total enrollment counts, $F(3, 2033) = 24.39, p < .001$ (see Table 3.14). Comparing the estimated marginal means showed that the effect of total enrollment for the predicted gifted identification rates for Black males was highest in the physiographic region of Piedmont and lowest in the Upper Coastal Plain (see Figure 3.5).

Table 3.14

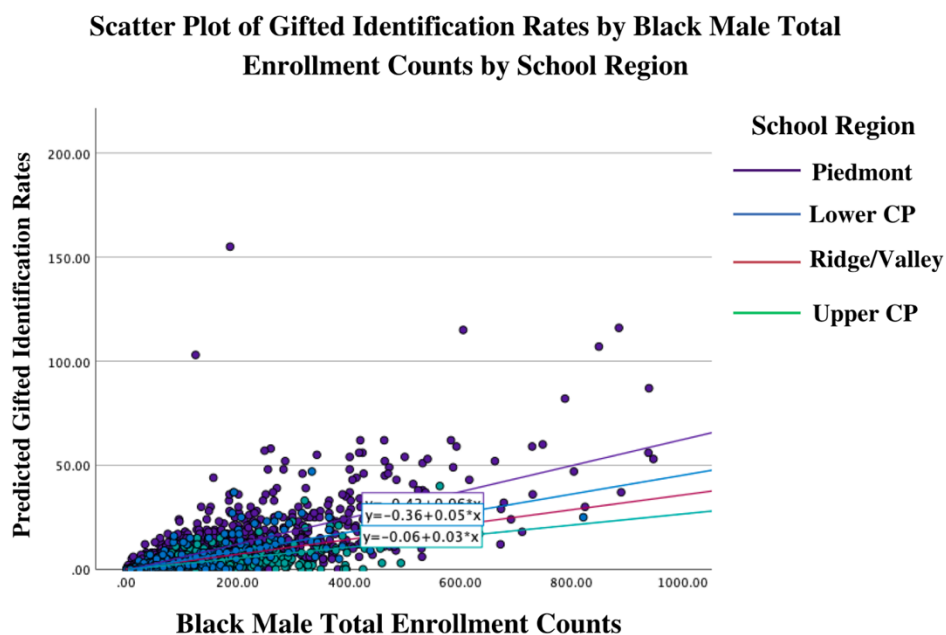
ANCOVA: Between-Subjects Effects of School Physiographic Region on the Gifted Identification Rates for Black Males Controlling for Total Enrollment Count for Black Males

Predictor	Sum of Squares	df	Mean Square	F	Sig.
Intercept	18.14	1	18.14	.285	.594
School Region (SR)	32.21	3	10.74	.169	.918
Total ENR Count (TEC)	5096.31	1	5096.31	79.99	< .001
SR*TEC	4663.66	3	1554.55	24.34	< .001
Within		2033	63.713		

Note. R Squared = .506; Adjusted R Squared = .504; df = degrees of freedom; ENR = Enrollment; TEC = Total Enrollment Count; Significant (Sig.) at the 0.05 level.

Figure 3.5

Interaction Between Black Male Total Enrollment Counts & Physiographical Regions



Note. Values in linear equations are rounded to the nearest tenth; CP = Coastal Plain; School regions are divided by Georgia's physiographic provinces.

Discussion

Proportional representation of students from minority race students and those from lower socioeconomic backgrounds remains a critical issue in gifted and talented education (GATE)

programs (Frasier, 1997; Ford, 2014; Hodges & Gentry 2021). In 1994/1995, Georgia mandated multiple criteria assessment practices for GATE programs to increase the gifted and talented identification of underserved students (Humble, 2018). Despite the mandate, underrepresentation of racially and culturally diverse groups continues to occur and Black males are often one of the most persistently underrepresented groups in GATE (Ford et al., 2008a; Grantham, 2011; Ford & Moore, 2013). For instance, based on 2016 data, Gentry et al. (2019) reported that Black students in Georgia had inequitable access to GATE and Bullard et al. (2022) discovered that Black females in Georgia were underrepresented but more likely to be identified for GATE than Black males according to 2017 – 2018 school data.

Some researchers argue that Black males are seldom considered for teacher referrals to gifted education programs because of teachers and school administrators who harbor implicit biases against them (Frasier, 1997; Grantham, 2013; Grissom & Redding, 2016; Wright & Ford, 2019). To that end, implicit biases toward Black males are associated with deficit thinking and stereotypes such as violent, aggressive, uninspired, hypersexual, and even criminal (James, 2012; Smith & Hope, 2020). According to Morgan (2020) and Davis et al. (2020a, 2020b), Black students from lower socioeconomic backgrounds and rural areas face additional barriers to gifted education programs, including harsh or less stimulating living environments, distance from concentrated enrichment resources, and the historical legacy of segregated, low-resource schools. While this current study only examines school-level factors that influence Black male identification rates in Georgia, the concepts and research design are transferable to other student populations and specialized education programs.

On the question of how Black male gifted identification rates in Georgia compare across elementary, middle, and high schools, this study found that Black male gifted identification rates

increased as the school levels increased. Georgia high schools had more gifted-identified Black males than middle and elementary schools, and as a result, middle schools had more gifted Black males than elementary schools. Although more research is needed to confirm, this conclusion may be explained by 1) the COVID-19 outbreak and/or 2) research question two, which asked, “How do Black male gifted identification rates in Georgia compare to varying total enrollment counts for Black males?” if the overall school enrollment of Black males increased over time by school level. For instance, the initial gifted identification process is most often conducted in elementary schools, but the COVID-19 outbreak caused schools (e.g., primary/elementary) to close their doors for more than a semester and convert to virtual learning. Instead of teachers observing students in person for potential giftedness, lectures, and assignments were delivered online, both asynchronously and synchronously, forcing some teachers to redirect their focus to adapt to the abrupt change in educational settings. Even when schools chose to reopen, several provided hybrid schooling in which only a fraction of students attended in person while the others remained online.

Therefore, many K-12 students were physically absent from school, and teachers and administrators frequently missed work due to contracting COVID-19 or caring for an ill household member(s), grieving the critical illness or death of a loved one, and/or mental health issues caused by unexpected events surrounding COVID-19. Thus, with decreased in-person student enrollment and more frequent time off for teachers and school administrators, it is expected that new gifted referrals declined, and gifted testing ceased for an extended period of time. In terms of how question two might explain the conclusion of question one, I consider Georgia's increased population post-COVID-19. According to annual Census Bureau data, Georgia's population rose between July 2020 and July 2021. The state's population was roughly

10.8 million in 2021, an increase of over 74,000 residents since 2020, which is approximately 0.7%. Georgia was also ranked number eight among the top ten most populous states and number four in numeric growth for 2021-2022, with a population of over 10.9 million residents (USCB, 2022). To confirm this rationale, a comparison of gifted primary/elementary students' percentages to secondary school students who were newly enrolled in Georgia schools during the COVID-19 epidemic is required.

Furthermore, the results of question two revealed a positive relationship between Black male gifted identification rates and total enrollment count, indicating that both variables tend to move in the same direction. As the overall representation of Black males in schools increased, so did their predicted gifted enrollment. On the other hand, the findings from question three suggest that when comparing Georgia's Title 1 schools to non-Title 1 schools, the average percentage of Black males identified for GATE was higher in the non-Title I schools even though there were less non-Title 1 schools. This result reflects those of Morgan (2020) and Donovan and Cross (2002) who also found that wealth disparities contribute to underrepresentation in gifted education because wealthier parents are more aware of the identification and appeal processes and can afford the costly expenses associated with alternative assessments (if applicable) and out-of-school tutoring and/or enrichment services. The authors added that students from low-income households tend to live in harsh conditions, putting them at risk for malnutrition, which can lead to poor literacy development. Also, according to Ford (1998), low-income and culturally diverse students are often taught by less qualified teachers who are adequately trained in giftedness and gifted education. Lastly, question four examined how Black male gifted identification rates compared for Georgia's schools of varying physiographical regions. The state of Georgia is commonly divided into five or six physiographical regions: 1) Appalachian

Plateau, 2) Blue Ridge Mountains, 3) Ridge and Valley, 4) Piedmont, and 5) Coastal Plains, which is sometimes divided into categories of upper and lower.

However, the Appalachian Plateau and the Blue Ridge Mountains were removed from the study's dataset due to small samples to avoid possible inconclusive results. The region of Ridge and Valley is a small, rural region located between Appalachian Plateau and the Blue Ridge Mountains and is known as forests and fertile valleys that provide land for cattle and crops. The Coastal Plains (upper and lower) is a major agricultural region and sparsely populated with small cities and towns. The region of Piedmont contains half of Georgia's population, primarily in its capital city of Atlanta, and offers plenty of industries, jobs, and tourist attractions. Thus, as anticipated, Piedmont yielded the highest gifted identification rates of Black males compared to other physiographical regions in Georgia. This study confirms that low gifted identification rates are associated with schools located in rural areas (E. F. Floyd et al., 2008a; Davis et al., 2020a). Previous research also found that poverty was a significant factor in rural Black students' underrepresentation in GATE, which was exacerbated by a lack of qualified educators available to meet the needs of all rural students (E. F. Floyd et al., 2008a; Hemmler et al., 2022).

This study also examined the interactions between Georgia's physiographical regions with all other predictors, such as socioeconomic status, school levels, and Black males attending schools of varying physiographical regions when controlling for the total enrollment counts. There were no significant interactions between the effects of schools' varying physiographical regions and socioeconomic status. Gifted identification rates for Black males in Title 1 were lower across all physiographic regions, while the mean difference between non-Title 1 and Title 1 schools was significant in Piedmont. There was a statistically significant interaction between the effects of the school region and school levels, and there was a greater difference in the

predicted gifted identification rates for Black males in elementary schools when compared to the rates of middle and high schools located in the Piedmont region. Such findings resemble those of questions one and four, which indicate that the predicted gifted identification rates increase within the higher school levels. The predicted gifted identification rates for Black males were also higher within schools located in urban areas compared to rural areas. For instance, when comparing the estimated marginal means, the predicted gifted identification rates for Black males were highest in the physiographic region of Piedmont (e.g., urban/larger cities) and lowest in the Lower Coastal Plain (e.g., rural/smaller towns).

Implications

A wealth of research has found that GATE programs across the nation have fallen into inequitable categories with Black males as frequent subjects of marginalized populations. Grantham (2013) informed that according to reports published by the Office of Civil Rights since 1998, “when comparing Georgia public school and gifted program enrollments among males by race, the under-representation for Black males is the greatest negative discrepancy when comparing their school and gifted program enrollments to other males of different races” (p. 521). Comparable to the findings of Grantham (2013), Gentry et al (2019), and Davis et al. (2020a), the results of this study indicate that Black males are subjected to inequitable access to Georgia’s gifted education programs between Title 1 and non-Title 1 schools and schools of rural areas during the academic year 2021 – 2022. It is critical to identify the factors that contribute to this issue, and as such, the current data have significant implications for understanding why there is a need for courageous conversations around race, and routine district and state educational equity checks that lead to planning and taking action toward increasing (or maintaining) equitable representation.

By utilizing disaggregated data to examine school-level factors, this study discovered that Georgia elementary schools had the fewest gifted-identified Black males compared to middle and high school. Nonetheless, this finding may be explained by the COVID-19 outbreak considering that the initial process for gifted referrals and testing occurs in elementary schools, thereby, reducing new gifted referrals. The sample data also indicated that Black males were less likely to be identified in schools located in rural regions compared to more populated areas. This discovery necessitates more research comparing gifted programs and practices within schools located in rural regions. This combination of findings suggests that there is an urgent need to demonstrate evidence of adequate allocation of gifted resources and training across schools of varying socioeconomic status and region types rather than simply discussing the importance of diversity, equity, and inclusion. A major issue that emerged from this study is the consistent findings of inequitable gifted representation over decades of research (Frasier; 1997; Ford, 1998; Elhoweris et al., 2005; Mcbee, 2006; Ford et al., 2008a; Grissom & Redding, 2016; Gentry et al., 2019) Taken together, the commonality in past and present findings reveal that more work is needed to eliminate inequitable access to gifted education, which continues to impede underserved groups' educational experiences and puts them at risk of poor identity development as scholars and future contributors to society. Although this study focuses on the gifted identification rates of Black males, the findings also have a bearing on other special population groups (i.e., underserved, marginalized students) across various educational programs.

Limitations

It is worth noting that the scope of this study may be limited by post-COVID-19 data. The COVID-19 pandemic forced numerous schools to close for more than a semester and transition to virtual learning. K-12 teachers, administrators, and students were physically absent

from school, likely resulting in a decrease in gifted referrals and a temporary discontinuation of gifted testing. Nonetheless, while COVID-19 may have impacted new gifted referrals, the data still reflect the most recent percentages of gifted-identified Black males prior to the COVID-19 outbreak. The data include four of Georgia's physiographic regions; however, it does not account for the number of rural and urban schools located within each of the regions. Also, because this is a quantitative study, it is necessary to address a common limitation of quantitative data.

Quantitative research approaches typically provide a snapshot of a phenomenon, which implies that human experiences that can provide detailed explanations of a phenomenon are not captured. To this end, I agree that qualitative research would be beneficial because it is based on meaning-making and captures the complexity and depth of the phenomenon under investigation (T. N. Ford & Goger, 2021). On the other hand, by acquiring statistical data from large samples, this study still raises awareness of the state of Georgia's persistent underrepresentation of Black males in gifted education programs. Hence, despite its limitations, this study offers valuable insight into school-level factors that influence Black male gifted identification rates, which can be applied to other marginalized populations across advanced K-12 education services.

Recommendations

This study enhances our knowledge of the school-level factors that influence Black male gifted identification rates, which can be extended to other underrepresented populations in advanced K-12 educational systems. The research findings have also raised additional questions that are recommended for future research. Following the COVID-19 pandemic, Georgia's high schools yielded higher gifted identifications rates for Black males than middle and elementary schools. Because the initial phase of gifted identification occurs in elementary schools, a comparison of pre and post-COVID-19 gifted referrals in Georgia's elementary schools would

aid in determining the extent to which COVID-19 may have contributed to Black male underrepresentation in gifted education programs. To gain a deeper understanding of the gifted identification gap between non-Title 1 and Title 1 schools, further investigation on teacher education and training on characteristics of gifted children and gifted education would be useful. Particularly, it would be beneficial to examine how non-Title 1 teacher gifted endorsement rates compare to teachers in Title 1 schools.

Moreover, the study's findings suggest that low gifted identification rates for Black males are associated with regions with more rural schools, implying that more research on gifted equity levels among diverse students enrolled in rural schools versus urban schools is needed. In hopes of developing a more thorough understanding of racial inequities in gifted education, I recommend expanding this study to include minority and majority races of both males and females. Prior research has shown that inequitable access to gifted education is reflected in advanced mathematics and science courses; thus, a replication of this study for advanced placement rates is also advised. Lastly, previous research has called attention to implicit biases and low expectations toward minority races and students of low socioeconomic status.

Utilizing the Implicit Bias Association Test, which is extensively used in the medical profession, may encourage educational stakeholders to engage in courageous conversations about race, class, and education (Boysen, 2010; Sukhera & Watling, 2018; Donahue-Keegan et al., 2019).

Courageous conversations can offer a deeper understanding of the importance of inclusion and awareness of racial and income inequities (Singleton & Hays, 2008). Thus, implementing equity applications and frameworks, like DEGS, may result in greater positive buy-in from school administrators and teachers (Bullard et al., 2022; Grantham et al., 2023).

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CHAPTER 4

WHERE ARE THE GIFTED BLACK BOYS? EDUCATIONAL REFLECTIONS OF THREE
HIGH-ACHIEVING BLACK MALE MEDICAL PHYSICIANS

Black males' representation within gifted and talented programs (GATE) has been historically and consistently inequitable (Ford, 2011a; Grantham, 2011; Grantham, 2013). The underrepresentation of Black boys in GATE is problematic because students risk falling short of their potential if they do not have access to education programs that meet their needs (Bullard et al., 2021; Bullard et al., 2022). "Gifted and high-potential African American males' low achievement is often a function of what takes place in schools relative to attitudes, policies, and practices (e.g., low educator expectations, deficit thinking, racism, sexism, irrelevant curricula, poor quality, and culturally incompetent educators, few or no resources, etc.)" (Ford & Moore, 2013, p. 401). Particularly, the belief (or attitude) that Black students are incompetent at taking part in intellectual undertakings, combined with mainstream European portrayals of gifted and talented individuals, leads to deficit beliefs toward Black students being identified as gifted (Frasier, 1997; Whiting & Ford, 2009). To that end, a multitude of studies has revealed that Black students have been historically and actively marginalized in advanced education programs and being Black and male exacerbates marginalization due to being unfairly subjected to negative stereotypes and implicit biases (Ford et al., 2008a; Grantham, 2013; Whiting & Ford, 2009; Davis et al., 2019; Bullard, 2023). Even as preschoolers, Black boys are overrepresented in suspension and expulsion; for example, Gilliam et al. (2016) informed that Black preschoolers were 3.6 times as likely to receive one or more suspensions relative to White preschoolers, and similarly, boys were three times as likely as girls to be suspended one or more times. Ford and Wright's 2019 study yielded a comparable finding, which revealed that Black boys represented

19% of preschool enrollment, but 45% received out-of-school suspensions. Wright and Ford (2019) also asserted that “this focus on disciplining Black boys under the facade of supporting their social and emotional development is frequently at the expense of fostering a healthy self-identity, racial identity, and academic agency” (p. 21).

Moreover, Ford (2011) reported that Black boys were underrepresented by more than 50% in gifted education programs based on their representation in student bodies as a whole—which constituted roughly 150,000 more Black males who should have been enrolled in gifted or advanced programs (see also Grantham, 2013). What’s more, Grantham (2013) examined 2012 statistical data from the Georgia Department of Education and discovered that Black males represented 36.6% of the male student population in Georgia but their enrollment in gifted program services was 15.6%. Thus, using the Relative Difference in Composition Index (RDCI) to evaluate disproportionality, Grantham’s findings were equivalent to a 40% racial disparity (Ford, 2013; Wright et al., 2017). Recent research shows that trends of inequitable representation among Black males reflect statistics from over ten years prior. Bullard et al. (2022) collected statistical data from the Office of Civil Rights 2017 – 2018 database; the authors’ analysis concluded that although Black girls were also underrepresented in GATE, Black boys were slightly less likely to be enrolled in GATE services compared to their female counterparts.

In response to Bullard et al.’s (2022) findings, a statistical analysis to investigate school-level factors that influence the gifted identification rates of Black males using 2021-2022 data from the Georgia Department of Education (see chapter three). Comparable to previous research, the main conclusions were that the predicted gifted identification rates for Black males were lower for those attending schools of low-socioeconomic status (i.e., Title 1), and schools located in geographical regions comprised of various rural areas. The sample data also revealed that no

matter the physiological region in which Black males were enrolled, the proportion of Black males in gifted education was still lower in Title 1 schools. This could be explained by a combination of implicit bias or low expectations for students of color from low socioeconomic backgrounds, lack of teacher training in the multidimensions of giftedness, the impact of students living in harsher or less stimulating environments, and/or low percentage of minority teachers (Frasier, 1997; Module, 2009; Ford, 2011; Grissom & Redding, 2016). Overall, the study found that Black males were subjected to inequitable access between Title 1 and non-Title 1 schools and rural schools. Though Black males and other special populations of students (e.g., Black girls, Hispanic/Latinx, twice-exceptional, low-income) have the right to advanced academic programs in the American school system, complex and deeply ingrained systemic barriers often impede access (Castellano & Chandler, 2022). For equitable GATE programs to be established, the total enrollment of a certain demographic of students (e.g., Black males) must closely resemble their gifted enrollment no matter the school's socioeconomic status or regional location (Ford, 2011; Ford, 2014; Wright et al., 2017; Wright & Ford, 2017).

Nonetheless, in order to achieve equitable GATE programs, K-12 educators, researchers, and academics must be inspired to push for and implement more inclusive policies and procedures, starting with recognizing multidimensions of giftedness and increasing gifted referrals for Black male students by their teachers. Previous studies dating back to the early 1980's "suggest that the low socioeconomic status (SES), minority group membership, or limited competence in the use of the English language of these children may negatively affect the identification of these children as gifted" (Frasier, Hunsaker, et al., 1995a, p. 7; see also Baca & Chinn, 1982; Bermudez & Rakow, 1990; Bernal, 1980; Dabney, 1988; Leung, 1981; Pendarvis, et al., 1990; Whitmore, 1982). To that end, a considerable percentage of underrepresented groups

may not meet traditional criteria for gifted education; however, they are believed to possess high cognitive, motivational, and creative potential (Frasier, Martin et al., 1995).

There are various factors that could explain the disconcerting statistics of underrepresentation, but research studies using gifted teacher referrals revealed that the widespread low minority student enrollment was not by chance (Grantham, 2013; see also Elhoweris et al. 2005; Ford et al. 2008; McBee 2006). Grantham (2013) explained that the cause of the disproportionate Black male gifted referrals compared to their overall enrollment was “in part, a product of bystanding and benign neglect” (p. 521). The bystander effect happens when educational stakeholders observe high-potential and gifted Black males being denied the most suitable academic rigor for their needs but do nothing to address the issue (Grantham, 2011; Grantham, 2013). Upstanding, on the other hand, is when a troubling or crisis circumstance prompts a thoughtful, intentional, and urgent response to assist someone in need (Grantham, 2011; Grantham, 2013). As seen in Table 4.1, there are five main causes of bystander effects in a crisis, which contribute to Black male disparities within GATE: 1) self-preservation, 2) perceived inability, 3) situation ambiguity, 4) diffusion of responsibility, and 5) pluralistic ignorance.

While all five causes of the bystander effect are attributable to persistent racial groups within gifted and advanced programs, perceived inability (2) and situation ambiguity (3) can be categorized as key factors related to previous research that suggests underrepresentation is caused by a lack of or inadequate teacher training on multicultural education and giftedness (Ford et al., 2001; Grantham, 2013). Perceived inability is defined as the “belief that one lacks skills, competence, or resources to address a crisis,” whereas situation ambiguity is an “unclear

Table 4.1*Causes of bystander effects in crisis and bystander beliefs*

Causes of bystander effects in a Crisis	Bystander beliefs
<p>1. Self-preservation</p> <p>Natural instincts or learned dispositions to remove oneself from harm or situate oneself to seek or sustain benefits in the midst of a crisis.</p>	<p>I need to protect myself from Black males</p> <p>If I get involved, I'll jeopardize my own safety and security</p> <p>I'm afraid I could be harmed (e.g., physically, emotionally, psychologically, financially)</p> <p>I have my own crisis to resolve</p> <p>I have a deadline to meet and can't risk being distracted.</p>
<p>2. Perceived inability</p> <p>Belief that one lacks skills, competence, or resources to address a crisis.</p>	<p>I don't have the skills to effectively address this situation</p> <p>My background knowledge is inadequate</p> <p>She is better able to handle this situation than I am.</p>
<p>3. Situation ambiguity</p> <p>Unclear understanding of circumstances surrounding the evolution or the urgency of the crisis.</p>	<p>I don't really know what is going on</p> <p>I cannot tell if or when these Black male issues can be resolved</p> <p>Is this Black male problem unavoidable or could it be self-imposed?</p> <p>Is this a real problem with Black males or an excuse for more attention?</p>
<p>4. Diffusion of responsibility</p> <p>Disassociating oneself with roles and duties in a crisis situation.</p>	<p>What these Black males are doing or not doing is none of my business. I'm not looking for problems</p> <p>Someone else can/should handle this</p> <p>I'll wait like everyone else to see how this will unfold</p> <p>I'm not going to feel obligated to take action when no one else is either</p>
<p>5. Pluralistic ignorance</p> <p>Using or misinterpreting the surrounding group's response to justify one's avoidance-related feelings, beliefs, and actions about a crisis.</p>	<p>I didn't realize this Black male situation was that bad because everyone seemed to be calm about it</p> <p>Most people continued on their merry way without saying anything just as I did</p> <p>If something would have sounded really serious, I or someone would have said or done something and not avoid it</p>

Note. Table adapted from Grantham (2011) and retrieved from Grantham (2013).

Understanding of circumstances surrounding the evolution or the urgency of the crisis” (Grantham, 2013, p. 522). Ford et al. (2001) examined the factors that contribute to Black students’ ongoing underrepresentation in gifted education and found that educators’ deficit thinking prevented diverse students from accessing gifted programs. Seven major symptoms of deficit thinking were listed as a synopsis of critical issues related to the recruitment and retention of Black students in GATE, two of which were 1) a lack of multicultural preparation among teachers and 2) inadequate teacher preparation in gifted education (see Table 4.2). “At institutions of higher education, most students graduate with a monocultural or ethnocentric curriculum that ill-prepares them to work with culturally, ethnically, and linguistically diverse students” (Ford et al., 2001, p. 55). As a consequence, teachers are at risk of misinterpreting cultural differences and assuming that they lack the expertise or resources (e.g., perceived inability) to teach diverse students in terms of their distinct learning, communication, and behavioral styles (Ford et al., 2001; Grantham, 2011; Grantham, 2013).

Table 4.2

A Synopsis of Critical Issues in Recruitment and Retention of Black Students in Gifted Education

Seven Major Symptoms of Deficit Thinking

- (1) Traditional IQ-based definitions, philosophies, and theories of giftedness.
- (2) Identification practices and policies that have a disproportionately negative impact on Black students (e.g., a reliance on teacher referral for initial screening).
- (3) A lack of training aimed at helping educators in the area of gifted education.
- (4) A lack of training aimed at helping teachers understand and interpret standardized test results.
- (5) Inadequate training of teachers and other school personnel in multicultural education.
- (6) Inadequate efforts to communicate with Black families and communities about gifted education.

(7) Black students' decisions to avoid gifted education programs.

Note. The information provided in Table 2 is adapted from Ford et al. (2001). As noted by Ford et al. (2001), this is by no means a full list, but it does provide an overview of the major symptoms of deficit thinking.

For example, as a journaling assignment in 2017, a former middle school teacher, Mrs. Days (pseudonym), reflected on past teaching experiences while enrolled in a gifted education endorsement program. The following section entails Mrs. Days' written reflection and how the data relates to previous studies on the underrepresentation of Black students and Black males in GATE. Mrs. Days wrote:

As I sat in a Georgia middle school cafeteria full of noisy students, I managed to overhear a Caucasian teacher expressing concern for teaching students of color; they uttered, "It's crazy...when more and more minority students came to this school, no matter how much diversity training they gave us, we still didn't know how to teach those kids." I was perplexed that a teacher felt unqualified to teach a child based on their race, yet it would be unfair to harshly judge since I am not a White teacher teaching a Black child and I did not inquire for more information to better understand the background of this comment. Nonetheless, the comment made me reflect on the disproportionate numbers of advanced/gifted-minority students matched to their enrollment in school and White counterparts placed in my gifted/accelerated course. I speculated if a teacher's deficit attitude towards teaching a Black child impacted their perception of potential gifted characteristics, and therefore resulted in the lack of gifted referrals for Black students.

What stands out in the above reflection is the following quote, "...no matter how much diversity training they gave us, we still didn't know how to teach those kids" as it relates to the perceived inability to teach diverse students (Grantham, 2013). The data may indicate two possibilities: 1) that some higher education institutions do not provide a basis for multicultural teaching and/or 2)

that teachers frequently receive ineffective diversity professional development (Ford et al., 2001; Jayaram et al., 2012). Professional development can boost teacher effectiveness and student accomplishment substantially, but school systems must be deliberate (Jayaram et al., 2012). This is especially true of diversity training, which is complex and necessitates an awareness of contemporary classroom contexts, adult development, institutional change, perspectives of diversity, and professional development methodologies (Knight & Wiseman, 2005).

Equally important, is the aforementioned statement regarding the disproportionate representation of Black students in the collaborative class of gifted and advanced students. Inequitable gifted and advanced education programs are not a new phenomenon, and such occurrences add to a substantial amount of literature that emphasized high suspension rates and disciplinary referrals for Black students (Ford, 1995; Daniels, 1998; Gilliam et al., 2016; C. Bell, 2020). In C. Bell's (2020) qualitative study, the author discovered that Black students felt targeted for suspension. "Participants emphasized out-of-school suspensions were unfair because the punishment was excessive when compared to the infraction" and "students also emphasized that their voices were marginalized in the disciplinary process as school officials denied them the opportunity to explain their perspective" (C. Bell, 2020, p. 4). More telling is Gilliam et al.'s (2016) eye-tracking study; the authors found that when expecting challenging behaviors, teachers gazed longer at Black children, especially Black boys. As a result, Gilliam et al. contend that implicit bias is a plausible explanation for discrepancies in expulsions as early as preschool. C. Bell's (2020) and Gilliam et al.'s (2016) findings are attributable to the following observation from Mrs. Days' (2017) reflection:

The growth of my speculation continued as I often heard the following phrase used to describe the fate of young Black males who misbehaved in class: "I hate to say it, but a

kid like that...jail is where he'll end up." Noteworthy, this comment and its frequency caused continuous confusion when White male students displayed similar misbehaviors, but yet received *warnings* and *emotional and social support* because such teachers proposed that their misbehaviors were a reflection of problems at home or with a close peer(s). The stereotypical labels consigned to the misbehaviors for Black boys projected in my mind the young boyish Black face of my brother — I wondered how he was perceived by his teachers. While obtaining my gifted teaching certification, I noticed that some of the characteristics taught as indicators for gifts and talents, were very similar, if not identical, to my brother.

When teachers judge and/or punish children differently based on their race, it suggests not only implicit biases but also that their actions are influenced by deficit thinking. Deficit thinking occurs in educational settings when the alleged deficiencies of low-income and racially and culturally diverse groups are held primarily responsible for their school problems, academic failure, and social outcomes, rather than blaming structural inequality and/or systemic inequities (Ford et al., 2002; Ford et al., 2006; Ford et al., 2011; Ford & Grantham, 2003; Valencia, 1997). Deficit thinking leads to low expectations, overlooking potential, and/or dismissing efforts that could stimulate demonstrations of true abilities. As a result, according to Ford and Grantham (2003) and Ford et al. (2011), deficit thinking is a major reason why Black males are underrepresented in gifted and/or advanced education. Likewise, the excerpt below raises the question of a consequence of deficit thinking as Mrs. Days reflected on her brother's characteristics and claimed that his early education teachers would never have known his greatest strengths or predicted his future success. Mrs. Days noted:

My brother was an imaginative and creative child, with a mind of reason and was tickled by dry humor. He was extremely curious about the outside world, a leader, and a scientist and engineer at heart, among other things. Although he was bored at school, he loved to explore and learn at home. Despite the impressive behaviors and attributes observed by his close friends and I, my brother was never referred for gifted testing, nor was he described as anything above average. However, I was not surprised in the slightest when he maintained a 4.00 GPA as an undergraduate, when he was accepted into medical school, or when he became a medical doctor in emergency medicine. My brother is what the gifted and talented experts would call a producer of society, yet his childhood teachers never predicted his current achievements.

STEM Education & Black Males

In comparison to gifted enrollment, Black students are underrepresented in advanced placement (AP) mathematics and science, and enrollment for Black males is even lower than enrollment for Black females (Corra et al., 2011; Davis et al., 2019). It is important to emphasize STEM education in advanced settings because both giftedness and STEM talent development are critical to the scholarly and employable development of all students. Yet underrepresentation of Black males in such programs is persistent; therefore, they lack “*access to appropriate learning opportunities to realize their potential*” (NAGC, 2022). For example, statistics show that Black students are less likely to be referred to, enrolled in, and remain in advanced mathematics and science courses, as well as pursue STEM careers. As a result, Black males are less likely to develop a positive STEM identity that increases their probability of pursuing and securing future competitive careers (Anderson et al., 2022; Collins & Roberson, 2020; Davis et al., 2019; Grantham, 2013; Lewis et al., 2012; Wright et al., 2017).

Critical Race Theory in Education

This study draws on Critical Race Theory (CRT), which is a theoretical perspective that purposely centers race and racism in its analysis — it considers racism to be the central reason for racial inequality (Ladson-Billings & Tate, 1995; Vaught, 2011; Given, 2008). CRT arose in response to the stalling of civil rights litigation, particularly from watershed cases like *Brown v Board of Education*. CRT proposes that racism needs to be understood historically and narratives of oppressed people stand as privileged accounts of lived experiences of racist policy and practice (Milner, 2008; Milner & Howard, 2013; Taylor et al., 2009). Given (2008) asserted that racism, in this perspective, is seen in the racial makeup of those in power and those who are disempowered as well as in the frequent absence of people of color in everything from political leadership to popular media and school curriculum. If discriminatory practices were nonexistent, and diversity and equity were honored through multidimensional and multicultural approaches for gifted identification, then “there is no logical reason to expect that the number of minority students in gifted programs would not be proportional to their representation in the general population” (Frasier, 1997, p. 498).

While I realize that CRT in education has sparked controversy in recent years, with various state legislatures debating proposals to prohibit CRT teachings, particularly in K-12 classrooms, there are decades of research reporting considerable underrepresentation of minority students (i.e., non-Asian minorities) in gifted and advanced education programs. The disconcerting data demonstrate how race has historically been and continues to be a major issue in American schools. For this reason, I argue that persistent racial disparities in school systems are the consequence of systematic racism and implicit biases embedded in educational practices and policies. Particularly, I question racial biases in assessments considering the end of slavery

in the United States (1865) occurred only 56 years before the Stanford-Binet Intelligence Scale (1916) was used to assess student intelligence (giftedness). Despite the desegregation of schools following the lawsuits presented by the National Association of the Advancement of Colored People (NAACP) combined with the notorious *Brown v. Board of Education* Supreme Court case in 1954, modern-day segregation in schools has been seen through tracking, in which minority-race students are assigned to lower-track classes while White students are assigned to higher-track classes (Tyson, 2013; Lofton, 2021).

Even more, national reports overwhelmingly reinforce the well-known and unfortunate reality that Black males face incredible barriers as they strive to achieve in school and social settings (Grantham, 2013; Rimm et al., 2018; Davis et al., 2019). Compared to Black females and White males, for example, Whiting and Ford (2009) reported that Black males had the highest dropout rates, poorest achievement, and lowest test scores, and were overrepresented in special education but underrepresented in gifted education. Hines et al. (2020) added that “Black males are likely to attend schools with lower graduation rates, fewer rigorous courses, and limited exposure to student-centered learning environments” (p. 131). In response to advanced educational disparities among Black males, this study contemplates the historical and theoretical perspectives of race and racism and how they impact our educational systems, grounded in CRT (D. A. Bell, 1995; Ladson-Billings & Tate; 1995). CRT suggests that racism is a societal norm, where White students are able to advance due to privileges afforded to them because of their skin color and the ways that property laws, educational policies and practices, and socioeconomic status have privileged them. On the contrary, Black students are to work excessively harder and constantly prove themselves to be unlike their mainstream racial stereotype if they wish to advance (D. A. Bell, 1995; Taylor et al., 2009; Vaught, 2011; L. L. Johnson, 2016).

Nevertheless, when it is the assumption that minorities are “feeble-minded” students, as stated by Terman (1948), teachers are less likely to expect minority students to embody gifted and talented attributes outside of athletics (Hernandez & Davis, 2009; James, 2012; Dexter et al., 2021). Noteworthy, Dr. Lewis Terman served as President of the American Psychological Association in 1922 and is known for his revision of the Stanford – Binet Intelligence Scales and IQ test that measures a student’s level of intelligence for gifted identification. Grantham (2013) asserted that policymakers and educators are no exception to racism and discriminatory beliefs, and unfortunately, educators in ‘desegregated’ schools who follow biased intelligence testing policies and practices, all take part in segregated gifted classrooms in legally mandated desegregated schools. For this reason, researchers contend that countless Black males are persistently underserved in GATE because they are unnoticed or overlooked due to the complexity of racist educational systems (Grissom & Redding, 2016; Rimm et al., 2018; Wright & Ford, 2019). If the societal norm holds minority groups (i.e., special populations) to low standards and Black males to even lower expectations, then how closely are educators observing Black boys for gifted characteristics and other related competitive traits that correspond to STEM?

Purpose of Study & Research Questions

From 2017 – 2018, approximately 60% of U.S. students enrolled in gifted education were White compared to their student population of 50% in public schools, while 8.2% of Black students and 18.3% of Hispanic students were enrolled in gifted education compared to their 15% and 23% student population in public schools, respectively (OCRDC, 2018). In 2011, the National Education Association reported that gifted enrollment for Black boys was less than for Black girls; hence, “Black boys were 2.5 times less likely to be enrolled in GATE. Analogous to

OCR and NEA data, Bullard (2023) informed that Black boys were underrepresented in Georgia's gifted education programs during the academic year 2021 – 2022, which indicates the population's persistent inequitable representation when comparing Bullard's current findings to past research (Ford, 2011; Grantham, 2011; Grantham, 2013; Whiting, 2009). The disconcerting statistical data for Black boys identified for gifted education probe the question: "Where are the gifted Black boys?" The prevalence of academic discrepancies prompts concerns about the future outcomes of Black males in terms of potential negative repercussions that may hamper academic development, positive self-identity, preparedness for further education, career aspirations, and so on (Bullard, 2023). For example, if Black boys are not properly identified and placed in GATE programs, they run the risk of being underachievers (Ford, 2013). Winsler et al. (2013) advised that the risk of "such loss of human resources and potential is saddening, and research is clearly needed on the school experiences of gifted Black males to help determine best practices for identification, curriculum, and retention of this vital segment of our population" (p. 440).

Equally important, we are currently living in the 21st century, a period of transformation and technological advancement that necessitates critical thinkers and problem solvers in order to sustain economic growth and innovation (Bullard & Bahar, 2023; Crammond, 2009; Rotherham & Willingham, 2009). STEM talent development fosters critical skills in scientific domains and is essential for cultivating students' holistic scholar identities in order for them to reach their full potential (Bullard & Grantham, 2023; Collins & Grantham, 2014; Collins, 2018; King & Pringle, 2019). STEM talent development also nurtures creativity and helps students to become employable and capable of meeting the demands of a highly competitive and global society (Anderson & Coleman-King, 2021; Anderson et al., 2022; Collins et al., 2020; Collins & Jones Roberson, 2020). Hence, STEM is one of the most important mechanisms in education because it

recognizes students' developmental needs, high ability, and diversity of giftedness. Black males, on the other hand, are underrepresented in GATE and AP mathematics and science courses, but overrepresented in school disciplinary records and special education programs (Strayhorn, 2008; Ford, 2010; Grissom & Redding, 2016). Underrepresentation of any race or gender is unjust because it deprives the population of gifts and talents that could be used to promote economic growth. With this in mind, this study aims to learn more about the educational factors that contribute to Black male underrepresentation in GATE, as well as the motivators that foster their success in STEM despite prior educational barriers.

Thus, by employing qualitative research, this study seeks to provide greater meaning, capture the complexity and depth of the phenomenon under investigation (T. N. Ford & Goger, 2021), and compensate for quantitative limitations. More specifically, this study explores the lives of three high-achieving Black men who are now leaders in the field of medicine (e.g., STEM) but were not identified as gifted during their K – 12 schooling. The motive for selecting Black males in medicine stems from the assumption that if gifted students are selected based on their intelligence and potential to acquire the highest levels of degrees, high-paying, and in-demand careers, then how were three high-achieving Black male Physicians overlooked for gifted and/or advanced programs? As a disclaimer, this study cannot confirm the participants' eligibility for gifted education services during K – 12 schooling. However, their stories can produce data to identify potential gifted characteristics as defined by the National Association for Gifted Children (NAGC) and described in existing scholarly research on gifted traits, as well as experiences that influenced their STEM identity development. More importantly, in exploring this phenomenon, the data might provide a window into how the school system perpetuates social injustice and racial disparity.

The narratives of the three Black men are also intended to promote positive self-identity and self-efficacy for African American/Black students, and other students of special populations, through storytelling as it applies to Critical Race Theory (CRT). While their experiences shed light on the problems that Black males encounter in the classroom, which leads to their underrepresentation in gifted and advanced courses, they also reveal aspects that contribute to their collegiate and career success in STEM. Storytelling provides a level of hope — the likelihood that if people of color are finally heard, others will no longer be blind to color or culture, they would be aware of potential racism and/or implicit biases and have empathy to change for the greater good of a multiracial and multicultural society. To that end, the overarching research question asks, “Where are the gifted Black boys? In order to understand the experiences or factors that contribute to both the underrepresentation of Black males in gifted and advanced programs as well as their victorious collegiate and career outcomes in STEM, the subsidiary research questions for this study ask:

1. How do Black males describe their school experiences from K-12 to college?
2. How do Black males describe or understand the role of a teacher in their educational trajectory?
3. How do Black males describe or understand key factors that contribute to their success in the medical field (i.e., STEM)?

Order of Subsequent Sections of Study

The subsequent section of this article describes the 1) qualitative methodological approach used to answer the research questions, 2) the role of the researcher, 3) data sources, and research context and participants, 4) sampling and recruitment along with ethical considerations, 5) procedures followed and data collection, 6) trustworthiness of the research, and 7) data

analysis, respectively. The preceding section entails empirical findings from the investigation of Black males' educational experiences that reveal potential barriers to their gifted and advanced referrals and/or enrollment, as well as factors that contribute to Black males' collegiate and career success in STEM. The final section summarizes the study's findings, discusses the implications of the findings for policy, practice, and future research for Black males in GATE and STEM, and the limitations of the study.

Methodology

Qualitative Research

Qualitative research is designed to explore the human elements of a given topic, where specific methods are used to examine how individuals see and experience the world; it is best for addressing many of the *why* questions that researchers have in mind when they develop their projects (Given, 2008). For example, this project was motivated by essentially asking “why” Black males are underrepresented in gifted education programs. By employing qualitative research methodologies to investigate the school experiences of Black boys, this study is able to acquire a better understanding of effective approaches for identifying, educating, and retaining this important part of our population in gifted education programs (NEA, 2011; Winsler et al., 2013; Hines et al., 2020). The tenets of phenomenology are also embedded because this qualitative study focuses on understanding participants' lived experiences in educational settings and meaning-making after encountering a specific phenomenon or set of conditions (Moustakas, 1994; Harper, 2007; Urias et al., 2017). Tenets of phenomenology include “lived experience, everyday ordinariness, (Dasein; i.e., existence) being in the world, being with and encounters with entities” (Heidegger, 1977; Horrigan-Kelly et al., 2016).

Advocacy

In addition, qualitative research integrates advocacy for Black males who are too often subjected to achievement gaps compared to other students. For instance, advocacy research is commonly embedded in qualitative methods, with efforts to collect and use information and resources to improve people's lives; as such, it shares allegiance to the values of social responsibility and community empowerment with some other research approaches (e.g., action research) (Given, 2008). Moreover, given the history of gifted education programs used as mechanisms to “segregate” classrooms in legally mandated desegregated schools by utilizing biased intelligence testing policies and practices for gifted education, Critical Race Theory (CRT) helps to inform the methodology used for this study. Particularly, referring to the research questions, interviewing the case studies to obtain their personal narratives is a valuable method guided by CRT. CRT implements a source of strength and empowerment modified into creative methods of narratives and storytelling to promote advocacy and social norms as it pertains to racial identity. Thus, retrospective narrative inquiry is used to record the past educational experiences of each participant.

Narrative Inquiry

Narrative inquiry is a form of qualitative research in which the stories themselves are used as raw data; this approach has been used in many disciplines to learn more about the narrator's culture, past experiences, identity, and lifestyle (Butina, 2015). The narrative approach involves inquiry-led narratives of human experience or inquiry that produce data from storytelling. Examples of inquiries that yield narrative data include interviews that solicit stories or oral histories written autobiographies and biographies; defining features of the narrative approach include the collection of narratives (stories) from individuals or small groups (Butina,

2015, p. 190). The narratives of personal stories regarding racial and cultural-related experiences promote social awareness by inspiring a collection of correlated experiences to identify unjust trends and patterns that call for change. “From the perspective of CRT, some positions have historically been oppressed, distorted, ignored, silenced, destroyed, appropriated, commodified, and marginalized-and all of this, not accidentally” (D. A. Bell, 1995, p. 10). To that end, the stories shared by the case studies selected for this research are intended to foster positive self-identity and self-efficacy for African American/Black and other students of special populations, whose stories often feature high discipline referral rates and low academic achievement.

The Researcher

Reflexivity enables the researcher to acknowledge their participation in the research process, as well as prior experiences, assumptions, and beliefs that may have an impact on the research process (Glesne, 2016; Gabriel, 2018; Durdella, 2019). For the trustworthiness of this study, I willingly disclose I have a close relationship and prior acquaintances with each of the participants. Prior to conducting this study (i.e., extended study), the participants were familiar with the research topic because of their participation in practice interviews for an assigned course project in a graduate-level, qualitative research design course. I developed a great interest in this topic. I considered the preliminary findings to be beneficial in offering further insight into the concerning statistical enrollment rates for Black boys in gifted and advanced education programs, indicating the need to extend this investigation. After approval from the Institutional Review Board (IRB) was obtained, the participants were invited to voluntarily partake in the extended study. Equally important is the disclosure of my ethnicity and former profession as an African American/Black female gifted education teacher. Because of my race and past occupation, I am familiar with marginalized views that participants are subjected to, which may

influence my research. Background knowledge gathered from earlier studies on special population students aimed at eliminating educational gaps could also influence my understanding and interpretation of the data.

For these reasons, I held myself accountable for being an active listener throughout each interview. I was cautious not to assume their stories or personal perceptions, and I remained unbiased about their academic and professional experiences. As I gathered and analyzed data on the factors that contribute to Black male underrepresentation in gifted and advanced education, I considered potential preconceptions based on past research and observations. To minimize and/or eliminate bias and preconceived conclusions, it was critical for me to implement strategies to ensure reliability and validity, such as prolonging the data gathering and analysis process, peer debriefing/consulting, triangulation, and member checking. As the researcher, I am the primary instrument, in which I design, conduct, coordinate, and communicate with all interested parties (e.g., consulting peers) and participants (Xu & Storr, 2012; Durdella, 2019). Nonetheless, in qualitative research, a central component of the research is the collaboration between the participant(s) and the researcher to maintain trust, discretion, and free will (Nunkoosing, 2005; Xu & Storr, 2012; Kornbluh, 2015). I established credibility by being communicative, honest, and amiable, as well as treating and respecting participants as decision-makers. I was cognizant of moral and ethical principles when interacting with participants and analyzing data, in addition to managing and disclosing information in a manner that attained the trustworthiness and authenticity of the study.

Data Sources

Multiple case studies research has the advantage of allowing for extensive description; it interprets the relevance of demographic and descriptive data that uncover cultural norms and

values, socioeconomic factors, and communal beliefs (Stake, 1995; Yin, 2003; Simons, 2009). Opposed to quantitative research, case studies are suitable for *how* or *why* questions and research that explores real-life context (Given, 2008; Creswell, 2022). Therefore, to answer the aforementioned research questions, three participants were chosen for case study research (refer to Table 3). As a form of qualitative descriptive research, a case study examines individuals, a small number of participants, or a group as a whole (Simons, 2009; Marshall & Rossman, 2016; Rashid et al., 2019). Case studies can use one participant or a small group of participants; it is advised that the participant pool remain relatively small as small cases strengthen the researcher's close relationship with the participants and enhance validity and in-depth exploration in naturalistic settings (Yin, 2003; Simons, 2009; Crouch & McKenzie, 2016).

Therefore, I examined a participant pool of three Black males and placed emphasis on the exploration and description of their educational experiences. Educational experiences from K-12 and collegiate years were analyzed to gain a comprehensive understanding of the factors that contribute to underrepresentation in advanced academics as well as success in higher education and medical careers (e.g., STEM) despite barriers. Additional information about the participants was gathered from their resumes, along with Google and social media searches, that highlighted their academic and professional accomplishments, as well as other contributions to their community through service. However, due to the presence of numerous identifiers in the written and visual documentation, these artifacts are not shared in order to safeguard participants' anonymity. This additional information is briefly shared in the section of Description of Research Context and Participants.

Description of Research Context and Participants

The first participant, Mr. Ben Taylor, PA-C (pseudonym), is a first-generation college graduate who attended Georgia K-12 public schools that may have been schoolwide Title 1 eligible (to the best of his knowledge). He also completed his undergraduate and graduate studies in the state of Georgia. As a young child, he was not referred to or enrolled in gifted and/or advanced courses. Mr. Taylor preferred mathematics and science to literature, and it was later discovered that he had mild symptoms of Dyslexia, which were detected by one of his college professors. Mr. Taylor's GPA ranged from 2.7 to 2.9 throughout his K-12 education, only to become a 4.0 scholar during his collegiate studies and completed his undergraduate requirements in three years. Mr. Taylor has been a Physician Assistant for 13 years. He worked as an Emergency Medicine Lead Physician Assistant (PA) for 10 years before co-founding (co-owning) multiple urgent care centers. Over a 13-year period, he has received numerous awards for his hard work and dedication in academics and the field of medicine. For example, Mr. Taylor was Valedictorian of his Physician Assistant graduating class, and has received the following honors: 1) Youngest Physician Assistant Graduate with a Master's Degree, 2) Clinical Preceptor of the Year, 3) Physician Assistant of the Year (seven times in a row), and 4) Clinical Professor of the Year.

The second participant, Marshall Hill, MD (pseudonym), is a first-generation college graduate and was not referred to or enrolled in gifted and/or advanced education programs. He attended K-12 schools (schoolwide Title 1 eligible), he received free and reduced-price school meals, and completed his undergraduate and graduate studies in the state of Georgia. However, before attending college, he decided to join the United States Navy due to a lack of interest in schooling as a result of his K-12 educational experiences. Dr. Hill received hands-on and

relatable education and training while serving in the Navy, which kindled his interest in engineering and science. After being honorably discharged from the Navy, Dr. Hill applied for and enrolled in college. Despite graduating from high school with a 2.0, he maintained a 4.0 GPA in college and went on to a nationally-ranked medical school. Dr. Hill is currently an Emergency Medicine Physician and has formerly served as Chief Emergency Medicine Resident. Dr. Hill has received various awards for exceptional academics and patient care, which include, but are not limited to, Biology Student of the Year and Humanism in Medicine, and a collection of ribbons and medals for honorable military service.

The third participant, Malcolm George, MD (pseudonym), is a first-generation college graduate who attended K-12 public schools (schoolwide Title 1 eligible) in the state of New Jersey. He also completed his undergraduate and graduate studies in New Jersey where he received additional funding from generous donors who provided scholarships for him to take advantage of study abroad programs. He was not referred for or enrolled in a gifted education program. However, he was referred for and enrolled in Honors Algebra and Advanced Placement (AP) American History as a high school student. He excelled in academics and athletics, maintaining high grade-point averages throughout his K-12 education and collegiate studies. As a pre-medical student, he participated in study abroad programs and has extensive experience in community healthcare outreach programs. Dr. George is best described by Booker T. Washington's (1901) famed quote, "Success is to be measured not so much by the position that one has reached in life as by the obstacles which he has overcome while trying to succeed." Despite struggling with standardized assessments, Dr. George received multiple competitive degrees in STEM: a Bachelor of Science in Biology, a Master of Science in Public Health, and a Doctor of Medicine. After graduating from medical school, Dr. George was selected for a highly

competitive top-ranked medical residency program, although this same program initially denied him an interview. Dr. George is currently an emergency medicine physician and formerly served as an assistant professor of emergency medicine.

Sampling and Recruitment

This research uses a case study design that utilizes a targeted selection as the recruitment strategy. A targeted recruitment strategy is a predetermined plan to invite participants with certain experiences, skills, and characteristics (Richard et al., 2009). The participants in this study were pre-identified through their prior participation in a course project, which required the researcher to practice qualitative design skills, such as conducting an interview and developing an interview script. Due to the preliminary findings of the pilot study, I determined that an extended study would be valuable in providing greater insight into the statistical data of the underrepresentation of Black males in gifted education from Bullard's (2023) findings. As a result, the study sample is a subset of a target population that meets the study's inclusion criteria. Participants were selected based on the following common identifiers: race (Black), gender (male), the proximity of age (30 - 35) for generation-y connection [millennials], K – 12 gifted identification status (not referred or identified), first-generation college graduates, graduate-level education (medical school), and current profession (Medical Physician and/or Physician Assistant) (see Table 4.3).

Table 4.3

Summary of Participants

Pseudonym/Title	Edu Level	Race	AgeRg	F-GG	GT-ID	AdvR
Ben Taylor, PA – C	Master	AA/Blk	30-35	Y	N	N

Marshall Hill, MD	Doctoral	AA/Blk	30-35	Y	N	N
Malcolm George, MD	Doctoral	AA/Blk	30-35	Y	N	Y

Note. Pseudonym = to remain anonymous/alias given to protect the privacy and identity of case studies; PA-C = Certified Physician Assistant; MD = Medical Doctor; AA/Blk = African American/Black; AgeRg = Age Range; FG-G = First-generation graduation; GT-ID = identified as gifted and talented; AdvR = Referral for advanced class(s) (e.g., honors and/or advanced placement).

The motive behind the criterion for selecting three Black males in medicine stems from the assumption that if gifted students are selected based on their intelligence and potential to acquire the highest levels of degrees, high-paying, and in-demand careers (e.g., STEM), then an in-depth comparative case study exploring how three high-achieving Black male physicians were not referred for gifted programs might provide a window into how education systems continue to perpetuate injustice and racial disparity. As previously stated, this study cannot confirm the participants' eligibility for gifted education services from kindergarten to grade twelve; their stories can, however, generate data to identify potential gifted characteristics as defined by the NAGC and described in existing scholarly research on gifted traits. First-generation college graduates were also a targeted characteristic due to the participants' resilience to break through family academic barriers. Hines et al. (2020) stated:

First-generation college students experience unique challenges in accessing and completing higher education. By definition, first-generation college students have parents that did not attend a higher education institution. What comes along with that experience can be an overwhelming sense of pressure, apprehension and a great deal of ignorance regarding what the process entails. Such barriers can perpetuate the lagging in achievement and matriculation to college as compared with their peers (Hines et al., 2015). (p. 130).

Moreover, because this study utilized a targeted recruitment strategy, anyone who did not meet the inclusion criteria was excluded. While Black females and other special population groups also face unique barriers in academic settings, the targeted participants are Black males due to the findings from Bullard et al. (2022), Bullard (2023), and a wealth of research that reveal negative stereotypes and biases, and trends of underrepresentation within gifted and advanced education among Black males (Whiting, 2009; Grantham, 2011; Winsler et al., 2013; Grissom & Redding, 2016; Davis & Parker, 2019). Historically, Black boys have had the lowest gifted referral rates by their teachers and are largely invisible in advanced academics (Grantham, 2011; Rimm et al., 2018; Wright & Ford, 2019). Thus, this study focuses on the experience of three academically and professionally successful Black men who were not recommended for gifted programs. By gaining an understanding of why Black boys have been extremely underrepresented in advanced/gifted education, the findings could reveal how the school system continues to reinforce racial achievement gaps among Black males and their counterparts.

Ethical Considerations

Ethics are an essential component of rigorous research and exist in our actions and methods of performing and practicing research (David & Dodd, 2002). David and Dodd (2002) added that ethics is a work in progress that should never be taken for granted; it is adaptable and responsive to change. The ethical issues that pertain to my research study are fairness in sampling and selection, voluntary participation without coercion, as well as data security, and the safety of participants. I made certain that my participants were chosen fairly and that they met the criteria for the sole purpose of the study. Four university professors of qualitative research and multiple doctoral students and candidates were consulted on the participant criterion for this study. Prior to conducting this study, all participants were acquainted with the researcher, and

familiar with the research interest through their participation in practice interviews for a course project in a qualitative research design course. I made every effort to ensure that each participant actively participated in the extended study without feeling coerced. As a safeguard to minimize any possible coercion or undue influence: 1) the principal investigator sent out all communication related to consent, and 2) throughout the study, participants were reminded of their right to withdraw from the study at any time without penalty or alteration of prior relationships. Participants were also informed that they may skip any questions that they did not wish to answer. The interview questions required participants to reflect on personal experiences regarding race, thereby, posing psychological risks (e.g., feelings of stress/discomfort, sadness or anxiety, etc.). Efforts were made to minimize psychological risks by ensuring that each participant's narrative was used to inspire and uplift others who may share common experiences.

For instance, the researcher reminded participants that they had been asked to complete this interview because of their success and influential reputation within their community. However, if discomfort occurred, participants were able to withdraw, re-schedule, pause, and/or withhold information considered too difficult or too personal to discuss. There were no incentives, compensation, or direct benefits to the participant for this study, but there were anticipated benefits to others (e.g., societal) that may result from the research due to generalizable or transferable knowledge. For instance, the narratives of the three Black men are intended to promote positive self-identity and self-efficacy for other Black males and special population students and to encourage awareness of the diverse characteristics of high-potential minority students. Each participant verbally confirmed their understanding that participation in the extended study was voluntary and was taking part in the study under free will. Data collected were properly stored within a password-protected file with the use of pseudonyms to protect the

privacy and confidentiality of each participant. All interviews for the extended study were conducted remotely in order to prevent the transmission of COVID-19.

Procedure

First, approval from the Institutional Review Board (IRB) was sought from the University of Georgia. Following IRB approval, an email was sent to the selected participants, inviting them to participate in the extended study. The email included a link to the consent letter in addition to a thorough overview of the study methodology, which participants accessed using Qualtrics, an online survey software. The consent letter included the following: 1) a tentative title of the study and purpose, 2) a brief introduction of the researcher, 3) the study procedures, 4) safety precautions considered for COVID-19, 5) an overview of voluntary participation without incentive or compensation, 6) potential risks, discomforts, and benefits, 7) permission to use audio recording, 8) privacy/confidentiality and data collection, 9) moral practice, and 10) the researcher's contact information to address questions and/or concerns (refer to Appendix A.4). All interviews were conducted after each participant provided confirmed written and/or verbal informed consent and granted permission for interviews to be recorded and transcribed via Otter.ai (i.e., audio-to-text software).

As a precautionary and moral measure, at the start of each interview, I verbally reiterated the purpose of the study, all items covered in the consent letter, and the estimated time commitment for completing this study. Participants were able to ask questions and raise concerns prior to, during, and following their interviews. Participants were also advised that they were able to withdraw from the study at any time. Following the analysis of the data, participants were emailed to review the preliminary findings from their interview and were asked to certify accurate and fair portrayal. Participants were informed that they were able to provide feedback,

request and/or make changes, and withdraw from the study without penalty. The email also stated that the participants would continue to receive updates as the data analysis progressed. The participants' involvement in the review of preliminary findings was voluntary. The entire study was conducted remotely, this includes participant recruitment (e.g., invitation), consent request and confirmations, and interviews. The total estimated duration of participation for this study was approximately five hours maximum. The estimated duration per activity for all study subjects is outlined in Table 4.4.

Table 4.4

Estimated Duration per Activity for All Study Subjects

Phase	Time	Task
1	7-10 minutes	a) Read and reviewed a brief description of the study and sign the consent form, estimated at five to seven minutes. b) Completed a 2-3 minute online survey to reaffirm their eligibility for this study.
2	1.75 – 2 hours	c) Participated in an initial 45 to 60-minute remote interview via Zoom. d) Participated in two follow-up interviews, 30 minutes maximum each.
3	1.5 – 2 hours	e) Participants had the right to review transcripts, preliminary findings, and updated written drafts, estimated at 30 to 45 minutes to read and provide feedback per review. <ul style="list-style-type: none"> ▪ There were three types of reviews: 1) transcripts and preliminary findings, 2) manuscript draft of findings only, and 3) the final manuscript.

Note. Estimated time commitments were included in the Consent Letter (see Appendix A).

Semi-structured Interviews

In response to the COVID-19 pandemic, each participant remotely engaged in an individual in-depth semi-structured traditional and nontraditional interview via a secure platform

provided by Zoom Video Communications software company. In qualitative research, interviews are commonly employed, and semi-structured interview guidelines provide a technique for developing balanced interview questions that integrate a set of research questions related to the research topic and conceptual framework (Creswell, 2014; Durdella, 2019). Because the interview questions were not fixed, they could be altered, omitted, or replaced based on responses to previous questions and interviewee preferences (Creswell, 2014; Glense, 2016). The semi-structured interview consisted of a list or series of open-ended questions with appropriate probes and/or follow-up questions that guided the conversation between the researcher and participant, creating a safe (trusting) space for participants to reflect and share past educational experiences [see Appendix B.4] (Given, 2008). The questions were designed to be specific to the research topic while also allowing participants to elaborate and the researcher to build on the participants' responses with follow-up questions.

For this study, the traditional interviews were conducted remotely, and audio recorded with a predetermined script of questions, whereas the non-traditional interviews were asynchronously written communication (i.e., text-based) interviews for COVID-19 safety and flexibility. To protect the participants' privacy, passcodes were enabled to access the remote meeting room and were only shared with the participant and researcher. After the initial interview, participants shared written responses to follow-up questions via a restricted Google document, which was only shared with the email provided by the participant. To confirm comprehension and summarize the follow-up responses, the participant and researcher debriefed by video call. This alternative method for conducting interviews was to exercise social distancing enforced by the Centers for Disease Control and to respectfully accommodate extended work hours often encountered by medical physicians in response to the coronavirus outbreak.

Retrospective Counter-Narrative/Storytelling

Participants were asked to provide retrospective experience-focused narratives (e.g., counter-storytelling) on their previous K-12 and postsecondary educational experiences, as well as factors that contributed to their career success in medicine (STEM). Retrospective case studies are a type of longitudinal case study design in which all data, including first-person narratives, is obtained after the event has occurred (Mills et al., 2009). While their stories are past reflections, they provide insight into factors or experiences that explain the repeatedly observed disproportionate representation of Black males in gifted and advanced education throughout decades of research (Ford, 2011; Frasier, 1997; Grantham, 2013; Whiting, 2009; Winsler et al., 2013). The meaning and purpose of the participants' narratives were perceived through the contextual lens of CRT in education, as it is related to race and how, despite challenges, they attained success as Black males in a highly competitive field of medicine, dominated by non-Black counterparts. Education is one of the most influential institutions for knowledge production and transmission, and as such, CRT researchers frequently push the field to critically evaluate the master or dominant narratives that are perpetuated in schools, as well as the counter-narratives that are often silenced or ignored (Groves Price, 2023).

CRT contributes to our understanding of how historical systematic racism causes present-day educational disparities and how we may disrupt deficit notions of differences through the implementation of critical counter-narratives to promote educational equity (Ladson-Billings & Tate, 1995; Delgado & Stefancic, 2023; Milner, 2008; Miller et al., 2008). One of the major tenants of CRT is counter-storytelling (Delgado & Stefancic, 2017, 2023). Counter-storytelling uses the stories or narratives of individuals from underserved groups to give voice to marginalized communities. We are frequently exposed to dominant cultural narratives, which are

the mainstream behaviors, conventions, and ideas (Milner, 2008; Miller et al., 2020). The dominant groups' stories tend to hold the greatest influence in social, educational, and economic systems, resulting in an imbalance of perspectives and meaning-making (Milner, 2008; Milner & Howard, 2013; Miller et al., 2020). This study builds on counter-stories with perspective, viewpoint, and the power of such stories to gain a deeper understanding of how students of special populations (e.g., Black males) experience education, and how we may meet in the middle to inspire change (Milner & Howard, 2013; Delgado & Stefancic, 2017).

Data Collection

This study employed an interviewing strategy in which both the interviewer and the interview questions served as instruments. The interviews began with open-ended questions on the participants' early educational experiences in elementary school leading up to college, as well as their career aspirations for the medical sector as they related to STEM identity development. More in-depth questions followed, with the objective of building on previous information and gathering more information on the influencing factors (Given, 2008; Richard et al., 2009; Simons, 2009; Marshall & Rossman, 2016). The interview concluded with more open-ended questions designed to elicit even greater information about the participants' determination to pursue medical school and the medical profession despite prior barriers. Throughout the analytic process, memos were written during and after each interview, allowing for reminders of relevant topics, documented thoughts/ideas, and interpretations of themes, linkages to theory, and alternative theories.

When the researcher engages in continuous memo writing and comparative reflection, biases are minimized because both tasks are reflective, which helps with objectivity over the course of the study (Wolcott, 1994; Birks & Mills, 2011; Marshall & Rossman, 2016). All

interviews were recorded and transcribed via Otter.ai – an audio-to-text software. After uploading the Otter.ai-generated transcripts, I edited them while listening to the interviews to make accurate edits to auto-text typos. All materials for this study were confidential and kept on a password-protected cloud drive accessible only by the researcher. All data collected from participants were de-identified by using pseudonyms chosen by the participants. Throughout the study, participants were asked not to share their names or any other personally identifiable information. When sharing or publishing the study's findings, the participants' information is solely offered in the form of anonymous quotations or group themes.

Trustworthiness: Reliability and Validity

Prolonged Process and Peer Debriefing

For reliability and validity, this study entailed a prolonged engagement/process of data gathering and analysis to assure the accuracy of the findings from more detailed information in order to formulate accurate interpretations. (Lincoln & Guba, 1985; Creswell & Miller, 2000; Marshall & Rossman, 2016). The prolonged process included multiple interviews such as initial and follow-up interviews with participants, and the researcher was in settings that allowed for long periods of review and peer debriefing. Peer debriefing or consultations consist of colleagues consulting on the data collection and interpretation of findings in order to establish validity through collective judgment (Maxwell, 2012; Marshall & Rossman, 2016). The consulting colleagues for this study included three university professors of qualitative research and various doctoral-level peers. Preliminary findings from this study were also shared at the American Education Research Association 2022 annual convention, which permitted additional feedback from expert educational researchers and other academics with shared research interests (Bullard, 2022).

Member Checking

Lincoln and Guba (1985) and Cho and Trent (2006) advised that transactional approaches ensure validity, which involves participants in the research to validate themes, interpretations, and/or findings (i.e., member checking). This method assumes that qualitative research can be more credible when methodologies are viewed as a medium for ensuring an accurate representation and construction of the participants' reality (i.e., not the researcher's reality) (Cho & Trent, 2006). As a moral practice in case study research, preliminary findings (my interpretation) of the data collected (their stories/narratives) were shared with each participant for participant validation. This was to confirm that the participants found my writing to be accurate and fair in reporting their portrayal. Thus, as my analysis progressed, I conducted member checks in which participants received updated copies of their case findings. In other words, member checks consisted of sharing data and interpretations with the participants, and as such, the researcher initiated and maintained an active collaboration with those who provided the data (Marshall & Rossman, 2016). Participants were not required (forced) to read the document and/or provide feedback. However, each participant was offered the opportunity to review what was written as the portrayal of their stories/narratives. Participants were also given the opportunity to withdraw from the study without penalty upon review of the study documents. For example, the email included a short and voluntary survey of the following:

- I have read your interpretation of my story/narrative and find your writing to be accurate and fair reporting of my portrayal.
- I have read your interpretation of my story and would like to provide feedback and/or request changes. Please email and/or call me to further discuss.

- I waive my right to review and provide feedback as I trust that your writing is accurate and fair reporting of my portrayal without my further evaluation.
- I have decided to withdraw from this study and ask that all data collected from my story/narrative be disregarded.

Triangulation and Disclosure

In addition, when composing finalized interpretation of the findings, triangulation was performed. Triangulation is the act of “gathering data from multiple sources, through multiple methods, and using multiple theoretical lenses” (Marshall & Rossman, 2016, p. 46). For example, some referential sources included Grantham (2004), Howard (2013), McGee (2013), Winsler et al. (2013), Rowley et al. (2014), and L. P. Johnson (2017). Referential materials served as exemplars for empirical quantitative and qualitative research dealing with Black males and/or Black students in educational settings, and the use of narrative inquiry, retrospective narratives/storytelling, and/or case study research

Data Analysis

Throughout the study, data was analyzed by listening to and transcribing individual interviews. Findings and written drafts were shared repeatedly with participants for validation as a moral practice and type of member checking. This exercise was designed to ensure that participants considered my work to be truthful and fair in its portrayal. A prolonged process of peer debriefing and triangulation was also conducted to ensure the trustworthiness of the interpretation of findings. A critical discourse analysis technique and thematic coding of trends across individual interviews were used to characterize, evaluate, and explain the data and make future recommendations to remedy identified problems. Deductive reasoning and inductive

reasoning were also integrated into CDA as a method for reaching a conclusion and determining whether or not the conclusion was true.

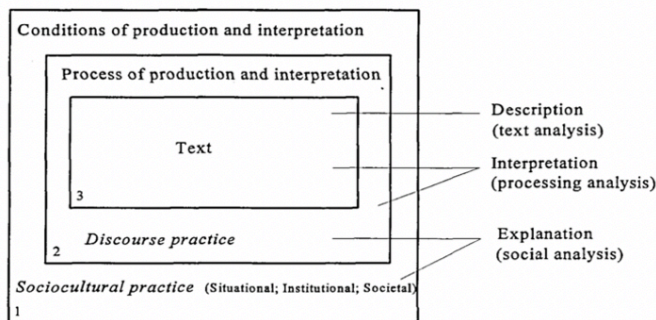
Critical Discourse Analysis

Andrelchik (2016) described Critical Discourse Analysis (CDA) as an "invaluable practice that can provide insight into students' lives," which correlates with this study's aim to improve instructional practices in order to better identify potential gifts and talents of historically underserved populations of students (p. 135). In CDA, language is defined as a social practice and the context of language usage is critical (Fairclough, 1995; Janks, 1997; Wodak & Meyer, 2009). Utilizing a three-part analytic model based on Janks' (1997) demonstration of working with a text and Fairclough's dimension of discourse and discourse analysis, I identified what was happening in my research (activity) through the three dimensions of analysis (inquiry): text analysis (description), processing analysis (interpretation), and social analysis (explanation) (see Figure 4.1). This approach allowed me to focus on the signifiers that made up the text from transcripts produced by audio-to-text software and examine the succeeding findings of the three participants selected for this study. This method of qualitative analysis enabled me to return to the descriptions identified throughout the coding (reasoning) process and confirm interpretations of themes and make connections (explanations) as they relate to theory and other relevant previous research (Andrelchik, 2016; Marshall & Rossman, 2016; Patton, 2002).

Figure 4.1

The Three Phases of Critical Text Discourse Analysis using Interview Transcripts

Fairclough's Dimension of Discourse and Discourse Analysis

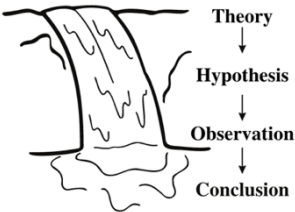
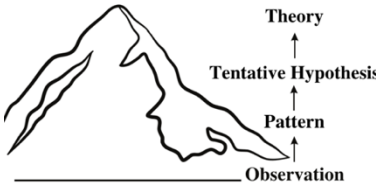


Note. Adapted from Janks (1997).

Thematic Analysis

The processes of inductive and deductive analysis were integrated into CDA to analyze the data (see Figure 4.2). Inductive analysis is defined as the act of working from specific case data to a more general conclusion; however, inductive reasoning is argued to be logically true but may or may not be realistically true (Schwandt, 2015; Wilson, 2016). Therefore, I then employed deductive reasoning to identify codes and emerging themes. A researcher conducting inductive reasoning would first observe the data and then identify a pattern. For example, I formed a tentative hypothesis and lastly determined a theoretical framework. Basically, inductive conclusions are formed in the opposite direction of deductive conclusions — it works from the bottom up like hill climbing (Burney & Saleem, 2008). Induction transitions from precise facts to general ideas, whereas deduction begins with general ideas and ends with facts. I used facts from my study to form a logical argument from the theoretical framework (i.e., Critical Race Theory in Education) and the conclusion assumed to be true. Next, I conducted deductive reasoning. Deductive reasoning can be described as a top-down approach, where the conclusion trails sensible facts. Burney and Saleem (2008) related deductive reasoning to a waterfall, where the order of steps builds from theory, hypothesis, and observation to confirmation.

Figure 4.2*Comparison of Inductive Reasoning and Deductive Reasoning in Qualitative Analysis*

Approach	Visual Graphic	Description
Deductive Coding (Waterfall or top-down approach of reasoning)		<ul style="list-style-type: none"> • Starts with theory and ends with conclusion • Preferable for preceding rounds of analysis • Implements a predetermined theme(s) • Tends to be a faster/shorter process • Purpose is to infer (deduce) conclusions from a preselected theory
Inductive Coding (Mountain Climbing or bottom-up approach of reasoning)		<ul style="list-style-type: none"> • Starts with raw data and ends with the theory • Preferable for the first round of data analysis • Determine themes throughout the analysis process • Tends to be a slower/longer process • Purpose is to identify patterns, develop/explore hypotheses, and establish generalizations (theories)

Note. The information above was compiled from Burney and Saleem (2008), Freeman (2020), Schwandt (2015), and Wilson (2016).

The purpose of applying inductive and deductive reasoning was to obtain a complete understanding of the educational experiences that contribute to the underrepresentation of Black males in gifted and advanced programs as well as their collegiate and career success in STEM. Particularly, the integration of both methods allowed for data to be reviewed for confirmation of related themes to theories and to reconsider the conclusion when appropriate. This was advantageous because I was able to remain open and allowed the facts to lead the story and generate conclusions rather than drawing conclusions based on assumptions. Marshall and Rossman (2016) informed that “the analytic process demands a heightened awareness of the data, a focused attention to those data, and an openness to the subtle, tacit undercurrents of the social phenomena they are studying” (p. 222). For this reason, during the preliminary data analysis, I drafted concise summaries in order to identify significant themes, repeating concepts

or language, and patterns of beliefs shared by participants (Marshall & Rossman, 2016). The summaries were then utilized to create deductive and inductive buckets (tables), which provided a visual of my research’s big ideas and criteria for inclusion based on five categories: environment, impact, belonging, exposure, and resilience (Rimm et al., 2018), and example quotes to organize my data by trends through coding (see Table 4.5).

Table 4.5

Coding Scheme for Data Analysis of the Text (Interview Transcript)

Category	Description	Themes	Example Quotes
Environment (K-12 classroom)	Learning; classroom structure; teacher-student relationship	Disengaged; Unsupported; Perceived low expectations from teacher(s)	<p>“[School was] just boring overall...I didn't take anything seriously at that time and I don't think my teachers did either.” (1)</p> <p>“Boring...I didn't have a lot of interactions with my teachers, I was just kind of like <i>nonexistent</i>...my teachers mainly taught by just <i>talking at me.</i>” (2)</p> <p>“Sit down, no talking, just listen, use your book.” (2)</p> <p>“I felt the teacher did not care much about me as an individual.” (3)</p> <p>“I put my head down, pretending to be sleep.” (3)</p>
Impact (effective learning environment)	Improved learning & engagement; structural enhancement	Kinesthetic & student- led learning	<p>“Nothing was the same, my days [in class] was different...like variability and I was always using my mind I was always thinking. The sheer volume of information was unlike anything I've ever done.” (1)</p> <p>“I'm a kinesthetic learner, I need to actually do it.” (1)</p> <p>“...I study walking, pacing back and forth with a paper in front of my face. I don't sit down to read a book, that's not the way I learn, it's not. I have to be more engaged...moving, doing, interactive, some type of lab. My college and med school professors understood that and provided a flexible structure for me...for us...to do that. And that's why you see A's on my transcript.” (2)</p> <p>“...<i>doing</i> different activities and group work...role playing or acting out roles for history class. I had one history teacher who had good</p>

			references to historical events using clips of popular cartoons like The Simpsons” (3)
Belonging	Positive relationships; fellowship; like peers	Diversity & inclusion	<p>“...teachers who go the extra mile...passionate...and are patient, and make [an] effort to get to know everyone and not label others” (1).</p> <p>“The one other Black person [male] in my PA cohort is still my close friend. I got along with others but having him there helped.” (1)</p> <p>“My microbiology professor told me that I was the first person to ever get 100 on my microbiology lab practical, and she was like that actually never happened to her before at the institution...then she put me up for the Biology Student of the Year award, and other research opportunities like study aboard. She was White and she “saw me” and acknowledged my hard work and what I could I do.” (2)</p> <p>“I was fortunate to go to a University that had good guidance for students of color and those from disadvantaged socioeconomic backgrounds”.... “I felt I would struggle more if I went to a school that had much less representation with minority students. During the lowest times of my medical school career, those are the students that encouraged me the most.” (3)</p>
Exposure (positive role models)	Vicarious experiences	Mentorship; Like role models; bibliotherapy	<p>“My mentor is a Black male but he’s also a goofball like me...[when I met him] he was cracking jokes and that’s when I really saw myself in him...he was good with patients, he was fun and always laughing.” (1)</p> <p>“I remember shadowing...watching him [my mentor] with a patient. The patient was in pain and kinda rude. But instead of lashing out or getting upset, he still spoke softly to him, compassionate...I remember him grabbing his hand...just kinda conveying that ‘I’m not in your position, but I understand and I’m here.’ The way he approached the situation. It was just a class act for me...the way you behave...conduct yourself, treat other people...from watching him, I thought it’ll be great for me to be in a position to do that and actually change people’s lives.” (2)</p> <p>“...reading a book called The Pact. It’s about three young men from a neighboring city called Newark in New Jersey who grew up against all</p>

			odds in the hood and became doctors... This was the second book I can recall that I remember reading from cover to cover. It changed my life.” (3)
Resilience (Rimm et al., 2018)	Factors related to success for youth (Rimm et al., 2018, p. 264)	Belief in self/self-efficacy; personal traits; goals/aspirations	“...it’s called grit, or hard work, you can’t teach that and I just had it.”...”I knew I deserved to get in and I didn’t take no as an option.” (1) “I don’t know how you guys do it. But just understanding that just because someone is not making A’s doesn’t mean they can’t, maybe they just learn a different way. And I realized that about me so I’m happy I went to college and didn’t allow my K-12 experiences deter me.” (2) “...opportunity – seeking, that’s how I got to shadow and got with my mentor and whatnot”...”you have to be a person that seeks opportunity, not wait for it to come to you.” (2) “I knew it was a long shot, but I emailed them... And then, Match Day [year removed] I matched into my dream program despite being academically in the bottom 5th percentile of my class into a specialty that was considered very competitive at my school.the same residency program that first rejected me.. I fought for a chance, even when they first told me no.” (3).

Note. The numbers at the end of the quotes reflect the sequence in which the participants were interviewed (e.g., 1 = Mr. Taylor; 2 = Dr. Hill; 3 = Dr. George).

Findings

The data in this study are retrospective educational reflections of three high-achieving Black male medical physicians in order to identify key elements that contribute to the inequitable representation of Black males in gifted and/or advanced education programs, as well as driving forces of their success in higher education (i.e., collegiate) and leading careers in the medical profession (e.g., STEM). The STEM component is meaningful to this study due to the related concepts of giftedness and STEM talent. Based on these reflections, the findings indicate that educational factors such as classroom environments prevent Black males from performing or

exhibiting their true potential, and as a result, K-12 teachers are unable to detect, observe, and/or identify their prospective gifts and talents.

While the participants faced hardships and distressing moments due to a lack of social and emotional support, they overcame these obstacles and went on to become medical leaders. Thus, in the context of Critical Race Theory and counter-storytelling, the findings challenge mainstream deficit narratives and shed light on how Black males develop positive STEM identities despite the widespread underrepresentation of Black males in advanced placement programs of mathematics and science (Davis et al., 2019). Their stories provide optimism in knowing that it is possible to increase Black male representation in gifted and/or advanced education and STEM by recognizing components of their experiences that provided significant success. To that end, the next section lists the three subsidiary research questions and their major findings from semi-structured interviews with the selected participants. As it relates to descriptions and themes, the findings correspond to a categorical code(s) as seen in Table 4.5: Environment (C1), Impact (C2), Belonging (C3), Exposure (4), and Resilience (C5).

Question One: How do Black males describe their school experiences from K-12 to college?

Each participant was asked to describe their educational experiences from kindergarten to college, providing a general overview of elementary, middle, and high school, as well as postsecondary (higher) education. Mr. Taylor and Dr. Hill both described their K-12 education as having restrictive learning environments, a lack of social/emotional support, positive teacher-student relationships, and teachers who had low expectations and/or cared about their students. Dr. George's elementary and middle school experiences were distinct; however, his experience in Honor Algebra courses mirrored Mr. Taylor's and Dr. Hill's K-12 experiences.

Mr. Taylor, PA-C

My first interviewee was Mr. Taylor. I started the interview by asking Mr. Taylor to reflect on his early educational experiences (i.e., K-12). He expressed that he felt “overlooked” and [negatively] “labeled” throughout his elementary, middle, and high school education. To confirm his gifted identification status on record (as I did with all interviewees), I inquired, "In what class type were you enrolled? Do you remember being told about gifted education? Were you aware of or familiar with your school's gifted classes?" Mr. Taylor replied that he was placed in “regular classes” [on-level courses] and answered “no” to being referred for gifted education. He proceeded to explain that he was aware that a “group of smart students went to a small class [in his elementary school].” Years later, he learned those students were referred to as “gifted.” Mr. Taylor also recalled that while he felt disregarded, he perceived the “small class of smart kids [gifted kids]” as the “golden children” who received positive attention and better-quality instruction, such as “fun activities” when compared to the students in “regular classes” [on-level] courses. Mr. Taylor also described himself as a “goofball” and “class clown.” I asked follow-up questions to gather more information to understand why he may have played around in class.

Interviewer: Why do you think you acted that way? How would you describe the classroom’s instruction during those years?

Mr. Taylor: “Just boring overall...I didn't take anything serious[ly] at that time and I don't think my teachers did [took me seriously] either.” [C1]

Later in the interview, Mr. Taylor remembered one of his elementary teachers “yelling” at him and his classmates [other Black boys] when they were “acting out” [acting silly] during instruction. He stated:

I remember her yelling at us and saying to us, ‘this is why y’all [you all] are going to end up working at Burger King like the rest of ‘em’ [them]. She was really mean about it and it kind of blew my mind. At that time, I remember my feelings were hurt because we were just playing...we were just kids. Later on, as I got older, I realized that the “rest of ‘em” might have been racist, like a stereotype...thinking low of us just for being [Black] kids. A teacher shouldn’t say that...us acting out shouldn’t mean we’re gonna end up at Burger King...basically saying we won’t amount to anything. [C1]

When asked about his transition from elementary to middle school, Mr. Taylor replied that the educational experiences were quite similar in terms of instruction; he explained, “it was really just like...lecture and test. It was nothing fun...we pretty much sat there all day.” Mr. Taylor also recalled that comparable to elementary schools, the middle and high school teachers were “easily frustrated” and frequently “shouted” at students, which were predominately Black.

Interview: I’m hearing that the classroom instruction did not change much, but what about the teacher-student relationship in middle and/or high school?

Mr. Taylor: I don’t think they had the patience or tolerance for us. Pretty much with anything, they got frustrated, especially at a goofball...seeing Black students not applying themselves, all they would do is shout. They reacted out of frustration...it [teaching] was a waste of time for them [teachers]. But I mean, I guess I didn’t give them much of a reason to take me seriously since I didn’t take it seriously...I admit I was a goofball. [C1]

Mr. Taylor stated that despite his lack of engagement with classroom learning and connection with his teachers, he established strong ties with peers and was quite happy when spending time with his friends and classmates. He also recalled that during his leisure (i.e., out-

side-of school time), like most young boys, he played sports and video games and had a list of favorite television shows and books, and his parents provided him and his siblings with enjoyable family experiences. As he reached high school, Mr. Taylor began to consider his future and the lifestyle he desired.

Interviewer: Did a change occur in high school? Your motivation? I'm curious to know what influenced your decision to attend college since your prior educational experiences weren't engaging, based on what I've heard so far.

Mr. Taylor: [At first] I wasn't trying to help myself, but I realized I had to apply myself. I realized that I liked nice things and pretty girls [he laughed]. I knew that I wanted to afford a certain lifestyle...the house, car, traveling, a career that I was proud of but also, I wanted to make money, a lot of it. And a college degree would help me [to] do that. [C5]

Interviewer: Did any of your teachers help or influence this decision...at all?

Mr. Taylor: No, not really, no. I just thought about the future that I wanted and knew only I could make it happen. So I started to plan and knew this meant really applying myself once I got to college. [C5]

Interviewer: Did you wonder if your college experience would compare to your K-12 experiences? How would you describe your thoughts about attending college despite what you've told me about your learning experiences from K-12?

Mr. Taylor: Well, I heard that college was [would be] better....it was more related to the real world...tailored to what you wanted to do...your interest...more freedom in general. I looked forward to college and was ready for that next step. [C2, C5],

With minimal effort, Mr. Taylor attained a 2.90/3.00-grade point average (GPA) by senior year and maintained this GPA solely to meet the GPA requirement for the selected universities and colleges to which he planned to apply. Mr. Taylor recalled studying for lengthy periods of time and feeling as if he was “catching up” once he arrived at college as an undergraduate. Regardless of the challenges he encountered, he was determined to learn and gain a thorough understanding of the content in order to be eligible for PA [physician assistant] school. [C5]

Interviewer: How would you describe your college experiences?

Mr. Taylor: I remember college very well....I didn't take any science courses until my second year. I think I just really outworked everybody. There were other guys who went to private schools, they studied [for] maybe three hours, [and] they seemed better prepared. I did [studied] for 10 to 15 hours. It is not an overstatement to say that I lived on four hours of sleep a night. [C5]

Interviewer: Over time, did things become easier for you? Do you feel that you were catching up from your K-12 education?

Mr. Taylor: I did, definitely had to catch up. My science classes were rigorous, but I liked what I was learning...I knew I needed a certain GPA to get into PA [physician assistant] school. It [studying] was hard but it did become easier over time. I got the hang of it. [C2, C5]

Interviewer: How would you describe your relationships with the professors compared to your previous K-12 teachers?

Mr. Taylor: Much better. After [high school] graduation I got to shadow my aunt who is a physician assistant (PA) and I loved it. Shortly after...during my first year of college, one

of my classmates told me his mother was a PA and that I could also shadow her. She connected me to a PA who was a Black male, it made a believer out of me. From there, I also had support from my professors who told me about PA programs and their requirements...[and] were willing to write letters of recommendation when the time came. They exposed me...directed me...I had a full network in college. [C3, C4]

Interviewer: How would you describe PA school?

Mr. Taylor: That type of environment? Hard.

Interviewer: How did you get through it [PA school]? Since you describe it as hard.

Mr. Taylor: I think you have to have grit and [be] willing to work hard. By that time, I was adaptable and use to hard work from before [undergrad]. I was motivated, more prepared, I wanted to be there and had support. I knew where this was leading. I got to practice what I was learning through clinical [i.e., clinical experience is direct patient healthcare experience]. [C2, C3, C4, C5]

Marshall Hill, MD. Dr. Hill was my second interviewee. I found that his early K-12 educational experiences were very similar to Mr. Taylor's experiences in terms of feeling bored in class and overlooked by his teachers. Noteworthy, both Mr. Taylor and Dr. Hill are two years apart but attended the same elementary, middle, and high schools within the southeast region of the United States.

Interviewer: Overall, how would you describe your K-12 school experience?

Dr. Hill: Boring...I didn't have a lot of interactions with my teachers, I was just kind of like nonexistent...my teachers mainly taught by just talking at me. I'm pretty sure that's why I didn't excel. I just did not excel in that structure. It wasn't necessarily a discipline

problem. It's just more of a structural problem. The way my mind works, it's not structured to succeed in that area. [C1]

Dr. Hill added that he felt “disengaged in class and bored with school just about every day” during his K–12 schooling because classroom instruction consisted of little to no opportunity to freely explore the learning content. He further explained, “That was essentially my experience, I mean, looking at the clock, waiting for the bell to ring...And it’s almost like you go to school just to wait to leave.” [C1]

Interviewer: What were some of the things the teachers asked or instructed the class to do?

Dr. Hill: “Sit down...no talking, just listen....and use your book. They [teachers] were more worried about our behavior or keeping the class quiet. It wasn’t really about us learning. They pretty much sat at their desk [and] gave us worksheets and page numbers [for the textbook] to where we [peers/classmates] could find the answers [to the worksheet]. We didn’t do anything fun like science experiments. [C1]

Interviewer: How do you think your K-12 teachers perceived you?

Dr. Hill: Quiet, don’t really say much, don’t really do much...do whatever I had to do to pass and get by. I was nice and polite, but I didn’t participate much, I was nonexistent. [C1]

On the other hand, Dr. Hill felt enthused and flourished when his fifth or sixth-grade teacher assigned at-home projects, which offered the opportunity for student-led learning [C2]. Dr. Hill recounted walking into class with his science project in hand and how his teachers would be "surprised" and "shocked" by the finished product. He stated:

I remember my teacher asking me, “Why don’t you put this much effort into your classwork?” At the time, I didn’t know how to respond to her question, but if I could go

back in time, I would say because your classroom doesn't offer the chance or motivate me to do this type of work. [C1]

Interviewer: What was the best part about this assignment or science project?

Dr. Hill: It was a science project and I remember we were able to choose our topic or subject related to an animal or plant...like whatever question that we had about it. I got to ask and investigate something that sparked my curiosity, which was, "Why are the Blue Birds blue?" I remember that project so well because I had fun with it. My parents made sure I had everything...down to the materials to build a nest with artifactual birds and eggs for my display. [C2]

Dr. Hill didn't have many "favorite teachers" throughout his early education, yet he stated that he enjoyed school when socializing with his peers. Also, when he was at home and given the opportunity to experiment or use creative talents such as building or thinking critically, he seemed to be fascinated by learning. [C1, C2, C3]

Interview: What about your experiences outside of school as a young child? What are some activities that you found engaging that may have been educational?

Dr. Hill: Now that I look back on it, I must have loved biology or just science in general. I would examine bugs and leaves and other stuff [he laughs]. My Mom ordered a scription of books and magazines that I liked to read, like National Geographics. I would also watch it on tv [television] to compare what I read or would see if I could figure out if a leaf was safe to eat just by looking at it [he laughs]. You remember the cartoon, "Pinky and [The] Brain?" ...[I would watch] watching to see if I could figure [it] out [how they would take over the world]...like is this a good plan? And [try to] predict what would go wrong before the end [of the show]. [C2]

Interviewer: What about your educational experience as a high school student?

Dr. Hill: It [school] was still boring and I didn't see much of a connection with the real world, except for woodshop class. My favorite class was woodshop because I liked building and creating things. [I liked] starting with basically nothing and seeing a finished product that I built with my hands. [C2]

Interviewer: Did you have a better relationship with your high school woodshop teacher?

Dr. Hill: Yeah, he was cool. I appreciated that he trusted us enough to work independently and gave us choices on items that we could create. He supervised...mainly for safety but still gave us freedom. [C2]

Interviewer: Overall, how were students' behavior in the woodshop class?

Dr. Hill: Good, pretty much everyone was in the zone. We were building so were focused on what we were working on. [C2]

Similar to Mr. Taylor, Dr. Hill admitted that without studying and with little to no effort, he graduated from high school with a 2.72 GPA. Other than his high school woodshop class and at-home educational interests, he had little interest in school. Instead of attending college following his high school graduation, he joined the United States Navy for a four-year term. He described his naval training and educational experiences as hands-on, realistic (i.e., related to real-world experiences), and tapped into his interests as they applied to science and engineering. His naval experience pointed him in the direction of potential careers fitting his interest, particularly careers involving science and helping people. Dr. Hill enrolled in college after completing his four-year Naval commitment, which led to his path to medical school. Dr. Hill found collegiate-level instruction to be more engaging, relatable, and connected to a bigger purpose, and more importantly, he connected with his professors. [C2, C3]

Interviewer: How would describe your educational experiences in college compared to K-12?

Dr. Hill: In college, the professors showed more interest in me. They seemed to be invested in me, so I was motivated to do well because it was what they expected of me. It was like a ripple effect. They [professors] cared so I cared. I was actually recognized and received academic awards. Plus, the lessons were more hands-on, and the professors made it [content] relatable. Much different from elementary to high school. [C2, C3]

Interviewer: How would you describe medical school compared to undergrad?

Dr. Hill: Umm...independent study...you have to be a certain type of person to get through medical school...have to be disciplined and self-motivated. It was definitely harder than undergrad, but because of my undergraduate professors, I had a solid foundation. By that time, science and medicine was my identity, so finishing medical school was no question. [C2]

Interviewer: What do you mean by "independent study?" You didn't meet with your professors as often?

Dr. George: I think people learn in different ways, because [participant paused to think]...so even as a med [medical] student, I didn't go to class. I essentially studied at home. I study [while] walking...pacing back and forth with a paper in front of my face. One of my advisors actually said it was the name for that. But typically, I don't sit down to read a book. That's not how I learn, it's not. ...The only way I can sit down for long periods of time, just if I'm doing practice questions, or maybe watching some kind of online video, it has to be interactive. My college [undergrad] and med school professors understood that and provided a flexible structure for me...for us...to do that. And that's

why you see A's on my transcript....They [professors] were okay with that as long as I was learning. [C2, C3]]

Marshall Hill, MD

Dr. Hill was my second interviewee. I found that his early K-12 educational experiences were very similar to Mr. Taylor's experiences in terms of feeling bored in class and overlooked by his teachers. Noteworthy, both Mr. Taylor and Dr. Hill are two years apart but attended the same elementary, middle, and high schools within the southeast region of the United States.

Interviewer: Overall, how would you describe your K-12 school experience?

Dr. Hill: Boring...I didn't have a lot of interactions with my teachers, I was just kind of like nonexistent...my teachers mainly taught by just talking at me. I'm pretty sure that's why I didn't excel. I just did not excel in that structure. It wasn't necessarily a discipline problem. It's just more of a structural problem. The way my mind works, it's not structured to succeed in that area. [C1]

Dr. Hill added that he felt "disengaged in class and bored with school just about every day" during his K-12 schooling because classroom instruction consisted of little to no opportunity to freely explore the learning content. He further explained, "That was essentially my experience, I mean, looking at the clock, waiting for the bell to ring...And it's almost like you go to school just to wait to leave." [C1]

Interviewer: What were some of the things the teachers asked or instructed the class to do?

Dr. Hill: "Sit down...no talking, just listen....and use your book. They [teachers] were more worried about our behavior or keeping the class quiet. It wasn't really about us learning. They pretty much sat at their desk [and] gave us worksheets and page numbers [for the

textbook] to where we [peers/classmates] could find the answers [to the worksheet].

We didn't do anything fun like science experiments. [C1]

Interviewer: How do you think your K-12 teachers perceived you?

Dr. Hill: Quiet, don't really say much, don't really do much...do whatever I had to do to pass and get by. I was nice and polite, but I didn't participate much, I was nonexistent. [C1]

On the other hand, Dr. Hill felt enthused and flourished when his fifth or sixth-grade teacher assigned at-home projects, which offered the opportunity for student-led learning [C2]. Dr. Hill recounted walking into class with his science project in hand and how his teachers would be "surprised" and "shocked" by the finished product. He stated:

I remember my teacher asking me, "Why don't you put this much effort into your classwork?" At the time, I didn't know how to respond to her question, but if I could go back in time, I would say because your classroom doesn't offer the chance or motivate me to do this type of work. [C1]

Interviewer: What was the best part about this assignment or science project?

Dr. Hill: It was a science project and I remember we were able to choose our topic or subject related to an animal or plant...like whatever question that we had about it. I got to ask and investigate something that sparked my curiosity, which was, "Why are the Blue Birds blue?" I remember that project so well because I had fun with it. My parents made sure I had everything...down to the materials to build a nest with artifactual birds and eggs for my display. [C2]

Dr. Hill didn't have many "favorite teachers" throughout his early education, yet he stated that he enjoyed school when socializing with his peers. Also, when he was at home and given the

opportunity to experiment or use creative talents such as building or thinking critically, he seemed to be fascinated by learning. [C1, C2, C3]

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Similar to Mr. Taylor, Dr. Hill admitted that without studying and with little to no effort, he graduated from high school with a 2.72 GPA. Other than his high school woodshop class and at-home educational interests, he had little interest in school. Instead of attending college following his high school graduation, he joined the United States Navy for a four-year term. He described his naval training and educational experiences as hands-on, realistic (i.e., related to real-world experiences), and tapped into his interests as they applied to science and engineering. His naval experience pointed him in the direction of potential careers fitting his interest, particularly careers involving science and helping people. Dr. Hill enrolled in college after completing his four-year Naval commitment, which led to his path to medical school. Dr. Hill found collegiate-level instruction to be more engaging, relatable, and connected to a bigger purpose, and more importantly, he connected with his professors. [C2, C3]

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foundation. By that time, science and medicine was my identity, so finishing medical school was no question. [C2]

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Dr. George: I think people learn in different ways, because [participant paused to think]...so even as a med [medical] student, I didn't go to class. I essentially studied at home. I study [while] walking...pacing back and forth with a paper in front of my face. One of my advisors actually said it was the name for that. But typically, I don't sit down to read a book. That's not how I learn, it's not. ...The only way I can sit down for long periods of time, just if I'm doing practice questions, or maybe watching some kind of online video, it has to be interactive. My college [undergrad] and med school professors understood that and provided a flexible structure for me...for us...to do that. And that's why you see A's on my transcript....They [professors] were okay with that as long as I was learning. [C2, C3].

Malcolm George, MD

The third interviewee was Dr. George. Unlike the other two participants who attended primary and secondary schools in the southeast, Dr. George grew up in the northeast region of the United States and thoroughly enjoyed his educational experiences in elementary school. As previously mentioned, Dr. George was not referred for gifted and/or advanced education services during elementary or middle school. He had no knowledge of giftedness or gifted education programs until he was invited to participate in this study. Dr. George recalled that the lessons in his on-level classes were “straightforward and fun” and the teachers mainly taught by implementing “different activities and group work” [C2]. Therefore, I was curious to know how

Dr. George would describe his younger self and relationships with his elementary school teachers since students are typically identified for gifted programs during this time.

Interviewer: How would you describe your elementary school self as a student?

Dr. George: I would describe myself as someone with a strong desire to do well and make my teachers proud. I came prepared with my homework done and got good grades. I was fortunate to have great teachers during elementary school that were encouraging, particularly in 1st, 3rd, and 4th grade. I remember coming back to visit them years later. [C2, C3, C5]

Interviewer: How do you think your teachers perceived you?

Dr. George: I think my [elementary] teachers perceived me as someone who tries hard in class, smart, not very talkative, and kind. [C3, C5]

Interviewer: How would you describe the classroom instruction during that time?

Dr. George: In elementary school, my classes were straight forward and fun. My teachers mainly taught by doing different activities and group work. [C2]

Interviewer: Can you give me an example of an activity that you found to be engaging? What made the activity engaging? It's okay if you can't remember in detail.

Dr. George: Role-playing or acting out roles for history class. I had one history teacher who had good references to historical events using clips of popular cartoons like The Simpsons. Reading to each other during English class in groups. Breaking up into groups to solve math problems was my favorite because I knew I was good with numbers. [C2]

Dr. George further explained that working groups “was a nice safety net because if you weren’t good at the subject (English or Spanish classes for me), then someone else in the group is likely to be good and you can learn from them” [C2].

However, I found Dr. George's transition to middle school to be significant. Although he was not referred to or identified as gifted, his story relates to the social and emotional needs of gifted male students (Hébert, 2001, 2011; Kerr & Cohn, 2001). For example, Dr. George recalled the following:

My middle school experience was a bit different. Peer pressure had more of an influence, and we were all figuring out our identities. I grew more towards sports.. basketball, football, and track & field at the time. I was still successful in school earning A's and B's but I was not trying as hard to impress my teachers. I was a more passive student for most classes unless I really liked my teacher. I just did what I had to do. It wasn't very difficult to get A's and B's. I was still putting effort into my classes although not nearly the same as I was doing before. My effort was good enough in most cases for at least a B. I focused more on sports because I felt more valuable there [C3/ i.e., sports].

Next, I asked follow-up questions about Dr. George's transition from middle school to high school. In high school, he was referred to and enrolled in Honors Algebra by one of his teachers; however, Dr. George later decided to withdraw from the course and re-enroll in the on-level Algebra class.

Interviewer: Did things change from middle school and high school?

Dr. George: In high school, I felt discouraged academically after taking Honors Algebra and failing it. I was very good with math but couldn't find a way to do well. I tried to find reasons for this. The students in the class had been on the honors track since middle school, I thought they may have knew [known] something I didn't. I also internalized that maybe I was just not smart enough. I transitioned out of honors and focused more on things I was good at such as football. [C1]

Interviewer: Do you remember the racial make-up of your Honors Algebra class? Was the racial make-up different from the on-level classes?

Dr. George: Mainly White and Asian students. Had a couple of Black students as well.

Interviewer: Compared to your honors class, what was the racial makeup of the school's student body as a whole?

Dr. George: About 65% Black, with the other 35% as a combination of Hispanic, White, and Asian.

During this portion of the interview, it was vital for me to acknowledge that past reflections of Black males may contain sensitive information that requires a level of trust and vulnerability. As a result, I was careful to be respectful in my follow-up question about his choice to withdraw from Honors Algebra. When I asked Dr. George to describe the moment or day that he decided to withdraw from honors, I praised his perseverance and ambition while also emphasizing that I understood his past decision must have been difficult. Dr. George openly recounted:

I remember the feeling I had after failing my first few quizzes and tests. The honors class was fairly large like the regular classes but very different in that I did not know nearly as many people in the class as I did with other classes. I was more quiet in that class. I felt inadequate and unable to grasp the material well enough to get A's and B's. I felt the teacher did not care much about me as an individual. [C1]

Interviewer: Can you tell me a little more about what was happening prior to withdrawing from the course [Honors Algebra]?

Dr. George: As I was getting close to transitioning out after the first marking period, it was so painful to face that class every day. I started putting my head down on my desk,

pretending I was sleeping but in reality, I was having [an] internal dialogue on how silly it was to accept going to an honors class. I couldn't wait to get back to a regular class where I could succeed again. [C1]

Dr. George also informed me that once he re-enrolled in the on-level Algebra class, he had no regrets, especially because he was back with his classmates, excelled in mathematics, and had a second chance at the honors course during his senior year. Next, I inquired about Dr. George's college experiences. He emphasized that his alma mater played a significant role in providing guidance for students who looked like him and came from similar socioeconomic backgrounds. During the interview, we were able to locate the university's demographics to offer a clear picture of the students whom the university served and his peer environment.

Interviewer: How would you describe your educational experience during undergrad?

Dr. George: I was fortunate to go to a University that had good guidance for students of color and those from disadvantaged socioeconomic backgrounds. I had good guidance from my first year of college. [C3]

Interviewer: You mention students of color? What did diversity look like at your university?

Dr. George: For undergrad, a pretty good mix of races. [Using the demographic data located on his alma mater's website, the university consisted of approximately, 19% of African American/Black, 7% American Indian, 15% Asian, 25% Latino, 13% White, and 15% Foreign].

Interviewer: What was the racial makeup of your medical program? What is similar or different?

Dr. George: My incoming class was roughly 170 students. We had five Black males and five Black females. It was more than most programs at that time. We were unique because the

Dean of the Medical School was a Black male and the Vice Dean was a Latina female. There was good representation in leadership at my medical school. The next incoming class after mine had an astonishing 15 or so Black males which was very encouraging.

[C3]

Question Two: How do Black males describe or understand the role of a teacher in their educational trajectory?

When asked to describe the role of a teacher(s) in Mr. Taylor's and Dr. Hill's educational trajectory, the participants gave little to no recognition to their primary and secondary teachers for actively contributing to their learning and skill set development (e.g., resourcefulness, critical thinking, growth mindset). In contrast to the other participants, Dr. George described positive interactions with his teachers, particularly elementary teachers, while some of his student-teacher relationships were nonexistent in middle and high school. The participants agreed that teachers influenced their academic achievement, whether favorable or detrimental. When the participants perceived teachers as unenthusiastic about teaching and unconcerned with building relationships or getting to know their students, they became disengaged in the classroom.

For example, when Dr. George described his educational experience within his honors Algebra class, he mentioned feeling “uncared for” and “putting his head down on his desk, pretending he was sleeping.” On the other hand, despite describing his AP European History course as a “disaster” due to failing the end-of-course AP exam for college credit, he described his history teacher as “fantastic,” helpful, and supportive.

Interviewer: What happened next? Did you have any regrets about leaving Honors Algebra?

Dr. George:My senior year I gave it [Honors Algebra] another go and tried AP

European History and that was a disaster. I really wanted to get college credit and it was the only AP class I was eligible for...the teacher of that course is the same one I had for a regular [on-level] history course and he was fantastic. The teacher saw me struggling and worked individually with me. He explained that most people in the class had been doing that style of examination for the past few years in honors/AP history classes. This felt less of a hit on my intellect and more like a lack of experience. [C3, C5]

Dr. George added that he understands the role of a likable [effective] teacher as “those that took their time with me and gave positive or constructive feedback. As a kid, I was able to tell for the most part who really cared and those were the teachers I liked.” I also asked Dr. George if he had any advice for teachers that taught African Americans/Black students; he replied, “exposure....expose your [Black] students to the endless possibilities that are available for their future careers” [C4].

When reviewing the data from Mr. Taylor’s interview, he described a “passionate teacher” as “someone who goes the extra mile. [Those who] might stay a little late or call home to check on you, not just give bad reports...makes connections...view teaching as more than a job.” He also stressed the importance of teachers being patient with students, especially when they are silly, remembering that they are only kids. In general, he understood a teacher's role as someone who can control their frustration levels and redirect students’ behavior with diplomatic communication and alternative assignments or tasks. Mr. Taylor advised:

Instead of yelling at kids and telling them they’re going to end up at Burger King, you know...insulting them or projecting stereotypes of [on] Black kids from a certain [socioeconomic] background, why not try to give them something else to do or just not

yell at them like that. And if you have one way of teaching, you're missing probably 50% of the class. [C1, C3]

I then asked Mr. Taylor if he had any advice for his former K-12 teachers and considered his response as expressive and relatable to many "overlooked and labeled" African American/Black males:

Don't label people at a young age...I think that makes it even harder to get to people [students]. You know? They [students] feel like you [the teacher] kind of given up on them. And granted, I didn't give a good reason for a teacher to invest in me neither. But I think that's what I would say. [C1,C3]

Likewise, Dr. Hill explained that students who connect with teachers are typically the most engaged. Teachers tend to notice students who actively participate in class because they hear from them. As a result, they recognize their faces and get to know their personalities and academic abilities. Meanwhile, the quiet and disengaged student is the unseen (i.e., invisible) student. The invisible students are those who are having the least amount of fun, are disconnected from the teacher, and feel alienated from the class as a whole. Dr. Hill clarified that “essentially, in my [his] experience, teachers are more likely to connect with top performers and/or outspoken students.” However, in terms of trajectory, he believed that it is not only critical for teachers to engage with *all* students, both “outspoken” and “invisible,” but that the class structure should also change. He advised:

Just knowing a teacher cared would have made a difference in my sense of belonging. But, in terms of my [educational] trajectory, I would have remained disengaged or detached from the content unless the structure [of K-12 classes] changed and education [lessons] actually catered to my learning style. [C1, C2, C3]

Question Three: How do Black males describe or understand key factors that contribute to their success in the medical field (i.e., STEM)?

The qualitative interview data revealed that the Black male interviewees describe or understand the key elements of their success in STEM, specifically in the medical field, as 1) fellowship with other minority peers within similar programs, 2) exposure to like-role models in the desired profession, and 3) *consistent* positive mentorships throughout their endeavors. Also, the participants expressively noted and/or inferred in their stories that their achievements were attributed to personality traits and work ethic such as grit, hard work, opportunity-seeking, time investment, and resilience.

During the initial interviews of each participant, I asked about the racial makeup of their K-12 schools and higher education institutions. Mr. Taylor and Dr. Hill described their K-12 schools as “Black schools,” estimating 90% or more of the student body as African American/Black. Their undergraduate institutions were racially and culturally diverse, with a combination of White students and students of other minority races; however, there were few Black students enrolled in the medical programs (i.e., graduate level) where they studied. Notwithstanding the paucity of Black representation, participants felt a sense of belonging within the program, seeing others who looked like them work toward a common goal.

Interviewer: Were there others in your program who looked like you?

Mr. Taylor: In my graduating PA [physician assistant] class, it was me and one other Black person [male], so it was only two of us [Black students]. The rest were mostly Caucasian with a few others, like Asian or Indian but primarily Caucasian.

Mr. Taylor also stated that he and the other Black male physician assistant in his PA class remain close to this day. He also made acquaintances outside of his race, but he acknowledged that it

was still beneficial not to be the only Black person in a class [C3]. Mr. Taylor was then asked how he felt about being a minority in his graduate-level studies.

Interviewer: What were your feelings and thoughts about being a minority in your PA program?

Mr. Taylor: I mean we [Black people] came a long way...but still have a long way to go. I'm both happy and disappointed. Happy that African Americans have the opportunity but disappointed it's not more of us taking advantage of the opportunity or having the resources to take advantage of the opportunity.

To that end, Mr. Taylor credited his career success to his aunt and his mentor, Mr. Lee, PA-C (pseudonym), for exposing him to the PA profession, persistent mentorship, and grit. Mr. Taylor stated that the difference between his K-12 and collegiate education was that he discovered his “interest and somebody tapped into that interest, and he became obsessed.” He then explained, “Exposure to both the lifestyle and the body of work that they put in to have that lifestyle had me interested and the money was just a byproduct.” Mr. Taylor's aunt first introduced him to the profession of Physician Assistant, but his connection and/or interest grew when he met Mr. Lee, PA-C. (a Black male). Mr. Taylor recalled:

It was just seeing that at that time an African American male was doing big things in the PA profession. It was just seeing that and seeing that was like, oh man, if he can do this, I know I can do it then....my Aunt was naturally smart, at least that's what I perceived and him....he was a goofball just like me. When I went to shadow him, he wanted to joke. He wanted to laugh, he just, I saw myself in him. [C3, C4]

Mr. Lee's mentoring of Mr. Taylor extended beyond the hospital. For instance, Mr. Taylor recounted that when he first applied to medical school (PA program), he was denied admission

despite exceeding program requirements. Mr. Taylor refused to accept the denial and called Mr. Lee, who supported him and assisted him in submitting an appeal to the admissions department, which resulted in Mr. Taylor's acceptance. Mr. Taylor added that he pays it forward by mentoring others and that his interest in science and the medical field are the driving forces behind his "grit." [C5]

Mr. Taylor: I'm always open to mentoring because it helped me. One of them [mentee] works with me today, he (a Black male) went to high school with me. Ummm, he shadowed me and I wrote his letter of recommendation for PA school. He's out now [graduated] and works with me, we do the exact same thing. Outside of mentorship, what motivates me...my interest in this field...ummm, I don't know. It's something you can't teach. It's called grit...hard work, you can't teach that and I just have it. [C3, C4. C5]

The other participants were asked the same questions as Mr. Taylor. Similar to Mr. Taylor, Dr. Hill remembered relatively few Black students in his medical program, but he appreciated meeting the ones that shared his racial identity and came from similar backgrounds. For example, during his undergraduate studies, Dr. Hill developed a close friendship with a Black male who also aspired to be a medical doctor, and the two ended up in the same medical school. During his first year of medical school, Dr. Hill eventually met his now wife (a Black female) who was also a medical student. Dr. Hill informed that "typically, an average of 2% of Black/African Americans attend medical school;" hence, having both his closest friend and wife working toward a common goal provided "a boost of confidence and motivation" and a "stronger sense of belonging" [C3]. Dr. Hill went on to say that he developed good friendships with a few other Black medical students as well as students of other races, suggesting that, in general, inclusive surroundings aided his performance.

Dr. Hill: The [racial] makeup of my medical program was predominately White and Asian. Well, White, Asian, and Indian, I guess.

Interviewer: What was it like being a minority in your medical program?

Dr. Hill: And it wasn't too bad because you start to understand. You know? If you're African American, the higher you go in academics, the more of a minority that you're going to be. Even at [alma mater named removed] as a bio [biology] major, I was a minority. I mean, that's just kind of...part of [the] territory...So that necessarily didn't bother me as much. But I know I'm not the only person. I was just blessed enough to find my way to something...it's not like I was just some special entity child coming up, or the A-student or on the Principal's list type of student coming up. So, it's hard for me to believe that there are not other people like me...people just learn differently or learn better with a different structure and can be successful once they get to this part. A part of it is just like, I understand why I'm the only person here, *but* I don't understand *why* I'm the only person here. Like, I shouldn't be the only person here because I didn't do anything special coming up. [C2, C5]

Dr. Hill added: I became really good friends...a best friend with one of my classmates in undergrad. He was like me. Later, I met my wife, I think by [my] first year...so again, I wasn't the only one. I met a few other Black students in different stages of the program but also got along well and developed lasting friendships with non-Black and non-American students. We got along...and worked really well [together] and we were all kind of in this...(pause)...thing...together. [C3, C5]

Whereas Mr. Taylor and Dr. George were exposed to the medical field and mentored by a Black male physician assistant and physician, respectively, Dr. Hill was exposed to and

mentored by a Lebanese male physician. Dr. Hill informed, “Dr. Wallis (pseudonym) was not Black/African American, but he was a first-generation college graduate, he came from very little, parents who sacrificed everything for his education, and he moved here [United States] and made a life for himself and his family.” Dr. Hill continued his story by explaining that Dr. Wallis' persona was significant in enhancing his STEM identity, thereby, fostering a “physician identity.”

Interviewer: What motivated you to attend medical school? Can you tell me the story of when you realized you wanted to be a medical doctor?

Dr. Hill: ...a physician that worked at [removed], named Dr. Wallis [name replaced with pseudonym] whom I credit for bringing me into medicine, I give him all the credit in the world and all the love in the world as well. I had the opportunity to shadow him. He was like, yeah, you know, just come shadow me. He was the chief of the [removed] clinic at the [removed], and I absolutely loved it, for me, changing to [making the decision to pursue] medicine was more about me finding a job that I thought I could do for the rest of my life, not necessarily you know, any of the other stories you hear about either a family member passing away, etc. [C4]

Interviewer: A career versus a job?

Dr. Hill: Right. Yeah, exactly a career and I mean, that's the first time I was like, you know what, not only would I be happy doing this, but I would *want* to do this. And so, um [a] combination of the science, critical thinking, and academics that you kind of learn in class...you know, talking to patients and being a leader and teaching patients like that, taking all those characteristics that...I pretty much been practicing and building on

throughout...(paused)...my life. I think it just kind of all came to me at one time and I was like, I think I'd be a good fit for this and vice versa. [C3, C4]

Interviewer: What was it about Dr. Wallis that truly inspired you to pursue medicine?

Dr. Hill: Um...how he interacted with people. He was [a] very compassionate, empathetic type [of] person. No matter your background, didn't matter where you were from, Black, White, Hispanic...all races. He was really...(paused)...he genuinely just cared about people. Not only that he was in a position to *actually help people* and actually change lives or change their [patients'] outlook and change how they felt. Or give them some words that made them feel better or able to kind of do something for them....I saw in him my family [professions] such as law enforcement, teaching [education], and some other kind of community service. So that kind of resonated with me. I also had the academic background to go with it as well. But as far as ethnic background...we're completely different, just like my microbiology professor, it was just how he treated other people and how he used his knowledge to help better other people, which I kind of had in common with him. [C4]

Beginning with his last year as an undergraduate, Dr. Wallis was consistent in his support and guidance of Dr. Hill's path to medical school, as well as his encouragement while Dr. Hill was in medical school which offered accountability. Dr. Hill described Dr. Wallis as "reliable" and "predictable" with his check-ins; for example, he stated, "I knew after a test or at the end of the semester, I would be getting a call from Dr. Wallis...knowing that pushed me to do well or try hard so that I could give him a good report." Unfortunately, Dr. Wallis passed away a few months after Dr. Hill began his medical residency program. Dr. Hill stated, "In his [Dr. Wallis]

memory, I do what I know he expected of me and take time to mentor others whenever the opportunity presents itself [as] like he did for me.”

Dr. Hill also emphasized the significance of "opportunity seeking." He remarked that possibilities for exposure (e.g., shadow experience or internships) and mentorships would not have happened if he had not sought such opportunities.

Dr. Hill: You know, we live in a society where it's not much of us [in the STEM/medical field].

We [Black/African Americans] are behind the curve, just based on your ethnic background. You will have to work harder; you will have to be more patient...you will have to reach out. I think that's the biggest component, you have to reach out to mentors and [other] people to get where you want to go or should be...well to get to where they are...that's the only way because there are not going to be many people that can tell you how to get here. You know, parents do their best with discipline. But [my] parents were not in the situation [that] I'm in today, [they] didn't know how to create that structure to get me there. You have to be a person that seeks opportunity, not wait for it to come to you. [C5]

Dr. George, unlike Mr. Taylor and Dr. Hill, was surrounded by a more diverse set of people throughout his educational experiences, including K-12 and higher education. He appreciated learning environments that fostered the holistic development of minority students, such as African American/Black and Hispanic students, and noted that his alma mater, in particular, provided “good” counsel and assistance to students of color. Dr. George also highlighted peer support from minority classmates throughout his most difficult experiences as a medical student.

Dr. George: I felt I would struggle more if I went to a school that had much less representation with minority students. During the lowest times of my medical school career, those are the students that encouraged me the most. [C3]

Nonetheless, it was vicarious experiences such as bibliotherapy and exposure (i.e., shadow experience) that originally encouraged Dr. George to pursue a career as a medical doctor.

Interviewer: Moving into your adulthood, what motivated you to attend medical school?

Dr. George: Reading a book called *The Pact*. It's about three young men from a neighboring city called Newark in New Jersey who grew up against all odds in the hood and became doctors. I grew up during the "SparkNotes Era" and was a poor reader so I seldom read books. This was the second book I can recall that I remember reading from cover to cover. It changed my life. [C4]

Dr. George added: We often hear as African American students; we have to work 2-3 times as hard as our White counterparts to be excellent. I certainly felt that throughout the various stages of my life. However, combine that statement with the fact that many of us African American students from my neighborhood never encountered a Black doctor. As naive as it sounds, I did not even consider being a doctor a possibility until I read a book about Black male doctors that hit close to home. [The] exposure led to a dream that led to reality 12 years later. [C4, C5]

Interviewer: Earlier, you also mentioned your mentor. Can you tell me a little about that?

Dr. George: Yes, in high school, when I finally met a Black [and male] doctor and I got to shadow him, things really came into place. He still mentors me to this day...having a mentor is critical...someone to help guide you and keep you encouraged. [C3, C4]

More telling is Dr. George's time investment and resilience when pursuing academic and career goals. Throughout his interviews, Dr. George stated that he maintained a relatively high-grade point average but that standardized multiple-choice tests had always been difficult for him. I discovered that regardless of his test scores, Dr. George consistently dedicated a considerable amount of time to his studies and took advantage of opportunities such as study abroad programs (as did Dr. Hill), driven to meet and/or exceed expectations. Most notably, Dr. George did not make the preliminary shortlist for interviews at various medical residency programs as he prepared for Match Day. For clarification, to "match" or "Match Day" is when the National Resident Matching Program (NRMP) notifies medical students of where they have been placed or selected for medical residency or fellowship training programs (as explained by Dr. George). He told the story of his first choice of residency programs and how he was rejected without an interview, yet he was matched with the same program that initially denied him. Dr. George recounted:

Everyone...the med [medical] students in my cohort were receiving call backs and interviews. No one was calling me and I didn't have any interviews lined up, but I knew where I wanted to go for residency, and that was [name removed]. They sent me the typical rejection email without even giving me the opportunity to interview. I knew it was a long shot, but I emailed them and asked how I could improve or add to my resume in order to be considered for a spot in their residency program. Finally, they agreed to interview me. And then, on Match Day [year removed] I matched into my dream program despite being academically in the bottom 5th percentile of my class into a specialty that was considered very competitive at my school. The same residency program that first

rejected me. I guess I just refused to not match with a program of my liking, so I fought for a chance, even when they first told me no. [C5]

Discussion

The amount of Black males enrolling in gifted and talented programs (GATE) has historically been disproportionate, putting Black males at risk of falling short of their potential if they do not have access to education programs tailored to their specific needs (Bullard et al., 2021; Bullard et al., 2022; Ford, 2011a; Grantham, 2011; Grantham, 2013). After a thorough literature review, I discovered that patterns of inequitable gifted representation among Black males resembled data from more than 10 years ago, which is cause for concern and further investigation. Not to mention, Black males' inequitable representation in GATE mirrors their representation in advanced STEM-related courses and careers (Collins & Jones Roberson, 2020; Flowers & Banda, 2019; Davis et al., 2019). Bullard et al. (2022) evaluated statistical data from the Office of Civil Rights 2017 - 2018 database and observed that, while Black females were likewise underrepresented in GATE, Black men were less likely to be enrolled in Georgia's GATE services than their female counterparts.

The findings of Bullard et al. (2022) prompted the quantitative analysis of school-level factors that influenced the gifted identification rates of Black males in Georgia schools in chapter three. The data revealed that the predicted gifted identification rates for Black males were lower for those attending low-socioeconomic status (i.e., Title 1) schools regardless of the school's physiographical region. Based on the findings of the literature reviewed, this could be explained by implicit bias, lack of training in the multidimensions of giftedness, and/or low percentage of minority teachers (Frasier, 1997; Module, 2009; Ford, 2011; Grissom & Redding, 2016). Nonetheless, in order to compensate for the quantitative findings, I determined that a qualitative

study was necessary to get at the everyday realities of this social phenomenon of Black male underrepresentation in GATE and ask critical questions to help extend knowledge and understanding.

In other words, this qualitative study seeks to comprehend human educational experiences by asking questions that cannot be simply quantified. Thus, this study asks, "Where are the gifted Black boys?" by focusing on the retrospective educational experiences of three high-achieving Black male medical physicians who were not referred to or enrolled in GATE programs and/or enrolled/remained in advanced mathematics and science courses. Three subsidiary research questions relating to the overarching inquiry topic were utilized to break down and further study facets of the primary question in order to offer a more precise direction to this research. Question one asks, "How do Black males describe their school experiences from K-12 to college?" Two of the participants from Georgia, Mr. Taylor and Dr. Hill described their K-12 experiences as lacking opportunities for discovery and exploration such as hands-on learning, and freedom to discuss their thought processes and think critically. The participants also expressed that their K-12 teachers tended to be preoccupied with behavioral management and control, and they also reported a lack of social and emotional support, resulting in a lack of positive teacher-student relationships. Evidence of little to no social and emotional support (e.g., teacher-student relationships) for these participants was indicated in statements suggesting that their teachers exhibited low expectations of their abilities and/or feelings of being uncared for.

On the other hand, the third participant from New Jersey, Dr. George described his elementary school experiences as engaging and filled with a variety of differentiated learning activities. As he progressed to middle school, Dr. George became more passive in academics due to peer pressure and image (identity) management issues. Although Dr. George was not

identified as gifted, I found his transition to middle school to be significant as it relates to the social and emotional needs of gifted male students. Gifted males, typically middle and high schoolers, concerned with image management issues may become academic underachievers if their adolescent culture does not value academic success (Hébert, 2001, 2011; see also Kerr & Cohn, 2001). Dr. George also mentioned that, although he became more interested in athletics in middle and high school, he received a referral to enroll in honors Algebra in high school. Regrettably, similar to Mr. Taylor and Dr. Hill, he felt "uncared for" in honors Algebra, as if the teacher "didn't like him very much" or saw him as "someone who didn't belong in the course," which is comparable to arguments made by Davis et al. (2019) as it relates to Black males in advanced mathematics courses. The racial majority of his honors Algebra class consisted of predominately White and Asian students who had been in gifted/accelerated programs since elementary school. Hence, in addition to a lack of teacher support, his peers' familiarity with advanced and accelerated courses made Dr. George feel as if he was falling behind, which led to academic despair, and his motivation to return to on-level classes with his fellow minority peers (i.e., Black/African American and Hispanic/Latinx).

Another recurring theme in the interviews was that classroom structures in terms of kinesthetic and student-led learning were better suited for their learning needs. Kinesthetic learners learn by doing, which means they prefer hands-on (physical action) multisensory activities to learn something as opposed to passively listening to lectures or observing demonstrations (McDougal, 2009; NEA, 2011; Ransaw, 2016; Warren, 2013). Likewise, student-driven (student-led) learning is a type of education that promotes self-directed learning, creativity, and discovery above memorizing facts or traditional lecture-style teaching (Kallick & Zmuda, 2017). The participants stated that they learn best when able to perform hands-on

activities and when given some level of autonomy in their learning. When comparing K-12 and collegiate experiences, mainly for Mr. Taylor and Dr. Hill, the participants thrived more (i.e., increased engagement and motivation) in higher education due to the flexibility and variability of teaching and learning structures combined with 1) curriculum connection to the real world, 2) positive relationships with adult mentors, and 3) inclusive learning environments with fellow minority peers within the same competitive programs.

The participants' responses to question one overlapped with question two, "How do Black males describe or understand the role of a teacher in their educational trajectory?" In conjunction with providing a structure that's conducive to the learning needs of students, the participants described teachers as having an impact on academic performance, both favorable and determinantal. When the participants perceived their teachers as inflexible in teaching practices, unenthusiastic about teaching, and unconcerned with building relationships and getting to know their students, they were disengaged in the classroom. Noteworthy, when describing effective teachers, the participants did not highlight race or gender, only character traits, and teaching practices. Lastly, the third research question asks, "How do Black males describe or understand key factors that contribute to their success in the medical field (i.e., STEM)?" One of the key elements of the participants' positive STEM-identity development is vicarious experiences such as exposure to like-role models in the desired profession from in-person interactions or in literature through bibliotherapy. Vicarious experiences are the observation of others' actions, such as observing or reading (e.g., bibliotherapy) about others' successful performance as a type of modeling, which may impact the observers' self-efficacy (E. F. Floyd & Hébert, 2010; Kudo & Mori, 2015). Bibliotherapy is a dynamic connection between literature and the reader's personality; the power of literature satisfies wants and needs, relieves stress, and

assists readers in identity development (E. F. Floyd & Hébert, 2010; Ford et al., 2000; Ford et al., 2019; Hébert, 1991).

Participants also mentioned fellowship with other minority peers in comparable competitive programs and strong mentorships throughout their endeavors. While it was advantageous for the participants to be surrounded by peers and mentors of the same race, they also emphasized the importance of diversity (e.g., other minorities) as well as being seen, acknowledged, and included by others regardless of their race, noting that what stands out the most is a compassionate person of good character. Throughout each interview, each participant directly stated and/or implied that personal character traits such as grit, hard work, opportunity-seeking, time investment, and resilience were also driving factors in their success. The personality traits or personal factors that influenced the success of each participant were also reported by Rimm et al. (2018). Rimm et al. described the gifted and talented as a tremendous natural resource and cautioned that they must not be “squandered” (v), referencing culturally diverse and economically disadvantaged students as the invisible gifted and shedding light on the greater disparity of gifted Black boys. Because Black boys are identified or described as gifted and talented less frequently, Rimm et al. used results from longitudinal empirical studies and created a list of factors related to the success of minority and low-income students as the following: resilience, racial identity, grit, time investment, and opportunity.

The purpose of asking the selected subsidiary questions was to identify and acquire a deeper understanding of educational factors that may inhibit and/or stimulate Black males in displaying gifted and/or high-potential characteristics. Inhibiting factors enable the researcher to pinpoint the problem in order to develop a solution(s), whilst stimulating elements allow the researcher to provide further recommendations. In general, the research questions allowed for an

evaluation of learning environments to discover whether classes are structured in such a manner that Black males may demonstrate their strengths or exceptionalities. Teachers are less likely to observe potential gifts and talents if students are placed in learning environments that restrict their creative skills, such as critical thinking, teamwork/collaboration, freedom of choice in subtopics, and/or opportunities to manipulate and/or relate the content to their daily lives. Thus, in response to the overall research question, "Where are the gifted Black boys?" I argue that there is a reasonably large amount of gifted and high-potential Black males in our classrooms, yet they are unseen or neglected. Based on the experiences of these three Black men, we may consider the key causes of their invisibility as classroom structures that are not conducive to their learning styles/needs, teachers who may lack training in connecting content to the real world, and a lack of social and emotional support from teachers who may also harbor implicit biases toward Black males.

Implications

Black males are less likely than other minority groups to be enrolled in gifted and talented programs, even if their past accomplishment demonstrates the aptitude to succeed (NEA, 2011). While numerous reasons might account for these statistics, research studies based on teacher referrals of students for gifted education programs show that low minority student enrollment is not by coincidence (Grantham, 2013; see also Elhoweris et al. 2005; Ford et al. 2008; McBee 2006). The findings of this study help to explain why there are few GATE referrals for Black males in Georgia and other states, as well as retention issues for Black males in advanced STEM-related courses. The findings also have important implications for developing teacher training on the unique needs of males and Black males, which highlight the need for policies and procedures that account for evidence of or accountability in offering flexible

learning structures, relatable content, and social and emotional support to minimize the risk of underachievement. Many gifted and high-potential males may underachieve for a variety of reasons. Nonetheless, teachers must be aware that abilities and skills are frequently hidden behind underachievement and devise teaching strategies to increase Black male engagement and motivation. When teachers misinterpret underachievement as a lack of intelligence and/or aptitude, they fail to notice potential, as a result, overlook or deny certain students access to appropriately challenging programs.

Relative to Dr. George's experience in middle school (i.e., developed a passive attitude), Hébert (2011) explained that gifted or high-potential male students may do poorly or not perform to their full potential not because they are unmotivated to study, but because they are concerned with preserving their image in a peer group that does not value academics. Guyer et al. (2009) and Ransaw (2016) added that during the developmental stages between nine and seventeen years of age, boys become more interested in group status. Equally important, learning occurs differently for different students and males tend to be more engaged and learn best through kinesthetic learning, especially for Black males (McDougal, 2009; NEA, 2011; Ransaw, 2016; Warren, 2013). "However, Black males prefer receiving information both kinesthetically and in other ways; they may prefer information presented to them in a way that helps them see the world so as to adapt to it in ways that are meaningful to them" (Ransaw, 2016, pp. 3 – 4).

Participants' remarks of "feeling uncared for" by their K-12 teachers, paired with perceived low expectations from their teachers, point to a deficiency of knowledge and/or training on supporting male and Black male students' social and emotional development as well as possible deficit thinking guided by implicit biases. Integrating social and emotional support in the classroom is necessary for assisting students in developing critical life skills that extend

beyond academics, and most importantly, providing such support helps students feel cared for by their teacher (s). During a TED Talk by Rita Pierson, audiences were reminded that "kids don't learn from people they don't like," and this is especially true if the student believes the teacher dislikes or overlooks them. The findings of this study raise questions regarding the nature or extent to which teachers invest time and effort in making students feel valued. When considering the overrepresentation of White female teachers in K-12 public schools, it is essential to take into account empathy and positive relationship building between teachers and Black males who are frequently subjected to negative stereotypes (Ford, 2014; Ford et al., 2008; Frasier, 1997; Harper & Davis, 2012; Howard, 2013; Warren, 2013).

Prior studies have noted the importance of positive self-images among marginalized students; for example, Ford et al. (2011) informed that "self-esteem and self-concept significantly affect students' academic performance; those with positive self-images or self-perceptions are more likely to do well in school than those who have negative perceptions of themselves" (p. 245). In a 1977 empirical study conducted by Aspy and Roebuck, the authors also stated, which still holds true today, that "students learn more and behave better when they receive high levels of understanding, caring, and genuineness, than when they are given low levels of them. It pays to treat students as sensitive and aware human beings" (n.p). This study further indicates that diverse and inclusive learning environments promote Black males' sense of belonging and academic performance in terms of their collegiate success in medicine (i.e., STEM).

When participants learned alongside people of the same race and background as well as others from different (diverse) racial and ethnic groups, it provided encouragement, relatedness, and strong community peers and colleagues. Diversity and inclusion also teach students how to

contribute to a diverse working environment by utilizing their individual abilities and points of view; thus, Black males would be less prone to stereotype threats and recognize their value (worth) as members of and contributors to society (Ford, 2014; Banks, 1993a; Banks, 1993b). Not to mention, an inclusive classroom delivers global academic benefits for both majority and minority group members, such as enhanced critical thinking and greater overall accomplishment levels (Ameny-Dixon, 2004; Bowman, 2010; Elicker et al., 2009; Kite & Clark, 2022). However, diverse and inclusive advanced and gifted education programs will only exist if and when students from underrepresented groups, such as Black males, are offered more access and offered the necessary support for retention.

As previously stated, recurring phrases that describe K-12 teachers' attitudes or impressions of the participants, such as "uncared for, labeled, overlooked, thought I was stupid," not only imply a lack of social and emotional support but also hint at implicit biases. I contend that, in order to increase the equitable representation of Black males in gifted and/or advanced education programs, classroom structures, curriculum, and teaching practices must be conducive and flexible to their unique needs. Yet, if the underlying source of the problem, such as harboring implicit biases, is not addressed, teachers' buy-in to make such adjustments will not occur or teachers would unwittingly revert to their old ways of teaching.

Limitations

The considerations of these results, as it relates to high-achieving Black males not identified for gifted education, is subject to certain limitations. For example, although the narrative inquiry of retrospective counter-stories is a valuable method to address sociological questions and is appropriate for this study, "narratives may suffer from recalling selectively, focusing on subsets of experience, filling in memory gaps through inference, and reinterpreting

the past” (Marshall & Rossman, 2016, p. 157). Because this study focuses on males, it is important to note that, while the participants are part of a population frequently underrepresented in gifted and talented programs, previous research indicates that males are generally late bloomers and may exhibit exceptionalities later in life (Laureys et al., 2021). Both the researcher and participants were also limited by the timing of this study (i.e., retrospective) and pressing events surrounding the COVID-19 pandemic. Thus, this study is limited by the absence of K-12 school artifacts such as report cards and standardized assessment scores.

Yet, the participants were confident in recalling academic grades and standardized scores, as well as accolades ranging from K-12 to collegiate studies. Additionally, copies of their resumes were analyzed, and Google and social media searches were conducted which highlighted their academic and professional recognition during award ceremonies. As previously mentioned, this study cannot confirm the participants’ eligibility for gifted education services during K – 12 schooling. Despite these limitations, their stories produced data to identify potential gifted characteristics as defined by the National Association for Gifted Children (NAGC) and described in existing scholarly research on gifted traits. The study also provides insight into class structures and teaching practices that may prevent Black males from showcasing their true potential or ability, while also offering information on driving forces that propelled their success.

Recommendations

The collective qualitative findings highlight a significant need to provide training and modalities of evidence that demonstrate K-12 teachers’ understanding of supporting Black male students socially and emotionally as well as building positive relationships. Hence, this study raises the question of how well K-12 public education teachers are prepared in supporting

children from special populations and whether they are actively encouraged to address any implicit biases they may have toward students of the opposite gender and/or race. Future research could also be conducted to determine the effectiveness of teacher training (i.e., teachers' comprehension and buy-in) and account for barriers that teachers may encounter in implementing flexible learning structures such as differentiated learning styles and empathic practices conducive to Black males.

Following the identification of such barriers, recommendations can be made for more inclusive policies through the Local Education Agency (LEA) to promote teacher education on multidimensions of giftedness, teaching racially diverse groups, and strategies to encourage (spark) potentialities among Black males. As a result, more diverse and inclusive spaces in competitive educational programs would be assessable, and therefore, improve Black males' sense of belonging and academic performance. In addition, taken collectively, these findings support recommendations for out-of-school programs that emphasize constant mentorship and the use of bibliotherapy. Because participants associated these factors with their STEM identity development and scholarship, perhaps if we made more such programs available to Black males at an earlier age, they might display high potential and/or abilities sooner.

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APPENDIX A.4

UNIVERSITY OF GEORGIA CONSENT LETTER

Where are the Gifted Black Boys? A Qualitative Study of Three Black Male Medical Physicians Overlooked for Gifted Education during their Youth

Dear Participant,

My name is Annessia J. Bullard, and I am a Doctoral Student in the Department of Educational Psychology in Gifted and Creative Education at the University of Georgia. Under the advisement of Dr. Tarek C. Grantham, I am formally inviting you to participate in a remote interview that aids my research with storytelling as it applies to race and gifted education programs. The purpose of this interview is to provide a narrative of your K – 12 experiences and the pathways of your current accomplishments as a Black male in the field of medicine.

Study Procedure

If you agree to participate, you will be asked to: participate in a remote semi-structured interview (45 minutes) and 2 follow-up interviews (30 minutes each) where I will ask questions concerning your K – 12 schooling and collegiate experiences. The interview will consist of only you and me. Specifically, interview questions will consist of: What were your school experiences like during K-12 to college for a Black male? How do you as a black man describe or understand the role of a teacher in your educational trajectory? What were the key elements that lead to your success as a Black male in medicine (STEM)? The audio recording will be used to transcribe your interview for research. You may always skip and/or decline to answer questions during the interview and end or cancel the interview at any time, for any reason. The total time commitment of participation per activity is described below:

- a) 5 minutes estimated to read and review brief description of study and sign consent form.
- b) Complete a 2-minute online survey to reaffirm their eligibility for this study.
- c) Participate in a 45-minute interview via Zoom.
- d) Participate in 2 follow-up interviews, estimated to be 30 minutes each.
- e) Participants have the right to review transcripts, preliminary findings and updated written drafts. If participants decide to read the documents and provide feedback when shared, 25 – 60 minutes are estimated for each review. 3 reviews are estimated to occur –
 1. Transcripts and preliminary findings,
 2. Manuscript draft 1, and
 3. Final manuscript.

Thus, you are being asked to commit approximately 3 to 5 hours maximum to this study.

Remote Interviews for COVID-19 Safety Precaution

In response to the COVID-19 pandemic, all interviews will be conducted remotely via a secure Zoom platform. This means that you and I will meet remotely as a safety precaution to prevent the spread of the coronavirus. In order to safeguard your privacy, I will enable passcodes to access the Zoom meeting room. The passcodes will only be shared with you, myself, and the Principal Investigator of this study. For further COVID-19 safety and flexibility, if and when needed, you may share written responses to follow-up questions via a restricted Google document, which is only shared with the email provided by you. This alternative method for asking and answering potential follow-up questions is to exercise social distancing and respectfully accommodate extended work hours often encountered by medical physicians, like yourself, in response to the coronavirus outbreak. This study will not require any in-person participation. The entire study will be conducted remotely.

Voluntary Participation

Your participation is completely voluntary. There is no expectation for you to participate and know that you can choose to withdraw consent at any time without penalty. In addition, if your materials are used in future presentations or publications, you will be notified and provided the opportunity to review, approve, or redact the use of your story. You may skip any questions you do not wish to answer. You are free to withdraw your participation at any time should you become uncomfortable with the interview or process.

Risks and discomforts

The interview questions require you to reflect on personal experiences regarding race, and therefore may cause psychological risks (e.g., feelings of stress/discomfort, sadness or anxiety, etc.). Efforts will be made to minimize psychological risks in ensuring that your narrative is used to inspire and uplift others who may share common experiences. Please remember that you have been asked to complete this interview because of your success and influential reputation within your community.

Benefits

There are no direct benefits for participating in this study. However, this study is intended to promote self-efficacy and self-identify for Black students and to encourage awareness for diverse characteristics of gifted minority students, particularly black boys.

Incentives for participation

This is no incentive or compensation for participation.

Audio Recording

An audio recording device will be used to review your responses and to transcribe the interview to determine commonalities between all participants. Commonalities found will help to examine

the educational experiences and characteristics of un-identified gifted Black males [those who were not identified for gifted education]. All recordings and records of this interview will be destroyed within 5 years after completion of the study. Participants may also skip or decline questions and/or cancel the interview during the audio recording at any time.

Privacy/Confidentiality

You have the option of choosing your own pseudonym (fake name) for this study. You can change your mind about this choice at any time throughout the course of the project. Any publications or presentations that include your story will be shared with you for your final consent before publication or presentation. All materials for this project will be confidential and kept on a password protected cloud drive accessible only by me (the researcher) and PI.

All data collected from you will be de-identified by assigning a pseudonym of your choice. De-identified information obtained from this research may be used for future studies (or shared with other researchers) without obtaining additional consent; however, raw data such as recordings will not be shared outside of the researcher and PI. Interviews will be recorded and transcribed via Otter.ai – an audio to text software.

We ask that you do not provide your name or other identifiable information when sharing your experiences throughout the study. When sharing or publishing results, your information may be presented through anonymous quotations or through group themes. Raw data will be destroyed 5 years after the study's completion. Researchers will not release identifiable results of the study to anyone other than individuals working on the project without your written consent unless required by law.

Data Collection via Internet

This research involves the transmission of data over the Internet. Every reasonable effort has been taken to ensure the effective use of available technology; however, confidentiality during online communication cannot be guaranteed.

Moral Practice

As a moral practice in case study research, preliminary findings (my interpretation) of the data collected (your story/narrative) will be shared for participant validation. This is to confirm that you find my writing to be accurate and fair reporting of your portrayal. As my analysis progresses, you will receive an updated copy of your case findings. You are not required to read the document and/or provide feedback. However, you will have the opportunity to review what has been written as the portrayal of your story/narrative to request changes and/or refuse participation at that facet of the study.

Taking part is voluntary

Your involvement in the study is voluntary, and you may choose not to participate or to stop at any time without penalty or loss of benefits to which you are otherwise entitled. If you decide to withdraw from the study, the information that can be identified as yours will be kept as part of the study and may continue to be analyzed, unless you make a written request to remove, return, or destroy the information.

Questions/Concerns

If you have questions about this research, please feel free to contact the Principal Investigator, Dr. Tarek C. Grantham, at grantham@uga.edu or the co-Principal Investigator, Annessia J. Bullard, at ajbullard@uga.edu. If you have any complaints or questions about your rights as a research volunteer, contact the IRB at 706-542-3199 or by email at IRB@uga.edu.

Please let us know what questions you have and thank you for your consideration!

Best,

Annessia J. Bullard & Dr. Tarek C. Grantham

Please indicate your consent to the following options (check all that apply):

- I consent to participate in this study.
- I consent to the use of my story/narrative for this project.
- I consent to the use of my story/narrative for other future conferences and/or publications.
- I consent to have my remote interview audio recorded.
- I understand that all interviews will be conducted remotely as a safety precaution to prevent the spread of COVID-19 and held via Zoom meeting with an assigned passcode.

Use of pseudonym (if you do not enter a desired pseudonym, a randomly selected pseudonym will be chosen for you):

- I would like for the researcher to randomly select my pseudonym for this project at this time.
- I would like to select my own pseudonym or fake name for this story.

I would like my pseudonym (fake name) to be: _____

Please write your first and last initial only in the box below to serve as your consent:

Note: Only initials will be requested instead of “full name” to add protection to the privacy of their identity. Additionally, by receiving the initials, I’ll know which pseudonym belongs to which participant.

APPENDIX B.4

CASE STUDY INTERVIEW – PRELIMINARY QUESTION GUIDE

Where are the Gifted Black Boys? A Qualitative Study of Three Black Male Medical Physicians Overlooked for Gifted Education during their Youth

Research Questions: How do Black males describe their school experiences during K – 12 to college? How do Black males describe or understand a teacher’s role in their educational trajectory? How do Black males describe or understand the key elements that lead to their success in the field of medicine (e.g., STEM)?

Interview Topic: Past educational experiences for Black males in medicine who were not referred for gifted eligibility testing and/or gifted placement.

Consent/Script: Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. You are invited to participate in a remote interview that aids my research with storytelling as it applies to race and gifted education programs. The purpose of this interview is to provide a narrative of your K – 12 experiences and the pathways of your current accomplishments as a Black male in the field of medicine. Please ask the researcher [the interviewer] if there is anything that is not clear or if you need more information, you may also skip questions or stop the interview at any time. When all questions have been answered, you can decide if you want to be in the study or not. This process is called “informed consent.” Do you have any questions before we start? I would like to verbally confirm that you have read and signed the online consent form that was sent prior to the scheduled interview via email. Yes? Are you ready to proceed?

Remote Interviews for COVID-19 Safety Precaution:

In response to the COVID-19 pandemic, all interviews will be conducted remotely via a secure Zoom platform. This means that you and I will meet remotely as a safety precaution to prevent the spread of the coronavirus. In order to safeguard your privacy, I will enable passcodes to access the Zoom meeting room. The passcodes will only be shared with you, myself, and the Principal Investigator of this study.

For further COVID-19 safety and flexibility, if and when needed, you may share written responses to follow-up questions via a restricted Google document, which is only shared with the email provided by you. This alternative method for asking and answering potential follow-up questions is to exercise social distancing and respectfully accommodate extended work hours often encountered by medical physicians, like yourself, in response to the coronavirus outbreak.

Probing Interview Questions

1. What did you know about the Gifted Education Program as a child? [Preferably during K – 12]

2. Reflecting on your elementary and middle school self, how would the following individuals and/or groups describe your academic and social behaviors? For example, what characteristics would be highlighted and why? (e.g., motivated, curious, bored, talkative, popular, quiet, outgoing, laid back, leader/follower, dramatic, uninterested, creative, critical thinker, etc.) *Before the interview, feel free to reach out to the following individuals to assist with your answers.*

For example:

Described by parent(s)/ guardian(s) as..... Described by siblings as (please skip if the only child) Described by peers as.....

3. How do you think your teachers perceived you as a student? *Possible follow-up: How did your teacher(s) perceive you as a person?*

4. Tell me about a time when you felt challenged for the first time in the classroom (K – 12 and/or Collegiate)? And disengaged (bored) in the classroom?

Possible follow-up: What do you think the teacher could have done to.....

5. How do you learn best when learning new content? What type of learning environment would be most engaging?

6. How would you describe your overall K – 12 educational experiences?

For example:

In elementary, my classes were.....The teachers mainly taught me by..... In middle school my classes were..... The teachers mainly taught me by..... In high school my classes were.....The teachers mainly taught me by.....

7. What was the demographic (race, ethnicity, socioeconomic status) make-up of your K – 12 schools/community? College/University?

8. Were you involved in extracurricular activities and/or sports? If so, how were you described by coaches/sponsors and teammates? How did you feel about your participation in those activities? What made you feel that way?

9. Moving into the present moment, what motivated you to attend medical school? How did you know this goal [MD or PA] was attainable?

10. What is/was the racial make-up of your graduate/medical program?

Possible follow-up question: How does it make you feel or think in being the “minority” of your program?

Reflexivity Memo Section [For Interviewer Use]

CHAPTER FIVE
ADDRESSING IMPLICIT BIAS AND UTILIZING THE DEGREES OF EQUITY GRADING
SCALE (DEGS) TO WORK TOWARDS EQUITABLE GIFTED REPRESENTATION OF
BLACK MALES

Following an intensive literature review on Black males and gifted education, it was discovered that, generally, Black males had been underrepresented in gifted and talented education programs (GATE) for several decades (Frasier et al., 1995; Frasier, 1997; Grantham, 2013; Naglieri & Ford, 2003; Whiting, 2009). Students with gifts and talents as those who perform at higher levels compared to others of the same age, experience, and surroundings in one or more fields and come from diverse populations (NAGC, 2019). A gifted or high-ability student may have exceptional gifts and talents “regardless of academic performance; therefore, giftedness is inclusive of both those who have remarkable achievements and those who have the capacity to do so (Peterson, 2015, p. 153). With the disproportionate representation of Black males in gifted education, many of their strengths or gifts are neglected and their psychological needs are unmet. The underrepresentation of Black males was also seen in advanced mathematics and science courses in K-12 schools, which is an area related to the concepts of gifted education (Davis et al., 2019; Flowers & Banda, 2019). What’s more, I conducted a quantitative investigation on school-level factors that influenced gifted identification rates for Black males. This study was followed by a qualitative study based on the previous statistical findings. According to statistical data, the predicted gifted identification rates for Black males were lower for those attending schools of low-socioeconomic status (i.e., Title 1), and schools

located in physiographical regions of rural areas. The sample data also revealed that no matter the physiographical region in which Black males were enrolled, the proportion of Black males in gifted education was still lower in Title 1 schools. I also conducted a case study exploration of the educational experiences of three high-achieving Black male medical physicians, in which I found that collectively participants felt overlooked, labeled, and as if their teacher(s) held them to low standards and perceived them as incapable during their K-12 education. Participants were first-generation college graduates who attended K-12 public schools in low to lower-middle-class communities, were not referred for and/or enrolled in gifted education programs, and one of the participants withdrew from an advanced STEM course (i.e., Honors Mathematics).

To that end, the disconcerting statistics of inequitable representation of Black males in advanced educational settings are alarming because when students do not receive the most appropriate education to meet their needs, they become at risk of failing to realize their true potential and underachieve. Underachievement can be caused by various factors that include but are not limited to poor or inappropriate instruction, and students who do not perform well in school may feel overlooked, out of place, incapable, or dumb (Ford et al., 2011; Reis & McCoach, 2000). When students underachieve, it is frequently assumed that it is the cause of inability or laziness, rather than reevaluating teaching practices and/or teacher-student relationships and blaming structural inequality and/or systemic inequities (Ford et al., 2011). If educational institutions intentionally or unintentionally project to Black males that they are troublemakers and intellectually incompetent, then we obstruct their positive self-concept and motivation to strive (C. Bell, 2020; Ford et al., 2011; Gilliam et al., 2016; Harper & Davis III, 2012).

In order to help Black males to reach their highest potential and feel confident in their role as contributors to society, classrooms must offer inclusive learning environments and equip them with STEM talent development. STEM talent is valuable across the curriculum and consists of skills that are universally applied to enhance ways of thinking, learning, working, and living in the 21st century (Anderson & Coleman-King, 2021; Anderson et al., 2022; Bullard & Bahar, 2023; Collins & Jones Roberson, 2020). Effective teaching and mentorship stimulate self-efficacy, positive self-concept, and STEM talent for racially and culturally diverse students. This can only be achieved by teachers who are adequately trained to incorporate critical and culturally relevant, and most importantly, social and emotional support to historically marginalized populations (Anderson et al., 2022). Thus, in considering the importance of equitable education and the possible implications on Black males' identity development due to persistent underrepresentation in gifted education, further investigation is warranted.

To that end, the initial step is to incorporate courageous diversity and inclusive teacher training for future and practicing teachers, which includes discussing implicit biases and implementing self-check tools to evaluate equity in gifted and advanced education programs (Grissom & Redding, 2016; Singleton & Hays, 2008). Thus, the purpose of this conceptual study is to define and promote awareness of implicit biases within educational settings and introduce the Implicit Association Test (IAT) as a tool to stimulate courageous conversations and take action toward building equitable GATE programs for Black males. This article also introduces and recommends the Degrees of Equity Grading Scale (DEGS) as a self-check tool for school districts to evaluate program equity, motivate planning and actions toward equity, and conduct routine monitoring of their GATE program's equity status. More specifically, the primary objectives of this article are to:

- 1) Define implicit bias and the systems of cognition associated with implicit bias.
- 2) Explain implicit bias through the theoretical framework of Social Learning Theory.
- 3) Highlight previous research that addressed implicit biases in gifted and advanced education.
- 4) Introduce the Implicit Association Test (IAT) as a tool to engage in courageous conversations about race and equity in efforts to increase gifted referrals for Black males.
- 5) Introduce Degrees of Equity Grading Scale (DEGS) as an application framework to evaluate, plan, take action, and monitor the equitable representation of Black males in gifted and advanced education programs.
- 6) Emphasize the need to integrate relevant content, and kinesthetic and scientific experimental learning opportunities conducive to Black males in demonstrating their true potential.

Subsequent Sections

This conceptual article will first define implicit bias and briefly describe cognition systems associated with implicit bias, followed by a discussion of Social Learning Theory as a framework for understanding how implicit biases evolve and can negatively affect Black males' educational experiences and identity development. Next, the article provides a brief review of relevant literature on implicit biases and deficit thinking in gifted education, and then introduces the Implicit Association Test (IAT) as a tool to help educators become conscious of possible harboring biases and to encourage courageous conversations about race and equitable education. Adding to the use of IAT, the Degrees of Equity Grading Scale (DEGS) is also introduced as a self-check and accountability tool for evaluating the equitable representation of Black males within gifted education. Lastly, future research recommendations are made which highlight how

upstanding teaching practices and utilizing multicultural education can shape inclusive classrooms to provide opportunities for Black males to showcase their true potential.

Implicit Bias

Implicit bias is defined as the “attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner” (Staats, 2016, p. 29). Although attitudes and/or actions are oblivious, the beliefs of stereotypes transition into racist behavior – whether racism is intentional or unintentional, people of color are impacted the same. Equally important is the ignorance of prejudice and the unwillingness to self-assess for implicit bias. Without the courage to address and challenge biases, unintentional racism will propagate. I stress the term *courage* to acknowledge a theme identified throughout Aveling’s (2007) findings that “racism is a word that nobody likes” attributable to discomfort, fear, or anxiety. Additionally, Aveling (2007) asserts that for people of color, racism overshadows every aspect of their lives, whereas most Whites can afford to ignore racism because it doesn’t happen to them and commonly believe that racists and racism refer to extremists. When in fact racists and racism are also “products of a complex interplay of individual attitudes, social values, and institutional practice” (Aveling, 2007, p. 70; see also Department of Education and Training, n.d., p. 1). Hence, implicit [unconscious] bias results in unintentional, subtle, and innate racism; it is an act that occurs without notice or planning.

Understanding Systems of Cognition

Several educators are unaware of the racial and cultural biases that they harbor. However, to become conscious of implicit bias, it’s important for educators to first understand the difference between two cognitive processing systems. As a novice in cognitive psychology, I refer to the works of *Thinking, Fast, and Slow* by Daniel Kahneman (2011). Kahneman (2011)

explains that system one of cognition is oblivious, whereas system two is mindful. In other words, system one operates spontaneously, extremely fast, and often “lazy” [without effort] (Kahneman, 2011). In contrast, “system two requires attentiveness or analytical thinking; rather than being automatic and fast, the undertaking of system two requires effortful, deliberate concentration” (Staats, 2016, p. 30). The problem within the relationship between these two systems lies in the “laziness” of system one. In a book review of Kahneman’s (2011) work, Durr (2014) clarifies that typically, “the mind runs on system one, and, for the most part, that works pretty well, but there are times when system two is needed to make a judgment and does not intervene” (p. 287). By understanding the cognitive function of system one, which impulsively responds, then educators can begin to understand biases that come to light unconsciously.

Albert Bandura’s Social Learning Theory (1977) & Implicit Bias

Historically, “many educators in mainstream society have perceived underachievement among culturally diverse students as the result of intellectual inferiority” (Grantham et al., 2005, p. 144; see also Herrnstein & Murray, 1994; Jensen, 1980). Likewise, existing qualitative research has suggested that new teachers have been proven to consider race as a primary factor in defining academic and behavioral expectations, as well as how students of color are treated in their classes (Galman et al., 2010; see also Banks, 1995, 1998, Coleman & Gilliam, 1983, Eliasoph, 1999). In consideration of historical to present-day discriminatory attitudes toward Black males, the examination of stereotyping influenced by social environments serves as a guide to understanding implicit bias and how it translates into unintentional racism. Thus, this article is written within the theoretical lens of Social Learning Theory (SLT), a theory of the learning process and social behavior, which proposes that new behaviors or habits can be learned by observing and imitating the behavior of others (Bandura, 1977). In the context of SLT, I

discuss how cultural and racial stereotypes are activated, and therefore, influence implicit biases. Stereotypes are fixed beliefs about a particular group of people; commonly regarded as a sort of attitude, related to, or a function of, prejudice or authoritarianism (Vinacke, 1957). Stereotyping quickly concludes a person's characteristics, abilities/inabilities, or behaviors based on the group of people with whom they belong or associate. When stereotypes are embedded into the mind (i.e., hence, system one of cognition), others are unconsciously judged by their gender, age, social class, culture, and/or race.

For instance, Katz and Braly (1933) conducted a study to investigate how Americans' stereotypical attitudes toward large social groups manifest toward individual members. When comparing adjectives selected for Whites and Blacks, the authors found that White Americans were seen as industrious, progressive, and ambitious; on the other hand, Black/African Americans were seen as lazy, ignorant, yet musical. Katz and Braly observed that participants were content rating other ethnic groups despite having no personal contact with individual members; hence, one can assume that the stereotypes were learned from others. Katz and Braly's study is significant because it's the first study to scientifically measure stereotypes about racial groups (Philogène, 2001). Katz and Braly's findings aid succeeding comparable studies to illustrate patterns and trends of racial stereotyping that have prolonged throughout generations, such as studies of Gilbert (1951), Drs. Kenneth and Mamie Clark's classic 1954 doll study (see McMillan, 1988), Karlins et al. (1969), Dovidio and Gaertner (1986), Van den Berg et al. (2010) and Denessen et al. (2022). Although such studies were conducted decades apart, their findings were comparable; African American/Black people received more undesirable ratings or perceptions than White people.

Although Black students, as a whole, are historically placed in a marginalized group, this dissertation found that being Black and male exacerbates the marginalization. For example, James (2012) informed that Black males are frequently stereotyped as “immigrant, fatherless, troublemaker, athlete, and underachiever” and this “contribute to their racialization and marginalization that in turn structure their learning processes, social opportunities, life chances, and educational outcomes” (p. 464). James also added that Black males are also subjected to stereotypes of being “fatherless,” and as such endure low expectations from teachers due to being a child of a single-parent household (i.e., single Mom). Stereotyping Black males of single mothers derives from the false assumption that the single parent lacks opportunities to actively engage in their child(ren)’s education and Black male are thus labeled as at risk of failing in school (James, 2012). Black males also bear the consequences of being labeled as good at sports but unintelligent and incapable in academics, which grants them a double negative label — presuming they are inferior students with exceptional athletic skills (Dexter et al., 2021; Hernandez & Davis, 2009; James, 2012). Despite having high educational and social ambitions, Black male youth are continuously stigmatized as underachievers, attributable to inequitable schooling systems such as teachers’ implicit biases and Eurocentric (e.g., unrelatable) curriculum (Ford et al., 2011; James & Taylor, 2010; James, 2012).

Addressing Implicit Bias in Gifted & Advanced STEM Education

Gifted students are provided with specialized education for the purpose of nurturing their gifts and talents in hopes to ensure that their abilities and skills are utilized as future producers of society. Yet, empirical results from a 2015 study conducted by Rimm et al. (2018) revealed that the odds of being identified as gifted were over 3.5 times higher for White reference students than for Black students not eligible for free/reduced-price lunch programs, and almost 12 times

higher for these White reference students than for Black students eligible for free/reduced-price lunch programs” (Rimm et al, 2018, p. 263). Based on a Vanderbilt University study in a peer-reviewed journal of the American Educational Research Association (AERA), using data on more than 10,000 elementary school students from the U.S. Department of Education’s Early Childhood Longitudinal Study, Kindergarten cohort, the study found that black students are 66% less likely and Hispanic students are 47% less likely than White students to be assigned to gifted programs (Brasher, 2016; Grissom & Redding, 2016).

According to Grissom and Redding (2016), “researchers have identified teacher discretion in the gifted assignment process as a potentially important contributor to this inequity” (p. 1). For example, the first step in the gifted identification process is for teachers to refer students; hence, classroom teachers can act as gatekeepers in gifted selections (Donovan & Cross, 2002). Dependence on teacher referrals can be a disadvantage to Black students when teachers exhibit implicit biases such as low expectations and embedded negative stereotypical beliefs, and therefore are less likely to see or acknowledge gifted characteristics in Black students (Elhoweris et al., 2005). Not to mention the stereotype threats posed by acts or behaviors stemming from implicit biases, which Black males are “at risk of confirming, as self-characteristic, a negative stereotype about one’s group” (Steele & Aronson, 1995, p. 797). Black males are subjected to stereotypes based solely on their race, and when Black males come from lower socioeconomic status families, they are subjected to additional biases and low expectations of their abilities.

In addressing the perplexity of the racial inequities within gifted programs, Frazier (1997) introduced four main problems with gifted identification: access, assessment, accommodation, and attitudes. For this article, I focus on access and attitude as these factors relate to implicit

biases and gifted referrals. Access refers to 1) low expectations due to culturally and linguistically diverse students, 2) low rate of referral by gifted minority parents, 3) inability of educators to identify gifted behaviors of minority students, and 4) minimal regard for culture and environment, which impacts teacher referral. However, “the most pervasive reasons for problems in identifying gifted minority students are related to attitudes about the gifted potential in these groups [minority students]” (Frazier, 1997, p. 501).

Frazier (1997) further explained that “even if all of the access, assessment, and accommodation problems outlined above were solved, far more difficult problems related to attitudes about identifying gifted students need to be faced” (Frazier, 1997, p. 501). Attitudes towards identifying minority students for gifted education include the following: 1) concerns that the increase in gifted students will outweigh resources, 2) fears of demands from parents and children not from special populations, 3) belief that minority students are incapable of engaging in or are interested in intellectual endeavors, and 4) common descriptions of gifted students cause a less-than-positive attitude towards minority students. As a result, mainstream stereotypes regarding Black students’ intellectual aptitude and ambition to engage in or succeed in such pursuits may create implicit biases toward Black students that teachers are unaware of. Furthermore, both White and Black middle-class teachers may have biases such as low expectations for minority students from low-income families and project negative judgments toward their parents, particularly those from single-mother homes (Bryan & Ford, 2014; Greene, 2013; James, 2012; Posey, 2012).

Discrimination frequently manifests itself in the form of institutional discrimination or racism (for example, school and/or teaching practices). Although it may be inadvertent, this type

of discrimination denies individuals or groups equal chances and rights (Sithole, 2015). Nieto and Bode (2008) assert:

Racism and other forms of discrimination (such as implicit biases) have a long history in our schools, and their effects are widespread and long-lasting. The most blatant form of discrimination is the actual withholding of education as was the case historically with African Americans. (p. 66).

What is more distressing are the widespread stereotypes of Black male youths as immigrants, fatherless, troublemakers, athletes, and underachievers, or as violent, aggressive, criminal, lazy, and hypersexual (Harper & Davis III, 2012; James, 2012; Smith & Hope, 2020). Taking into account the stereotypes that Black students encounter and the unique stereotypes that Black males endure, prominent researchers in the field of education argue that deficit attitudes or implicit biases contribute to the low rate of gifted referrals for Black males (Grissom & Redding, 2016; Ford et al., 2011; Frasier, 1997).

In a similar fashion to gifted education, Black males are underrepresented in STEM-related advanced educational programs, which translates into unequal representation in professional STEM fields; such professions that require diversity to better understand the growing cultural differences, resulting in better discoveries and innovations. Davis et al. (2019) argued that the underrepresentation of Black males in advanced STEM (e.g., mathematics) education are caused by educational leaders who develop and implement policies, programs, and standardized tests tailored to White institutional spaces, and therefore, serve as gatekeepers in advanced education programs like gifted education, honors, Advanced Placement (AP), and International Baccalaureate (IB) programs. Despite the need to recognize and identify gifts and STEM talents in culturally diverse students through a multidimensional lens, educational leaders

continue to view achievement through a Eurocentric lens, which is an example of deficit thinking in heavily relying on biased standardized assessments (Davis et al., 2019; Ford et al., 2011; Frasier, 1997; Torrance, 1974)

Implicit Association Test (IAT)

Statistical data from 2017-2018 on the United States K-12 educational systems reported that 79% of teachers were White and the majority of those teachers were White females (NCES, 2020; Warren, 2013), and previous research suggested that some of those teachers tended to have low expectations of students who belonged to racial, ethnic, and socioeconomic groups other than their own (Galman et al., 2010; see also Carter & Goodwin, 1994; Irvine, 1990). In addition to these findings, a number of educators, no matter their race, are unaware and/or unnerved by engaging in race talks to address racial and/or cultural biases. Nonetheless, if educators uniquely recognize that our future rests on the shoulders of young people and that investing in their education, health, and overall well-being benefits society, both now and into the future, then this unwavering desire to ensure the best for children is precisely why educators should become aware of the concept of implicit bias (Staats, 2016, p. 29). By recognizing that implicit bias can yield inequitable outcomes even among well-intentioned individuals, a significant portion of research has explored how individuals can change their implicit associations — in effect ‘reprogramming’ their mental associations so that unconscious biases better align with explicit convictions (Staats, 2016, p. 32).

In response to educators’ unconscious biases, scholarly articles such as Moule (2009), Van den Bergh et al. (2010), Staats (2016), and Yen et al. (2018) recommend the Implicit Association Test (hereafter, referred to as IAT), which is a free and public online assessment through Project Implicit [<http://implicit.harvard.edu>] created to self-assess unconscious

associations (see also Project Implicit, n.d.). The IAT detects the strength of a person's subconscious between pairs of concepts through response latency [reaction time]; it provides a glimpse of implicit social cognition—thoughts and feelings of which the respondent may be unaware or unable to control (Staats, 2016; Nosek et al., 2007). For instance, test takers will naturally respond faster and make fewer mistakes when pairing concepts with which they associate. The IAT does not aim to label or accuse its takers of racism or explicit prejudice. While some IAT takers are defensive, skeptical, or confused by their results, others have responded with declarations of openness and non-defensiveness (Yen et al., 2018). Whether IAT takers agree or disagree with their results, the advantage of taking the test is that it triggers needed conversations about race, which are usually avoided (Bullard et al., 2020). Consequently, courageous conversations about implicit biases and race can provide educators with a moral framework to explain educational inequities and what needs to be done to obtain social justice within gifted education classrooms (Bullard et al., 2020; Singleton & Hays, 2008).

Degrees of Equity Grading Scale (DEGS)

Lastly, the implementation of the Degrees of Equity Grading Scale (DEGS) is recommended, which is a self-check tool and application framework to evaluate, plan, take action, and monitor equity within GATE programs (Bullard et al., 2022; Grantham et al., 2023; see Figures 5.1 & 5.2). The development of DEGS implements the 20% allowance formula that was inspired by Wright et al. (2017) and the conceptual framework of Expectancy – Value Theory (EVT). Bullard et al. (2022) stated that an educator's beliefs (expectancy) and judgment about their ability to complete a task successfully or unsuccessfully (e.g., increasing racial equity in gifted program enrollment) will influence their decision, persistence, and performance in completing the task (e.g., promoting equitable policies and practices) (see also Wigfield &

Eccles, 2000; Schunk et al., 2014). In other words, if educators expect to fail, they may choose not to make an effort to work toward equity or to continue participating in the work. Therefore, the methodological approach of Grantham et al. (2023) to assess equity uses a comparable formula to Gentry et al.'s (2019) representation indices but incorporates the plus and minus (+/-) academic grading system (Bullard et al., 2022). By using a widely established grading system, DEGS has more levels to measure progress and motivate educators to take action through modest stages of improvement.

“Re-forming larger problems into smaller problems allow for more controllable opportunities to make gains. This strategy of small wins addresses social problems by working directly on their construction and indirectly on the resolution” (Bullard et al., 2022, p. 14; see also Weick, 1984). In DEGS, the plus and minus letter grades also correspond to feedback, which describes the level of equity or inequity. It is important to note that for schools and/or districts within inequitable ranges, the purpose of feedback is not to offend or assume blame for lack of effort. Instead, the purpose of feedback is to guide professional conversation surrounding work toward equity such as collectively asking 1) Where are we in terms of diversity and equity? 2) How do we plan to make changes to increase or sustain diversity and equity? And 3) How would we know we've achieved or made progress toward our long or short-term goals for diversity and equity? (Bullard et al., 2022). Thus, DEGS can be utilized as evidence of accountability when evaluating equity levels with GATE programs. While it is encouraged to use this tool in assessing Black male enrollment in gifted and advanced K-12 courses; it can be used for various programs and other diverse groups of special populations.

Table 5.1*Degrees of Equity Grading Scale*

	Numerical Grade	Letter Grade	Grade Description Level
100+ = above the maximum equity level	grade >= 130	A-POE	Profoundly over the equitable level
	120 <= grade < 130	A-SOE	Severely over the equitable level
	110 <= grade < 120	A-MoOE	Moderately over the equitable level
	100 < grade < 110	A-MOE	Mildly over the equitable level
80 – 100 = within the equitable range	Grade = 100	A+	Superior equity level
	97 <= grade < 100	A+	Superior equity level
	93 <= grade < 97	A	Excellent equity level
	90 < grade < 93	A-	Good equity level
	grade = 90	A-	Equals equity level
	87 <= grade < 90	B+	Significantly above expected minimum equity level
	83 <= grade < 87	B	Moderately Above Expected Minimum Equity Level
	80 < grade < 83	B-	Slightly Above Expected Minimum Equity Level
	grade = 80	B-	Meets Expected Minimum Equity Level
	70 – 80 = below the minimum equity level	77 <= grade < 80	C+
73 <= grade < 77		C	Moderately Below Expected Minimum Equity Level
70 <= grade < 73		C-	Severely Below Expected Minimum Equity Level
<70 = inequitable	67 <= grade < 70	D+	Inequitable level
	63 <= grade < 67	D	Severely inequitable level
	60 < grade < 63	D-	Profoundly inequitable level
	grade <= 60	F	Egregiously inequitable level

Note. Grantham et al. (2023); see also Bullard et al. (2022).

Table 5.2*Outline of Equity Ranges from the Degrees of Equity Grading Scale*

	Numerical Grade	Letter Grade	Grade Description Level
100+ = above the maximum equity level	Over the equitable level		
80 – 100 = within the equitable range	Within the equitable range		
70 – 80 = below the minimum equity level	Below the equitable level		
<70 = inequitable	Inequitable		

Note. Grantham et al. (2023); see also Bullard et al. (2022).

Discussion

This article defines and promotes awareness of implicit bias that negatively impacts the learning environment of culturally diverse students, and results in a low rate of gifted education referrals for Black males and their enrollment rates in advanced K-12 courses in mathematics and science in the context of Social Learning Theory. There is a critical need for racism as well as racial and cultural differences to be addressed in educational settings, yet some educators frequently avoid courageous talks and decline participation in social change due to discomfort from the sensitive subject of race (Aveling; 2007; Moule, 2009). One reason is that “racial topics in the United States tend to be “hot button” issues that cause people of color to become vocally angry and White people to become silent, defiant, or disconnected” (Singleton & Hays, 2008, p. 22). Singleton and Hayes further explained that “although the vast majority of Americans accept this interracial disengagement, we must engage one another in courageous conversations about the racial issues we face” (p. 22). Thus, educators are urged to overcome their discomfort and tackle the matter of implicit bias to ensure the best education for *all* children and acknowledge implicit bias as a mechanism for inequitable outcomes. Pertaining to Black males, unintentional racism caused by implicit bias can emerge as low academic expectations, misinterpretation of well-intentioned behavior as disrespect resulting in higher percentages of disciplinary referrals, lack of referrals for advanced and gifted education programs, and preferential treatment towards students from middle – to upper-middle class backgrounds, and two-parent households (Bullard et al., 2022; Ford et al., 2011; Greene, 2013; Grissom & Redding, 2016; Harper & Davis III, 2012; James, 2012; Moule, 2009).

In order to self-assess biases and spark courageous conversations about race, educators are encouraged to take the Implicit Association Test (IAT). Noteworthy, IAT is prevalent in

medical training for medical students and early residents and/or fellows as they prepare to treat patients, but it is an uncommon practice in pre-service and in-service teacher training as they prepare/continue to educate students. Because our unconscious attitudes may be completely incompatible with our stated values, we must know just what those unconscious attitudes are, and they are a powerful predictor of how we may act in some spontaneous situations (Gladwell, 2005; Module, 2009). By taking the IAT, teachers may find it to be a good tool to prompt self-reflection and much-needed courageous conversations about race. Reflections and conversations would also aid teachers' understanding of how implicit biases impact Black males' opportunities and experiences within educational settings such as being referred to gifted education and advanced mathematics and science courses.

Even though addressing implicit biases is a step forward, it is also recommended to implement a self-check tool such as DEGS to assess equity on a predetermined routine basis and for accountability. Bullard et al. (2022) acknowledged that the persistent problem of underrepresentation is complex. Therefore, racial equity assessments must be fair and attempt to support GATE educational stakeholders' optimistic expectations for success while also holding them accountable to establish and manage effective and equitable recruiting and retention policies and procedures (Bullard et al., 2022; Grantham et al., n.d.; Madison et al., n.d.). The goal for utilizing DEGS while working toward educational equity is for educators to be motivated by incremental gains that lead to big wins by employing a racial equity grading system that incorporates gains in three-point increments (Bullard et al., 2022; Grantham et al., n.d.; Madison et al., n.d.; see also Weick, 1984).

In general, as implicit biases are addressed and teachers are genuinely invested in the work of equity, more teachers will be able to effectively educate Black males in a way that

adequately challenges and relates to them. In doing so, the classroom will cultivate critical thinking, reasoning, creativity, problem-solving, metacognition, teamwork, and communication skills, which properly prepare marginalized students, such as Black males, to be competitive global citizens. There is a rippling effect in providing diverse and inclusive learning environments in K-12 education; Black males are less likely to underachieve, teachers begin to notice their full potential, and thereby, increasing gifted and/or advanced education referrals for Black males.

Implications for Future Research

In addition to the recommendation for educators to take the IAT and utilize DEGS for self-checks and accountability, further research needs to be conducted to demonstrate the teachers' beliefs on the benefits of becoming an upstander-teacher and utilizing multicultural education as a means to shape an inclusive classroom and view gifted characteristics with a multidimensional lens. There is a difference between educators "who love their students" and upstander educators. While many educators operate from a foundation of love toward *all* their students, these same educators associate love with passivity and inaction; whereas upstander educators understand that love and silence are deeply contradictory (Grantham, 2011; Grantham, 2013; Pitts, 2020). Upstander educators are willing to engage in courageous conversations about race and take action in solving social issues surrounding their culturally diverse students (e.g., Black males); they recognize deficit beliefs and structures as universal — transpiring in educational settings which cause stereotype threats and racial disparities in gifted education programs.

To overcome implicit bias, teachers should not only self-reflect on their beliefs and attitude (Galman et al. 2010) and "talk" about race but also take action in creating inclusive

classrooms and providing a multicultural education (Anderson et al., 2022; Deal and Peterson, 2016; Grantham, 2011; Grantham, 2013; Stoll, 1999; Schein, 1985). It is critical to examine issues and elements of culture that shape an environment due to its power to transform an organization for better or for worst. Consequently, if provided with a strong and positive culture of upstander educators who acknowledge and address their implicit biases, Black males would be given the opportunity to excel. Black males who feel noticed and capable, begin to develop self-efficacy and positive self-identity as a minority race, and their gifted characteristics will be recognized and acknowledged so that they have a fair chance of receiving an equitable education to reach their full potential (Ford et al., 2011). Schein (1985) described culture as “the deeper level of basic assumptions and beliefs that are shared by members of an organization, that operate unconsciously, and that define in a basic ‘taken-for-granted’ fashion an organization’s view of itself and its environment” (p. 6). Simply stated, culture is what connects a particular group or organization as one unit; for this reason, the implementation of multicultural education can serve as a tool to recognize implicit bias and build an upstanding school culture.

Thus, additional research focusing on the application of multicultural education approaches, both within-school practices and out-of-school programs would prove useful in examining Black males’ identity development and teachers’ understanding and empathy toward Black males. Even more significant for Black males, is the integration of relevant content and more opportunities for kinesthetic and scientific experimental learning, as indicated by the findings of this dissertation and many other studies (Anderson et al., 2022; Collins & Jones Roberson, 2020; McDougal, 2009; NEA, 2011; Ransaw, 2016). Multicultural education is defined as an education reform movement designed to restructure schools (Banks, 2008). This allows students from all social classes, and racial, cultural, and gender groups to learn in an

environment that acknowledges their differences without bias. The James A. Banks' Model for Multicultural Education, along with other researchers, provides guidelines for reducing prejudice related to curriculum integration, while also prompting educators to better understand who their students are in hopes to be aware of implicit biases and eliminating unintentional racism towards culturally diverse students (Banks, 1994; Banks, 2008; Ford, 2011; Perry-Sheldon, 1994). As a result, schools would have more teachers actively looking for gifted characteristics with a multidimensional lens and fewer gatekeepers that limit Black males from receiving the most appropriate education to nurture their gifts and talents.

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CHAPTER 6

SUMMARY OF CHAPTER FINDINGS

A wealth of research on Black males in K-12 education has revealed that, while they are overrepresented in special education and disciplinary records, they are underrepresented in gifted and advanced educational programs as well as STEM-related fields (Collins & Jones Roberson, 2020; Davis et al., 2019; Ford & Moore, 2013; Grantham, 2011; Flowers & Banda, 2019; Wright & Ford, 2019). As a result, many Black boys perceive schools as unsupportive, discouraging, or uncaring for their overall humanity and development when their potential is not recognized, and their needs are not understood—and when their identities are criminalized and adultified (Wright & Ford, 2019). Thus, although there has been much discussion about the underrepresentation of Black males in advanced educational programs, understanding the factors that contribute to this phenomenon in educational settings is critical in minimizing or eliminating its long-term effects on their future outcomes. The history of gifted education, as discussed in chapter one, sheds light on the origins of underrepresentation among non-Asian minority students (e.g., Black students and Black males). For example, schools historically used the Stanford-Binet Intelligence Scale (1916) (i.e., IQ testing) to assess student intelligence (giftedness), which was later revised by Lewis Terman (i.e., Binet – Simon test) (Rimm et al. 2018). Terman had 1,528 subjects between the ages of 3 and 28 by 1928, but they were predominately White, urban, and middle-class, with very little representation of minority and rural students (Leslie, 2000). Torrance (1974) questioned Terman’s subjects’ racial biases by drawing attention to the very few Black/African American, Hispanic, and low socioeconomic students in Terman’s sample, asserting that such assessments are heavily biased.

Review of Literature: Underrepresentation in Gifted & Advanced STEM Education

In chapter two, a thorough literature review on the underrepresentation of Black students and Black males in gifted education and advanced (i.e., AP or Honors) mathematics and science courses revealed that biases are not limited to or isolated in assessments. Biases are also prevalent in deficit thinking and implicit or explicit stereotyping behaviors reflected in the low gifted education referrals for Black males (Elhoweris et al, 2005; Grissom & Redding, 2016; James, 2012; Pearman & McGee, 2022). Implicit and explicit biases impact long-term relationships between teachers and Black students in the classroom and serve as a mechanism for shaping teacher expectations of student achievement (Moule, 2009; Staats, 2016). Thus, biases against Black males are the result of a lack of upstanders, culturally biased curriculum, and underachievement as a byproduct of inequitable school systems that primarily represent Eurocentric views of achievement (Grantham, 2011; Ford et al., 2011; Ford & Moore, 2013; Whiting, 2006; Wright & Ford, 2019). Other related themes that emerged included income disparities, a lack of minority teachers, and inadequate teacher training on giftedness and gifted education (Bryan & Ford, 2014; Donovan & Cross, 2002; Ford, 1998; Morgan, 2020). In addition to accounting for school socioeconomic status, it was discovered that when compared to urban schools, the underrepresentation of Black Students in rural gifted education was attributed to poverty, remote or isolated locations, and limited access to resources (Davis et al., 2020a; Davis et al., 2020b; E. F. Floyd et al., 2008; Hébert, 2001; Hemmler et al., 2022).

Quantitative Findings of School-Level Factors that Influence Gifted Identification Rates

Aside from the reviewed literature, the first empirical study was motivated by recent findings indicating that more work is still needed to achieve equitable gifted education for Black males. Gentry et al. (2019) found that Black students were disproportionately represented in

Georgia schools, and while Black girls were underrepresented, Black males were less likely than Black females to be referred for gifted education (Bullard et al., 2022). In chapter three, linear regression models were used to identify Georgia school-level factors that influence the predicted gifted identification rates of Black males using data from the Georgia Department of Education Data Collection 2021-2022. The associated factors tested in this study were the following independent predictor variables: 1) school-level education (i.e., elementary, middle, and high schools), 2) total enrollment counts for Black males, 3) school socioeconomic status (Title 1 and non-Title 1), and 4) school locations divided by Georgia's physiographical regions; the dependent variable was the relative gifted identification rates of Black males.

The first statistical finding revealed that Black male gifted identification rates increased as the school levels increased to middle and high school. While this question was originally posed to investigate retention, the results could be explained by the COVID-19 outbreak. The initial gifted identification process is most often conducted in elementary schools; however, COVID-19 caused schools to close and temporarily halt gifted identification recruitment efforts. There was also a positive relationship between Black male gifted identification rates and total enrollment count, as Black males' overall school representation increased, their predicted gifted enrollment increased. However, in line with previous research that identified income disparities as causes of underrepresentation, the average percentage of Black males identified for GATE was lower in Title I schools when compared to non-Title I schools across all physiographical regions (Davis et al., 2020a; Flowers III & Banda, 2019; Morgan, 2020). When compared to other physiographical regions in Georgia, Piedmont, which consists of larger cities/populations, had the highest gifted identification rates of Black males.

The interactions between Georgia's physiographical regions and all other predictors, such as socioeconomic status, school levels, and Black males attending schools of varying physiographical regions when controlling for the total enrollment counts were also tested. The findings concluded that there were no significant interactions between 1) the effects of schools' varying physiographical regions and socioeconomic status, and 2) there was a statistically significant interaction between the effects of the school region and school levels, and a greater difference in the predicted gifted identification rates based on the for Black males in elementary schools when compared to the rates of middle and high schools located in the Piedmont region. When comparing the estimated marginal means, the predicted gifted identification rates for Black males were highest in the physiographic region of Piedmont (e.g., larger cities) and lowest in the Upper Coastal Plain (e.g., smaller towns). These findings support claims that low gifted identification rates are associated with rural schools, and that these rates are even lower for underserved students such as Black males (Davis et al., 2020a; Davis et al., 2020b; E. F. Floyd et al., 2008).

Cross-examining Quantitative Findings and Qualitative Findings of Educational Experiences that Influence Gifted Referrals & STEM Identity Development

The fourth chapter investigates the retrospective reflections of three high-achieving Black males in medicine (STEM) in order to gain a better understanding of the findings produced by a combination of chapter two (review of the literature) and chapter three (statistical data). The participants were first-generation college graduates who attended K-12 schools that were located in low to lower-middle-class communities, were not referred for or enrolled in gifted education, and (remained in) advanced courses in mathematics and science. The study's research questions focused on the participants' educational experiences ranging from their K-12 to collegiate

education, their understanding or description of a teacher's role in their educational trajectory, and key factors that contributed to their success in STEM identity development. The research questions sought to identify classroom structures and/or teaching practices that influence Black male gifted and advanced referrals and enrollment rates, as well as to aid in the development of recommendations for effective curriculum planning and teacher training. The STEM component is significant for this investigation considering the related concepts of giftedness and STEM talent (or skill), as well as existing research indicating that Black males are underrepresented in K-12 advanced mathematics and science courses, which translates to a lack of representation in STEM collegiate studies and future careers (Vu et al, 2019; Davis et al., 2019; Flowers & Banda, 2019).

According to the findings of the semi-structured interviews, restrictive classroom activities, culturally unrelated content, and a lack of social and emotional support all contribute to low gifted referrals and enrollment among Black males. Such factors, in particular, prevent Black males from exhibiting and performing at their full potential, and as a result, K-12 teachers are unable to detect, observe, and/or identify their potential gifts and talents. When the findings of chapters four and three were compared, the statistical findings of chapter three supported previous studies that suggested Black students enrolled in rural schools had lower rates of gifted identification than those enrolled in urban schools (Davis et al, 2020a; Davis et al., 2020b; E. F. Floyd et al., 2008). On the other hand, in chapter four, the participants were from urban (suburban) neighborhoods and spoke candidly about the need for more opportunities for student-led and kinesthetic learning.

The qualitative findings add to other studies that argue that, while students at urban schools are becoming more diverse and have more resources than rural schools, the diverse

make-up of the urban student population does not match that of teachers (Ford et al., 2008a; Ford et al., 2008b; NCES, 2022). This highlights the critical need for adequate multicultural education training for teachers, which includes not only concepts of race and ethnicity but also gender. Another major finding was that, collectively, many of the participants' teachers made them feel "labeled, uncared for, and a lack of support," which also may explain the academic underachievement of Black males (Ford & Moore, 2013) and why the predicted gifted enrollment rates among Black males only increased slightly as their total enrollment counts increased in chapter three. Despite underachieving in K-12, the participants attributed their STEM identity development to vicarious experiences (i.e., in-person interactions/exposure and bibliotherapy) and collegiate experiences that allowed for more kinesthetic, student-led learning, peer collaboration, and diverse and inclusive settings.

Recommendations for Educational Practitioners

Drawing from the implications of chapters three and four, recommendations to an audience of educational stakeholders such as teachers, administrators, and policymakers were made in chapter five. The practitioner recommendations are heavily influenced by statistical findings that suggest Black males are underrepresented in Georgia's gifted education programs, and even more so in Title 1 schools, which may imply low expectations for Black males and those with income disparities, among other factors. Not to mention, the qualitative data revealed preconceptions about Black male academic abilities as well as a lack of social and emotional support in the classroom. Researchers suggest that teacher discretion in the gifted assignment process is a significant factor in educational inequities, and the most common barrier to equitable programs is deficit beliefs in the gifted potential of minority students (Frasier, 1997; Gershenson et al., 2016; Grissom & Redding, 2016; van den Bergh et al., 2010). Researchers also argue that

the persistent trend of Black male underrepresentation in advanced STEM courses is due to gatekeepers in educational leadership roles who develop and implement policies, programs, and standardized tests (Davis et al., 2019). Gatekeepers create spaces for the majority race (e.g., White peers and teachers), leaving Black males vulnerable to stereotype threats in honors and/or AP math and science courses (Flowers and Banda, 2019), — especially when the learning environment fails to support cultural diversity (Ford et al., 2008b).

Chapter five recommends implementing the Implicit Association Test (IAT) with the goal to address some of the root causes of underrepresentation, such as implicit biases and a lack of inclusivity. The IAT was designed to assess unconscious associations in order to raise awareness of implicit biases, rather than to label or accuse test takers of racism or explicit bias (Denessen et al., 2022; Yen et al., 2018). IAT is recommended to encourage courageous conversations regarding race in educational settings, which are all too often avoided due to discomfort (Aveling, 2007; Singleton & Hays, 2008; Staats, 2016). However, concern for educators' discomfort must not overshadow the need to prepare a predominantly White middle-class, female teaching force to work effectively with diverse student populations (Bullard et al., 2021; Galman et al., 2010; Warren, 2013). Utilizing the Degrees of Equity Grading Scale (DEGS) is also recommended; this is a self-check tool and application framework to evaluate, plan, take action, and monitor equity within GATE and other advanced programs (Grantham et al., 2023; Bullard et al., 2022).

Underrepresentation of Black males in advanced education programs can jeopardize their identity development (i.e., scholar/STEM) because it sends the message that they lack the necessary skills to thrive in rigorous academic settings and evolve into future contributors to society (Flowers and Banda, 2019; see also Collins & Jones Roberson, 2020; Winsler et al.,

2013). Hence, the primary objectives of implementing IAT and DEGS are to create an upstander school culture of teachers who develop positive relationships with Black males and integrate socially and culturally relevant content with opportunities for kinesthetic and scientific experimental learning (Anderson & Coleman-King, 2021; Anderson et al., 2022; Collins & Jones Roberson, 2020; Grantham, 2013; Ransaw, 2016). The desired outcome is for Black males to achieve their full potential rather than underachieve, increasing their equitable representation in gifted and advanced programs. While this study focuses on Black males and their unique challenges, the implications are also applicable to other underserved groups.

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