

## BOOK REVIEW

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### **And Then There Was Light: A Book Review of *The Brilliance of Black Children in Mathematics: Beyond the Numbers and Toward New Discourse*<sup>1</sup>**

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I had the privilege of studying science and mathematics with three mathematically *brilliant* Black men. We had diverse life experiences—different socioeconomic statuses, different family dynamics, and different schooling experiences. Nonetheless, we had the necessary standardized test scores to be admitted to college, where we chose to study mathematics. We began our journey with a promising start in Calculus II, a class of few freshmen. As first-year college students, our advanced placement provided us the rare opportunity to tutor seniors taking college algebra, pre-calculus, and calculus courses. We continued to excel throughout our college matriculation. When we were not tutoring our classmates or leading calculus recitations, we were mentoring young children at Title I schools in the neighborhood. The four of us graduated at the top of our department and went on to pursue graduate studies in science, technology, engineering, and mathematics (STEM) disciplines. Indeed, one of us holds a terminal degree in aerospace engineering from a prestigious Catholic university in the Midwest. The other two also hold advanced degrees in aerospace engineering, with one working for “big oil” in the Southwest and the other in the Northeast for the United States government. I hold an advanced degree in mathematics and am currently pursuing a Ph.D. in mathematics education at Georgia State University.

Although our paths diverged after our undergraduate experience, *brilliance* continues to unite us. There are several definitions of brilliance, one being the

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ability to exude great brightness or light. I am partial to this definition because I believe it most fitting that the universe brought the four of us together to study mathematics at the nation's premiere school for educating Black men—a school whose motto is *et facta est lux* (roughly translated as “and there was light”). I chose to include this narrative, because, like Leonard and Martin (2013), I wanted to begin the discussion of the mathematics achievement of Black students with *brilliance*.

*The Brilliance of Black Children in Mathematics: Beyond the Numbers and Toward New Discourse* (or *Brilliance*) is a much-needed compilation of manuscripts that does just what the book's subtitle states—it moves beyond the numbers and toward new discourse. When the subject of mathematical achievement of African American children arises, it is often accompanied by phrases such as “The statistics show that Black students perform significantly lower than White and Asian students on our nation's standardized tests.” This book challenges the deficit perspective of the so-called Black-White achievement gap, examines why such a gap exists, and suggests new and innovative ways that educators can help (Black) children manifest their often obstructed brilliance in mathematics.

*Brilliance* is presented in five sections—Cultural-Historical Perspectives, Policy and Black Children's Mathematics Education, Learning and Learning Environments, Student Identity and Student Success, and Preparing Teachers to Embrace the Brilliance of Black Children. Rather than summarizing each of these sections, I provide an analysis of a few themes that resonated with me in my reading.

### Exemplars of Brilliance

*Brilliance* begins with a thorough and informative history of the mathematically brilliant African American, Benjamin Banneker. The story of Banneker, whom history credits with helping to build our nation's capital and publishing a series of almanacs (among many other contributions to science, mathematics, and society more broadly), immediately serves to debunk the myth that mathematics is a White and male domain (Stinson, 2013). The reader learns the rich history of brilliant African American mathematicians (in addition to Banneker) like David Blackwell and Euphemia Haynes, as these often unrecognized scholars are placed at the forefront and provided their rightful place alongside the likes of Dedekind, Erdős, and other mathematicians we read about in Western mathematics texts. Their contributions to the field of mathematics permanently dispose of Thomas Jefferson's (1781) assertion that Blacks are “in reason, inferior as they could scarcely be found capable of tracing and comprehending the investigations of Euclid...and that in imagination, they are dull, tasteless, and anomalous” (p. 232).

*Brilliance* also delivers powerful counter-narratives of mathematically successful African Americans. It provides the reader insight as to how mathematically successful African Americans might negotiate Du Bois's (1903/1996) double-consciousness or "sense of always looking at one's self through the eyes of others" (p. 5) while learning mathematics and developing healthy mathematics identities. The volume explores racial identity and the role race and racism plays in African American students' mathematics success. Many of these students feel the burden to prove themselves academically in classrooms where they are often the only African American student in a sea of White, Asian, and Indian students. Additionally, these mathematically successful African American students recall influential teachers that developed caring relationships with them and worked aggressively to challenge the "Whites-only" face of mathematics.

Finally, the reader learns about the schooling and racialization experiences of the mathematically brilliant Mrs. Gant—an 83 year-old wife, mother, grandmother, great-grandmother, and "self-proclaimed math person" (Gholson, 2013, p. 53). Mrs. Gant comes from a large family of high school-educated siblings and parents who valued education. Mrs. Gant recalls how mathematics, particularly algebra, was her favorite subject in school and how her teachers recognized her brilliance. Indeed, she is so brilliant that her classmates often copied her work, thereby forcing her teachers to provide her with an exemption from assessments in an effort to prevent her classmates from cheating. But perhaps the most captivating part of Mrs. Gant's story is that she unequivocally rejects the notion of the racial achievement gap between Black students and their White counterparts. In her words, "I don't believe it. ...Now it's true it [*sic*] might be a lot of Black students who don't figure good, but then I would say there are a lot [of] Black students who do" (Gholson, 2013, p. 70). This grandmother, these African American mathematicians, and these mathematically successful African students defy the numbers and serve as a testament to the mathematical brilliance of the Black child.

### **A Historical Practice of Policy and Curricula that Exclude**

Early in the book, the contributing authors frame the discussion of brilliance by beginning with an intensive history and critical review of K–12 mathematics education in the United States (Berry, Pinter, & McClain, 2013). With the USSR's launch of *Sputnik* in the 1950s, the United States began to reform mathematics curricula based on fears that U.S. children lacked the necessary mathematical skills to compete with the Russians, thus threatening the nation's future security. With the help of university mathematicians, the United States went from a mathematics curriculum that focused on minimum elementary-level competencies meant to prepare students for everyday work requirements to more rigorous

mathematics competencies such as abstract algebra, topology, and set theory—a curriculum that the writers call “New Math.” The problem was that Black students neither had access to this new mathematics curriculum nor the new pedagogical techniques that came along with it. The millions of the dollars the government spent to identify the best and brightest young minds were, in effect, reserved for the best and brightest young *White* minds.

In the face of such exclusion, mathematics teachers in segregated Southern schools taught with demodded, hand-me-down textbooks from the White schools. In spite of these obstacles, they exhibited high-quality teaching and demanded greatness from their students. These segregated Black schools offered advanced mathematics classes and required students to complete Algebra I before they could graduate, further supporting the claim that these teachers and schools had high expectations of their students. Some of these teachers, seeing the mathematical brilliance of their students, taught them mathematics that went beyond geometry and algebra, such as calculus. However, when school officials discovered that Black schools were teaching mathematics content that the White schools were not, they quickly stopped the practice and eliminated such course offerings.

In many Southern schools, integration resulted in Black students often being placed into “low-level” classes that did not prepare them for post-secondary education. In the segregated schools, these same students would have been enrolled in rigorous, more advanced mathematics courses. There, they would have had teachers who set high academic standards and realized their brilliance. Berry and colleagues (2013) argue that this policy of exclusivity has had long-lasting negative effects on Black students as evidenced by the racial composition of mathematics courses we see in U.S. classrooms today. In fact, I can recall being one of only a handful of Black students in my advanced Trig-Analytics course and the only Black student in my high school advanced placement (AP) Calculus course. When educators find themselves consumed with achievement-gap rhetoric, I urge them to reject this deficit perspective and consider the history of mathematics education in this country that has long excluded the Black child.

### **To Embrace Her/His Culture is to Embrace Her/His Brilliance**

As I read *Brilliance*, it became apparent that there are many ways we, as mathematics teacher educators, can begin preparing teachers to recognize the brilliance of Black children, but the most commonly discussed approaches in this book involve a reform of mathematics policy, curriculum, and assessment (see e.g., Matthews, Jones, & Parker, 2013; Tawfeeq & Yu, 2013; Chahine, 2013). Matthews and colleagues (2013) suggest beginning with culturally relevant and specific pedagogy and cognitively demanding mathematical tasks that have meaning in the lives of our (Black) students. Admittedly, I had mixed feelings about

these ideas. I thought to myself, “What *is* culturally relevant pedagogy? Are the authors suggesting that I teach the quadratic formula behind the backdrop of the latest 2 Chainz song? If so, this approach deeply offends my sensibilities.” Moreover, I thought “Are the authors reifying the idea that plagues so many of my students that just because I don’t find something useful right now, it’s not worth knowing?”

In an effort to better understand the authors’ point, I was compelled to read a book my doctoral advisor gave me entitled *The Dreamkeepers: Successful Teachers of African American Children* written by Gloria Ladson-Billings (2009). In her words, “The primary aim of culturally relevant teaching is to assist in the development of a ‘relevant black personality’ that allows [Black] students to choose academic excellence yet still identify with African and African American culture” (p. 20). She goes on to give an example of how a teacher might incorporate culturally relevant pedagogy:

For example, let us examine how a fifth-grade teacher might use a culturally relevant style in a lesson about the U.S. Constitution. She might begin with a discussion of the bylaws and articles of incorporation that were used to organize a local church or African American civic association. Thus the students learn the significance of such documents in forming institutions and shaping ideals while they also learn that their own people are institution-builders. (p. 20)

After reading this excerpt, culturally relevant teaching became clearer to me. When reading *Brilliance* the reader will learn about the preparations of practicing teachers and how they, in an effort to become culturally relevant pedagogues, use a framework for culturally relevant, cognitively demanding mathematics tasks to “re-engineer” (Matthews, Jones, & Parker, 2013) their mathematics classroom content and make mathematics meaningful for their students. The text also highlights the innovative Algebra Project curriculum that was implemented with a cohort of high school students in Miami as they learned how to add and subtract integers (Eraso, 2013). The contributing authors of *Brilliance* suggest mathematics simply cannot be taught in a meaningful and effective way if it is not related to the student’s culture. When educators and policy makers modify their teaching practices, policies, and curricula to include culture, the brilliance of the Black child, which we know is there, will begin to manifest itself.

### Suggestions for Future Work

*Brilliance* focuses heavily on K–12 students, educators, curriculum, and policy. We read about the elementary schooling experiences of a grandmother (Gholson, 2013), receive a thorough history of K–12 mathematics education in the United States (Berry et al., 2013), and learn about school curricula that have

historically excluded the life experiences and culture of the Black child (Berry et al., 2013). As an African American college mathematics instructor and program coordinator for developmental education, I would have liked for the discussions to include the mathematics experiences of college students and the history of the post-secondary culture that often neglects the brilliance of Black college freshmen. Many first-year college students place in remedial studies courses because of poor performance on standardized placement tests, and these students are overwhelmingly Black and Hispanic (Bonham, 2012). How do these students navigate knowing that their respective colleges label them as mathematically deficient? Furthermore, how do these students navigate a classroom space where they are simply a number—just one out of a room of 100 students, for example, in a lecture hall where there are few culturally responsive pedagogues on deck (Jett, 2012)? It is my hope that critical mathematics education researchers who are interested in race and equity issues address some of these questions in their future work.

### Final Thoughts and Conclusion

In his collection of essays entitled *The Souls of Black Folk*, William Edgar Burghardt Du Bois (1903/1996) opens with the statement, “Between me and the other world, there is ever an unasked question...How does it feel to be a problem? I answer seldom a word” (p. 3). I now wonder how many of my teachers perceived me—a poor kid from one of the many “broken homes” on the south side of Sumter, South Carolina attending the newly built elementary school—as a problem; after all, I always felt like a problem. I had trouble focusing when it came time to take standardized tests. I could sense their frustration and disgust when I did not grasp the concepts taught in class well enough to complete my homework or when I scored poorly on end-of-unit assessments. I recall when my fifth grade teacher denied me the opportunity to play during recess after I, in his words, “blew off” his test. He never inquired about how I prepared for tests at home or what other factors may have contributed to my low performance. He did not even spend the forgone recess time reviewing with me what I had missed on the test. To him, I was just a problem.

It was not until I entered middle school and experienced my first African American mathematics teacher that I realized my mathematical brilliance. This teacher, unlike many of my elementary school teachers, developed a caring relationship with me that reached beyond the classroom. She “set high expectations for academic success and disrupted school mathematics as a White institutional space” (Stinson, Jett, & Williams, 2013, p. 227). To her, I was hardly a problem. I was a diamond in the rough but a diamond sure enough.

*The Brilliance of Black Children in Mathematics: Beyond the Numbers and Toward New Discourse* is a powerful, eye-opening read that resonates with me because it offers a new and refreshing discourse about Black children and their mathematics achievement. Instead of focusing on the perceived achievement gap between Black children and their White counterparts or viewing Black children as problems in need of “fixing” (Stinson et. al, 2013), this compilation begins with the brilliance of the Black child. I found the section on student identity and student success particularly inspiring as I read the narratives of mathematically successful Black students, many of whom earned degrees in STEM disciplines. In reading about how these students developed healthy mathematics identities while learning to negotiate “what it means to ‘be African American’ in the context of doing mathematics” (McGee, 2013, p. 250), I could not help but think about my classmate, Peter,<sup>2</sup> with whom I recently reconnected at my high school reunion. Peter was placed in the low-achieving, technical preparatory track in high school. An administrator told him that he was not four-year college material and that he should consider going directly into the workforce upon graduation. But our guidance counselor, a Black woman who happened to complete her undergraduate education at a historically Black college, realized that Peter was capable of more than settling for a minimum-wage job at the local factory. She realized his brilliance and encouraged him to apply to college. Today, Peter holds the Bachelor of Science degree in mathematics—a feat our discouraging administrator surely never dreamed Peter brilliant enough to accomplish.

I invite parents, especially those of the Black children enrolled in special education or lower tracks, to read this book and use it as a tool as they question their children’s teachers and administrators and inquire why their children are not being equally counseled into gifted and talented programs. Additionally, I invite *all* educators and administrators to read *Brilliance* to see that African Americans have always been achievers in mathematics and to share that legacy of achievement with their students. They will see that mathematics is in our blood, as it was in the blood of our ancestors (e.g. Banneker, Blackwell, Fuller, Henson, etc.) (Leonard & Beverly, 2013) and that African Americans “have the inborn capacity to accomplish just as much as any nation of twelve million anywhere in the world ever accomplished” (Du Bois, 1935, p. 333).

### References

- Berry, R. Q., III, Pinter, H. H., & McClain, O. L. (2013). A critical review of American K–12 mathematics education, 1900–present: Implications for the experiences and achievement of Black children. In J. Leonard, & D. B. Martin (Eds.), *The brilliance of Black children in mathematics: Beyond the numbers and toward new discourse* (pp. 247–272). Charlotte, NC: Information Age.

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<sup>2</sup> The name Peter is a pseudonym used to protect my classmate’s anonymity.

- Bonham, B. R. (2012). Developmental mathematics: Challenges, promising practices, and recent initiatives. *Journal Of Developmental Education*, 36(2), 14–21.
- Chahine, I. (2013). Ethnomathematics in the classroom: Unearthing the mathematical practices of African cultures. In J. Leonard, & D. Martin (Eds.), *The brilliance of Black children in mathematics: Beyond the numbers and toward new discourse* (pp. 195–218). Charlotte, NC: Information Age.
- Du Bois, W. E. B. (1935). Does the Negro need separate schools? *Journal of Negro Education*, 4(3), 328–335.
- Du Bois, W. E. B. (1996). *The souls of Black folk* (Penguin classics ed.). New York, NY: Penguin. (Original work published 1903)
- Eraso, M. (2013). Adolescents learn addition and subtraction of integers using the algebra project's curriculum process. In J. Leonard, & D. Martin (Eds.), *The brilliance of Black children in mathematics: Beyond the numbers and toward new discourse* (pp. 151–169). Charlotte, NC: Information Age.
- Gholson, M. (2013). The mathematical lives of Black children: A sociocultural-historical rendering of Black brilliance. In J. Leonard, & D. B. Martin (Eds.), *The brilliance of Black children in mathematics: Beyond the numbers and toward new discourse* (pp. 55–76). Charlotte, NC: Information Age.
- Jefferson, T. (1781). *Notes on the state of Virginia, Query XVI*. Retrieved from [http://www.pbs.org/jefferson/archives/documents/frame\\_ih198154.htm](http://www.pbs.org/jefferson/archives/documents/frame_ih198154.htm)
- Jett, C. C. (2012). Let's produce culturally responsive pedagogues on deck. *Democracy & Education*, 20(2), 1–5.
- Ladson-Billings, G. (2009). *The dreamkeepers: Successful teachers of African American children*. San Francisco, CA: Jossey-Bass.
- Leonard, J., & Beverly, C. L. (2013). The history, brilliance, and legacy of Benjamin Banneker revisited. In J. Leonard, & D. B. Martin (Eds.), *The brilliance of Black children in mathematics: Beyond the numbers and toward new discourse* (pp. 3–21). Charlotte, NC: Information Age.
- Leonard, J., & Martin, D. B. (Eds.). (2013). *The brilliance of black children in mathematics: Beyond the numbers and toward new discourse*. Charlotte, NC: Information Age.
- Matthews, L. E., Jones, S. M., & Parker, Y. A. (2013). Advancing a framework for culturally relevant, cognitively demanding mathematics tasks. In J. Leonard, & D. B. Martin (Eds.), *The brilliance of Black children in mathematics: Beyond the numbers and toward new discourse* (pp. 123–150). Charlotte, NC: Information Age.
- McGee, E. O. (2013). Growing up black and brilliant: Narratives of two mathematically high-achieving college students. In J. Leonard, & D. B. Martin (Eds.), *The brilliance of Black children in mathematics: Beyond the numbers and toward new discourse* (pp. 247–272). Charlotte, NC: Information Age.
- Stinson, D. W. (2013). Negotiating the “white male math myth”: African American male students and success in school mathematics. *Journal for Research in Mathematics Education* 44(1), 69–99.
- Stinson, D. W., Jett, C. C., & Williams, B. A. (2013). Counterstories from mathematically successful African American male students: Implications for mathematics teachers and teacher educators. In J. Leonard, & D. B. Martin (Eds.), *The brilliance of Black children in mathematics: Beyond the numbers and toward new discourse* (pp. 221–245). Charlotte, NC: Information Age.
- Tawfeeq, D. A., & Yu, P. W. (2013). Methods of studying Black students' mathematical achievement. In J. Leonard, & D. B. Martin (Eds.), *The brilliance of black children in mathematics: Beyond the numbers and toward new discourse* (pp. 79-94). Charlotte, NC: Information Age.