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Beyond the Numbers: A Benjamin Banneker Association Conference Series

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When asked to think of a mathematician, who comes to mind? René Descartes (1596–1650, French)? Isaac Newton (1642–1727, English)? Or is it Carl Gauss (1777–1885, German)? When thinking about a mathematician, Westerners rarely think of anyone other than a White man of European origin—and even more rare, a woman of any cultural heritage. In fact, most Westerners are unfamiliar of Benjamin Banneker's name, much less his legacy as a mathematician. Societal discourses in too many ways continue to position mathematics as a discipline primarily reserved for elite White men. Children and youth, and people of all ages, internalize these discourses and, in turn, continue to imagine the mathematician as a White, middle-aged, balding or wild-haired man (Picker & Berry, 2000). The Einstein-ish silhouette readily comes to mind. Even when popular media attempts to diversify images of the mathematician and make mathematics "cool," the image of the White, wild-haired man is more times than not reified: recall the CBS network crime series *NUMB3RS*. In short, the "White male math myth" (Stinson, 2010, p. 3) and its apparent permanence continues to frame people's perceptions of mathematics participation and achievement and, in turn, assists in constituting the mathematics (education) enterprise all together as a "White institutional space" (Martin, 2010, p. 65).

The negative consequences of this whiteness of mathematics continue to be played out inside apartheid (re)segregated and "integrated" schools and class-

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rooms across the nation (Kozol, 2005). For example, beginning as early as first grade, students are frequently tracked into either high- or low-level mathematics courses based on standardized test scores and teachers' perceptions of the mathematical abilities of "other people's children" (Delpit, 1995). In too many classrooms, Black and Brown (and female) children pick up their belongings and march off to another teacher's classroom for "low-level" mathematics instruction (Oakes, Ormseth, Bell, & Camp, 1990; Stinson, 2004). The rationale for this shuffling and sorting of children between high- and low-level courses is that it is easier for teachers to address students' needs. But in racially integrated schools the hue of students in the low-level courses is usually Black and/or Brown. In other words, White students are rarely found in the low-level courses; likewise, Black and Brown students are rarely found in the high-level courses. Even nearly 60 years after the *Brown v. Board of Education* decision, too many Black students have had neither equitable access to nor learning opportunities for the study of advanced mathematics (Leonard, Napp, & Adeleke, 2009; Moses & Cobb, 2001; Spencer, 2009; Tate, 1995). Therefore, the driving force behind the *Beyond the Numbers* conference series was to push against the negative consequences of the whiteness of mathematics, moving beyond the numbers of aggregated "achievement gap" data and toward new discourses about Black children and mathematics.

The Conference Series

The Benjamin Banneker Association (BBA) *Beyond the Numbers* conference series—June 2010 Philadelphia and November 2011 Atlanta—was hosted by Temple University and Arcadia University (Philadelphia) and Georgia State University (Atlanta), and sponsored and generously funded by the National Science Foundation.[1] The year 2011 marked the 25th anniversary of BBA as an activist organization that advocates for high-quality instruction and "levels of excellence" (Hilliard, 2003, p. 138) in mathematics for Black children in pre-K–16 school settings.[2] As part of its advocacy work, yearly, BBA recognizes exemplary work among teachers of Black children and honors the outstanding work of Black students at its annual meeting held during the National Council of Teachers of Mathematics (NCTM) annual meeting and exposition. Benjamin Banneker Association

[1] National Science Foundation DR-K12 Grant – *Mathematics Attainment and African American Students: Discourse from Multiple Perspectives* (Award # 0907896 and 0910672). The conference series also included a leadership summit held at the University of Colorado Denver in October 2010; the purpose of the summit was to debrief the June 2010 Philadelphia conference and to plan the November 2011 Atlanta conference. Texas Instruments and ETA Cuisenaire provided additional nominal financial support.

[2] The founding members of BBA were Benjamin Dudley, Edgar Edwards Jr., William Greer, Harriett Haynes, Marie Jernigan, Genevieve Knight, and Dorothy Strong.

also has held stand-alone conferences that focus on educational issues specifically related to the mathematics education of Black children and youth. Prior to the *Beyond the Numbers* conference series, BBA had sponsored four other stand-alone conferences.

Previous Conferences

Dr. Carol Malloy, the BBA President from 1997–1999, organized the first stand-alone conference in Easton, Maryland in August 1996; this conference resulted in the NCTM publication *Challenges in the Mathematics Education of African American Children: Proceedings of the Benjamin Banneker Association Leadership Conference* (Malloy & Brader-Araje, 1998). Dr. Anthony Scott, the BBA President from 2003–2005, organized the second stand-alone BBA conference in Philadelphia, Pennsylvania in April 2004; this conference was held in conjunction with the NCTM annual meeting and exposition and co-sponsored by Temple University. And Dr. Lou Matthews, the BBA President from 2007–2009, organized two stand-alone conferences: The *National leadership Summit on the Mathematics Education of Black Children: An Agenda for Impact 07*, held at and co-sponsored by Georgia State University in Atlanta, Georgia, November 2007; and *Teaching, Learning, and Research of African Students: Unlocking the Doors of Excellence*, held in Little Rock, Arkansas, November 2008. The *Beyond the Numbers* conference series built upon the successes of previous conferences and established a precedent for BBA in sponsoring stand-alone conferences dedicated to the teaching and learning of Black students every two years or so. Such specifically focused conferences are needed to draw attention to the ever-changing critical issues surrounding mathematics access and opportunity for Black children and youth.

Rationale, Goal, and Objectives

The rationale for the conference series in general was based on research regarding the racial identity and educational attainment of Black children and youth. Data suggest that beliefs about self and race relate to Black youths' educational and social development through their attitudes and self-evaluations around education (e.g., the stronger racial pride, the stronger attachment to academics) (Chavous et al., 2003). Additionally, research has shown that providing all children and youth with opportunities to learn rigorous mathematics is *the* crucial element in diversifying the pool of human talent in STEM (science, technology, engineering, and mathematics) undergraduate and graduate degree programs and in STEM-related professions (Tyson, Lee, Borman, & Hanson, 2007). Despite these findings, a recent study of high school dropouts participating in the federal Job Corps program (comprised mostly of Black and Latina/o youth) identified difficulties

and disaffection with mathematics as the primary reason for dropping out (Viadero, 2005). Moreover, although Black (and Hispanic) youth enter college with the same level of interest in STEM fields as their White and Asian peers, they often fail to persist in STEM majors at the same rate (Anderson & Kim, 2006). Therefore, the major goal of the conference series was to bring district- and school-level administrators and classroom teachers as well as teacher educators and researchers in educational policy, psychology, sociology, and mathematics, science, and urban education together to discuss both the challenges and opportunities for Black students in mathematics. Coupled with this goal was an overarching activist agenda: to move discussions about Black children and mathematics away from discourses of deficiency or rejection and toward discourses of achievement[3] (Stinson, 2006).

For over a decade now, research documenting the success stories of Black students' mathematics achievement has been available in the mathematics education literature (e.g., Berry, 2008; Jett, 2010; Martin, 2000; McGee & Martin, 2011; Moody, 2000; Nzuki, 2010; Stinson, 2010; and Walker, 2006). This research serves as an impetus for district- and school-level administrators and classroom teachers to depart from familiar deficit discourses about Black students and mathematics and to embrace different discourses for participation and achievement and teaching and learning. For instance, culturally relevant and critical pedagogies, which effectively use the cultural, social, and intellectual capital that Black students bring to the classroom, show promise in increasing both mathematics participation and achievement for Black (and Brown) students (Gutstein, 2006; Leonard, 2008). But improving outcomes in mathematics for Black children and youth requires district- and school-level administrators and classroom teachers (and education stakeholders in general) to critically examine current instructional practices (and polices), to build Black students' mathematics competency from the early grades to middle school, and to offer supports and incentives for rigorous mathematics in high school and college.

With an aim of improving Black students' participation and achievement in mind, the specific objectives for the conference series were to bridge research and practice, to identify best practices for teaching mathematics to Black children and youth, to strengthen the preparation of "highly qualified" urban mathematics teachers, and to expand the research agendas of seasoned and developing researchers in mathematics education. A secondary component for the series (but of equal value), and similar to the previous BBA conferences, was to continue to develop a critical mass of district- and school-level administrators, classroom teachers, teacher educators, and education researchers who focus on issues of equity

[3] Here, the concept of "achievement" or "brilliance" is not restricted to high test scores or exceptional grades; many students achieve neither but are, nevertheless, highly intelligent and capable (Leonard & Martin, in press).

and race in mathematics, while refusing to participate in the all too common "'gap-gazing' fetish" (Gutiérrez, 2008, p. 357).

This secondary component is clearly evident in the titles of and questions explored at each conference. The title of the June 2010 Philadelphia conference was *Beyond the Numbers: Celebrating the Best of How Teachers Teach and African American Students Learn Mathematics*, and the title of the November 2011 Atlanta Conference was *Beyond the Numbers: The Brilliance of Black Children in Mathematics*. Both conferences addressed four interrelated questions:

1. In what ways do school structures and institutional policies (i.e., lack of certified mathematics teachers, low student expectations, disproportionate discipline policies, tracking policies, etc.) impact Black students' "success" in school and in mathematics?

2. (Philadelphia) In what ways can technological tools and other forms of multimedia be used to motivate and encourage Black students to learn rigorous mathematics and persist in their mathematics education?

   (Atlanta) In what ways do highly qualified mathematics teachers understand issues of race and equity, and how might teacher education programs develop highly qualified mathematics teachers for urban schools?

3. What is the nexus of race and identity for Black students in the Deep South and other spaces where Black students are the majority (e.g., Washington, DC; Baltimore, Maryland; Milwaukee, Wisconsin; and Chicago, Illinois), and how does racial identity and individual agency impact their mathematics attainment?

4. What are the best practices that facilitate learning and mathematical empowerment among Black students, and how might culturally relevant and social justice pedagogies assist in developing academic success, cultural competence, and critical consciousness among Black students?

Structure and Evaluation[4]

Both conferences had 15 to 20 invited speakers who addressed topics relevant to the four questions noted above (for details of speakers and topics see Conference Programs: Philadelphia and Atlanta).[5] Professor Gloria Ladson-Billings (Past President of the American Educational Research Association) was the keynote speaker for the 2010 Philadelphia conference, and Professor Joyce King was the keynote speaker for the 2011 Atlanta conference. In addition, presidents and past presidents of both NCTM (Henry Kepner [Philadelphia] and Linda Gojak

[4] Data from this section were pulled from the two evaluation reports prepared by Dr. Sukey Blanc of Creative Research and Evaluation Services; copies of both reports are available upon request.

[5] EDITORS' NOTE: All invited speakers, including the keynote speakers, were invited to contribute to this *JUME* special issue.

[Atlanta]) and BBA (Jacqueline Leonard [Philadelphia] and Cheryl Adeyemi [Atlanta]) were featured speakers. Both conferences had similar structures: during each day of the 2-day conferences, attendees participated in two back-to-back, 1-hour research symposia, followed by four to six, 1-hour concurrent breakout sessions. Each symposium included three to four speakers presenting research papers organized around a specific theme (e.g., "Cognitive Approaches to Learning Mathematics" and "Black Children and Mathematics Success"). The concurrent breakout sessions, facilitated by symposium speakers, provided conference attendees with an opportunity to discuss in small groups the research presented during the symposia with other attendees and the speaker in-depth. In addition to the small-group breakout sessions, both conferences presented attendees with several opportunities for networking; breakfast, lunch, dinner, and a networking reception were provided for conference attendees. These activities provided attendees with additional opportunities to build interdisciplinary relationships between and within school districts and universities and to plan future projects that might lead to the formulation of new questions for both research and practice.

Data for the evaluation of both conferences included evaluator observations made during each 2-day conference, informal conversations with attendees and conference planners, attendee surveys, and a small number of follow-up interviews with attendees from the Atlanta conference. There were approximately 80 people in attendance at each conference, including conference planners, volunteers, and speakers. And at each conference, approximately 50 surveys were completed. Data analyses from both conferences indicate that the conference series was overwhelmingly successful in providing new theoretical perspectives and practical applications for research and practice, helpful information about untapped resources and technology, and interdisciplinary learning and networking opportunities for future projects. In addition to being a stimulating opportunity for learning and networking, an overwhelming majority of attendees reported that they plan to utilize ideas from the conference series in their research and practice. Below is a small sampling of open-ended survey responses from the Atlanta conference:

> Incorporating CRP [culturally relevant pedagogy] as a model for my teacher candidates to help them understand how to teach for social justice…[the] theoretical frameworks, personal narratives regarding the relevance of these dialogues, conceptualizing dispositions [were all useful].
>
> This is all relevant because I work with pre-service teachers.
>
> I learned about activities to anchor math in students' lives in open-ended ways where the students determine what is relevant.

> [The speakers] really helped us (through discussions) to rethink the language that we use when speaking of the excellence of young children mathematically.
>
> The speakers reaffirmed the importance/role culture plays in a student's identity and thus academic achievement.

Highlights of Keynote Speakers

As previously noted, the keynote speaker for the Philadelphia conference was Dr. Gloria Ladson-Billings, Professor of Curriculum and Instruction and Educational Policy Studies and Keller Family Chair in Urban Education at the University of Wisconsin – Madison. The title of Dr. Ladson-Billings' (2010) address was *The Meaning of CULTURE in Mathematics Education*. She began with a statement by Cornel Pewewardy, the Indigenous American (Comanche and Kiowa) educator, which went something like: "We don't need to put culture into education. What we need is to put education in our culture." Before educational structures and systems were put into place, culture was there and remains a salient part of our everyday lives. In essence, "there is no activity that is not situated" in a cultural context (Lave & Wenger, 1991, p. 33).

Hollins (1996) defined culture in three parts. First, culture includes artifacts and behavior: artifacts refer to visual and performing arts and culinary practices while behavior refers to social interaction patterns, ceremonies, rituals, and dress. Second, culture is the social and political relations and points of view that are shared by people bound together by history. Third, culture is affective behavior and intellect. Thus, culture guides the reasoning, emotions, and actions of a particular group of people. Each part of this definition implies that culture is part of the socialization process where cultural knowledge is passed down by elders or significant others. Ladson-Billings used the word *CULTURE* as a mnemonic during her address to focus on specific components that are necessary to improve mathematics participation and achievement for all children:

- C = Contexts
- U = Uses
- L = Language
- T = Teaching
- U = Understanding
- R = Relationships
- E = Expectations

The **contexts** in which students live imbue culture. Culture is their home and community, and school culture (Banks, 1993). When it comes to learning mathematics, it is important that teachers link these two cultures together to help students cross borders from their home and community culture to school culture

(Leonard, 2008). Mathematics is **used** in many different types of contexts. From bartering and trading with different monetary systems to using mathematics for social justice and empowerment, mathematics is a tool that can be used to understand and relate to the world and interact with people of all cultures. **Language**, which Ladson-Billings distinguished between lower-case "d" and upper-case "D" Discourses (Gee, 1989), is evident in mathematics as students learn and explain big ideas and connect those ideas to community issues. **Teaching** should be focused on student learning as well as helping students to develop cultural competence and sociopolitical consciousness. **Understanding** is also a vital part of communicating cultural knowledge. Ladson-Billings (2010) asked: How do we know what we know? What kind of evidence do we consider "good" enough? It is important that all viewpoints are valued in the mathematics classroom. **Relationships** are also critically important. Before teachers can teach the children in their classrooms, they must know and value who their students are and where they come from (Nieto, 2002). Finally, teachers must hold high **expectations** of all children. Research has shown that instruction is more effective, particularly in inner-city schools, when teachers have "high expectations" for all of their students (Brophy, 1983; Edmonds, 1979). Culture is the center of our lives—it defines us and provides us with a foundation upon which to learn.

Culture was the focus of the keynote address at the Atlanta conference as well. Dr. Joyce King (2011), Professor of Social Foundations and Benjamin E. Mays Chair of Urban Teaching, Learning, and Leadership at Georgia State University, delivered the address *Academic & Cultural Excellence in Mathematics: Transformative Education for Human Freedom*. She began with the Ma'atian theory of knowledge for the practice of human freedom: we want to be found worthy. Ma'ta, the ancient Egyptian concept for truth, order, law, and justice, was personified as the goddess Ma'ta who regulated the stars and the seasons, setting order to the universe.

In keeping with the conference title, Dr. King provided contemporary exemplars of the brilliance of Black children: Stephen Stafford, the Decatur, Georgia 13-year-old Morehouse College freshman; James Black Jr., the Brooklyn, New York middle school chess champion; and Khadijah Williams, the Los Angles, California homeless girl and Harvard University student. She used these exemplars of brilliance as the backdrop to her discussion of the National Alliance of Black School Educators (NABSE). Specially, she highlighted NABSE's 53-page, 1984 report: *Saving the African American Child: A Report of the Task Force on Black Academic and Cultural Excellence* (the task force was lead by Asa Hilliard and Barbara Sizemore). She drew attention to and discussed the following statements pulled from the report:

- Academic excellence cannot be reached without cultural excellence.

- African American children must be given the opportunity to experience an appropriate cultural education that gives them an intimate knowledge of, and which honors and respects, the history and culture of our people.
- "Excellence" in education is much more than a matter of high test scores on standardized minimum or advanced competency examinations.
- Excellence must prepare a student for *self-knowledge* and to become a contributing problem-solving member of his or her own community and in the wider world as well.
- No child can be ignorant of or lack respect for his or her own unique cultural group and meet others in the world on an equal footing.

In many ways, the 1984 report critically questioned the fundamental ideology of school desegregation in the 1954 *Brown v. Board of Education* decision, and its subsequent results:

> The racial composition of a school, when considered alone, does not necessarily have a substantial positive effect on academic performance of African American children. Significant evidence does not exist to support any claim that racial mixing alone has contributed to the excellence in the academic growth of the masses of African American students. It is not simply the addition of African Americans to a previously all-white school that makes a positive difference; it is the elimination of many of the negative factors within the school and the teaching and learning process, African American or European American, that enhances growth and development. (as cited in Lemons-Smith, 2008, p. 91)

Dr. King concluded her address by outlining the transformative curriculum and pedagogy of the Songhay Club, a group of teachers and graduate students, lead by her, that are teaching (and learning) in local Atlanta schools and communities:

- African-centered scholarship is used to create values-based, standards-aligned lessons that link learning to heritage knowledge;
- Criterion standards for contextualized teaching are used to "re-member" African heritage;
- Students learn in order to serve the school and the community;
- Students experience a community-building classroom environment;
- Teachers (and graduate students) use culturally authentic assessment for visionary parent education; and
- Collectively, teachers, students, parents and community members are producing knowledge for and about the community.

Next Steps and Concluding Remarks

The Benjamin Banneker Association conferences in Philadelphia and Atlanta provided yet another point of departure in moving toward new discourses about

Black children and mathematics. Both conferences offered a balance among pre-K–12 educators, teacher educators, and scholars and researchers as well as young emerging scholars and researchers who are committed to and passionate about strengthening the mathematics participation and achievement of Black children and youth. Nonetheless, to consider next steps is crucial. The theoretical and practical knowledge presented at the conferences must be disseminated beyond those who attended if substantive change in the teaching practices and learning opportunities in mathematics for Black children and youth is to occur. To that end, two writing projects aim to advance the work that was presented in Philadelphia and Atlanta. Evidently, one is this special issue of the *Journal of Urban Mathematics Education* (*JUME*); it includes proceedings papers from some of the symposium speakers and a coauthored editorial from the special issue guest coeditors (each attended at least one of the conferences). The contributing authors to this special issue (and the coedited volume, described below) include a range of researchers and scholars in mathematics (and science) education from graduate students who are ready to carry the torch as the next generation of advocates to some of the most recognized names in the field whose expertise and science has been crucial in changing the discourses and questioning educational policies and practices that work counter to the brilliance of Black children.

The second writing project is a coedited volume by Jacqueline Leonard and Danny Bernard Martin to be published by Information Age Press (expected winter 2012). The title of the volume *The Brilliance of Black Children in Mathematics: Beyond the Numbers and Toward New Discourse* is pulled directly from the conference series; most of its contributing authors were symposium speakers from the conference series as well. The edited volume in many ways is an extension of the ongoing advocacy work of BBA, with a specific focus on bringing to light the brilliance of Black children and youth. Leonard and Martin (in press) in the preface to the book, explain:

> This volume is unique in its focus. The authors explicate the experiences of Black learners across contexts, using diverse theoretical and conceptual perspectives, and critically analyze extant research with respect to those experiences. Rather than reify failure, we give attention to Black students' success and resiliency. The conception of brilliance adopted for this volume is not restricted to high test scores or exceptional grades. Many students do not achieve either but are, nevertheless, highly intelligent and capable. They are able to demonstrate their brilliance in non-school contexts and in their ordinary everyday mathematical lives. They are also able to demonstrate their brilliance in schools, but it may be often overlooked. In this volume, we bring it to light.

The volume is organized into five sections. Section one takes a sociocultural and -historical perspective on mathematics education as it relates to Black children. Section two focuses on policy implications brought about by *No Child*

Left Behind as it relates to charter schools and assessment. The third section centers on learning and learning environments and explores mathematics learning among Black children in particular content areas. The fourth section addresses Black student racial identity and school success (broadly defined). And the final fifth section focuses on preparing teachers to embrace the brilliance of Black children.

All in all, the *Beyond the Numbers* conference series was yet another component of a movement that aims to bring to the fore the need for research and practice which brings to light the brilliance of Black children in mathematics. The ongoing dialogue from the Philadelphia and Atlanta conferences, this *JUME* special issue, and the Leonard and Martin coedited volume all offer reverberating voices calling out for new discourses about Black children and mathematics. These discourses, however, must include an honest and critical look at the inequities and injustices that continue to exist in the schooling and life experiences of too many Black children while exhibiting the numerous examples of education for liberation that empowers both Black students and their teachers. This struggle to change the discourse is not anything new—various local, state, and national community, educational, and political organizations, including advocacy organizations such as the Benjamin Banneker Association, have fought for years in efforts to make the brilliance of Black children (in mathematics) visible. All of those who love (Black) children must continue to engage in that effort:

> What the best and wisest parent wants for his own child, that must the community want for all of its children. Any other ideal for our schools is narrow and unlovely; acted upon, it destroys our democracy.
>
> **– John Dewey** (1915/1990)

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