

# **E(race)ing Race from a National Conversation on Mathematics Teaching and Learning: The National Mathematics Advisory Panel as White Institutional Space**

*Danny Bernard Martin<sup>1</sup>*  
*University of Illinois at Chicago*

## **Abstract:**

In this paper, I wish to argue that several factors support a characterization of the National Mathematics Advisory Panel as an instantiation of the white institutional space (Moore, 2008) that characterizes mathematics education research and policy contexts more generally. In particular, my analysis highlights that mathematics education research and policy contexts such as the National Mathematics Advisory Panel are not immune to the structural and institutional racism that characterize many other areas of U.S. society.

Keywords: White space; institutional racism; mathematics education; National Mathematics Advisory Panel; policy; racial exclusion

One of the goals of the National Mathematics Advisory Panel—which was commissioned by President George Bush and crisscrossed the country for more than eighteen months—was to foster a national conversation on the teaching and learning of school mathematics. National panels and conversations initiated by a President of the United States are not unprecedented. In 1997, William Clinton launched *One America in the 21<sup>st</sup> Century: The President's Initiative on Race*. Similar to the National Math Advisory Panel, the Advisory Board on race held a series of public meetings across the country and, by the end of their work, produced a 229-page final report detailing their recommendations. A

---

<sup>1</sup> Danny Bernard Martin, Ph.D.

Associate Professor, Mathematics Education and Mathematics

Chair, Curriculum and Instruction

Faculty Affiliate, African American Studies

office: 3238 EPASW

phone: 312.413.0304

fax: 312.996.8134

[http://education.uic.edu/directory.cfm?page=faculty\\_info&netid=dbmartin](http://education.uic.edu/directory.cfm?page=faculty_info&netid=dbmartin)

Mailing address:

University of Illinois at Chicago

College of Education (MC 147)

1040 W. Harrison

Chicago, IL 60607

partial summary of the rationale and desired outcomes of the race panel's work is given below:

- The goal of the President's Initiative on Race is to strengthen our shared foundation as Americans so that we can live in an atmosphere of trust and mutual respect.
- The President has asked the Advisory Board to join him in reaching out to local communities and listen to Americans from all different races and backgrounds, so that we can better understand the causes of racial tension.
- The Advisory Board will help foster and participate in constructive dialogues on race that the President has called for in this Initiative. President Clinton has asked the Board to recommend creative ways to resolve these problems with the help and input of the community leaders who are committed to tackling these difficult issues.
- Finally, President Clinton believes that, while thoughtful dialogue will be an enormous benefit, no real progress can be made without specific actions aimed at breaking down the walls that surround the issue of race relations. The Advisory Board will study critical substantive areas in which racial disparities are significant, including *education*, economic opportunity, housing, health care and the administration of justice. (italics added)

By way of comparison, the rationale, goals, and desired outcomes of the National Math Advisory Panel—taken from the U.S. Department of Education's official website documenting the Panel's work and progress—are summarized below:

- The National Mathematics Advisory Panel is part of the President's plan to strengthen math education so that America's students receive the tools and skills necessary for success in the 21st century.
- Based on the influential National Reading Panel, the math advisory board will convene experts to evaluate the effectiveness of various approaches to teaching math and in so doing, create a research base to improve instructional methods for teachers.
- The Panel was charged with providing recommendations to the President and U.S. Secretary of Education Margaret Spellings on the best use of scientifically based research to advance the teaching and learning of mathematics.
- Expert panelists, including a number of leading mathematicians, cognitive psychologists, and educators, reviewed numerous research studies before preparing a final report containing guidance on how to improve mathematics achievement for all students in the United States.

Reading through the history and details of how these two panels came into existence (e.g., Domestic Policy Council, 2006; The White House, 2004), there are several interesting similarities. The underlying concerns—race relations and mathematics education—were both characterized as being in a state of crisis at the time that their respective panels and conversations were started. Progress in both of these areas was deemed a necessary precursor to the well-being and growth of American society. Moreover, both initiatives were backed by the authority of a United States

President, offering strong confirmation that race relations and mathematics education are heavily steeped in the sociopolitical fabric of our society and our everyday lives.

It is noteworthy that while the Advisory Board on race correctly highlighted *education* as a context where racial disparities exist and, simultaneously, as a context where race relations could be improved, *race* is conspicuously absent in the National Mathematics Advisory Panel's final report despite a review of 16,000 research publications and policy reports and testimony from 110 individuals. In fact, the word *race* appears a total of three times, without definition or conceptual development, in the final narrative. In one instance, the same sentence is repeated. In the third instance, there is only a parenthetical reference to race along with gender and language.

The absence of race also occurs despite the claim that the final report would provide policy recommendations on how to improve mathematics achievement for *all* students. This absence clearly ignores the findings of the earlier panel on race as well as a large body of research supporting the fact that schools are highly racialized spaces (e.g., Anderson, 2004; Barajas & Ronnkvist, 2007; DeCuir & Dixson, 2004; Flores-Gonzalez, 2002; Ginwright, 2005; Ladson-Billings & Tate, 1995; Lee, 2005; Lewis, 2003a, 2003b, 2004; Lipman, 1998; Noguera, 2003; Pollock, 2004a, 2004b; Tate, 1994, 1995; Woodson, 1990).

In effect, the panel on race confirmed that teaching and learning within school contexts are not immune to considerations of race and racism while the National Math Panel appeared to minimize this reality. In fact, I would argue that the panel on race offered strong confirmation that schools and their very organizational structures are not race-neutral. Rather, the institutional practices and norms within schools contribute deeply to the sociopolitical construction of race, racial hierarchies, and racial inequality in the larger society (e.g., Barajas and Ronnkvist, 2007; Martin, in press-b).

Although the omission of race—which I will refer to as *e(race)sure*—from the final report of the National Mathematics Advisory Panel is very apparent, it is not surprising. More generally, the omission of race, on one hand, and its conceptual underdevelopment, on the other, are epidemic to mainstream mathematics education research and policy discussions (Martin, in press-b).<sup>2</sup> As a result, both race and racism have remained non-central considerations in mainstream discussions of mathematics teaching and learning despite a growing literature documenting that mathematics teaching and learning are *racialized experiences* for *all* students (e.g., Berry, 2003, 2005; Martin, 2000, 2006a, 2006b, in press-a, in press-b; Moody, 2001; Nasir, 2002; Nasir, Heimlich, & Atukpawu, 2007; Oakes, 1985, 1990; Powell, 2002; Powell & Frankenstein, 1997; Reyes & Stanic, 1988; Spencer, 2006; Stinson, 2004; Tate, 1994, 1995).

In this paper, I wish to argue that several factors support a characterization of the National Math Advisory Panel as an instantiation of the *white institutional space* (Moore, 2008) that characterizes mathematics education research and policy contexts more generally. These factors include (a) the increased politicization of mathematics education for workforce needs (Committee on Science, Engineering, & Public Policy, 2007; Domestic Policy Council, 2006; National Research Council, 1989; National Sciences Board, 2003, 2004; U.S. Department of Education, 1997, 2006) and assimilation purposes (e.g., *Mathematics for All* and *Algebra for All*) and (b) structural and ideological barriers to centering race in both mathematics education research and policy conversations.

The term *white institutional space* comes from the work of sociologists Joe Feagin (1996) and Wendy Moore, who, in her book *Reproducing Racism: White Space, Elite Law Schools, and Racial Inequality* (2008), examined the white space of law schools and how the ideologies and practices in these schools serve to privilege white perspectives, white ideological frames, white power, and white dominance all the while purporting to represent law as neutral and objective.

---

<sup>2</sup> Race has received slightly more attention among international math education scholars but even in the international context, white scholars dominate.

Based on her analysis, Moore (2008, p. 27) claimed that the historical development of law schools as white institutional space is characterized by four foundational elements: (1) racist exclusion of people of color from elite law schools and positions of power in legal institutions which results in the accumulation of white economic and political power, (2) the development of a white frame that organizes the logic of these institutions and normalizes white racial superiority, (3) the historical construction of a curricular model based on the thinking of white elites, and (4) the assertion of law as a neutral and impartial body of doctrine unconnected to power relations.

In Martin (in press-b), I characterize the broad contexts of mathematics education research and policy as examples of white institutional space. I liken the white institutional space of mathematics education research and policy to a large projection screen. Although up-close inspection of the screen reveals bits and pieces of color, it is the overall whiteness of the screen that is most apparent and serves as its defining characteristic. In addition, the screen appears neutral yet it has the power to project “meanings and symbols that are associated with the dominant culture, thus reproducing an ideological framework that rationalizes and reproduces structures of inequality” (Moore, 2008, p. 17). More practically, one can also understand mathematics education as white institutional space by considering who is allowed to speak on issues of teaching, learning, curriculum, and assessment and who dominates positions of power in research and policy contexts. In each instance, white scholars disproportionately fill these roles, an important signifier of white institutional space (Moore, 2008).

What is highlighted by this reality is that mathematics education research and policy contexts are not immune to the structural and institutional racism that characterizes many other areas of U.S. society. Structural and institutional racism exist above and beyond the good intentions of individual whites who may advocate for issues of equity. Consideration of structural and institutional racism in mathematics education also helps to avoid the tendency to reduce racism to the level of individuals and individual psychology (Bonilla-Silva, 1997, 2001, 2003, 2005; Moore, 2008).

Within a structural and institutional analysis, it is revealed that even well-intentioned individual whites benefit from the historically contingent constructions of race and racial groups. These constructions serve to produce and reproduce racial boundaries circumscribing *whiteness*, *non-whiteness*, and *blackness* and to create a racial hierarchy that rewards those who are socially constructed as white, that oppresses those who are constructed as black, and that selectively gives honorary white status and privilege to some non-whites (Bonilla-Silva & Glover, 2004). Structural and institutional perpetuation of whiteness and white privilege (McIntosh, 1989) also help to maintain white institutional space. Barajas and Ronnkvist (2007), expanding on the work of Doane (1997) and Lewis (2003), stated that “whiteness is a mechanism of power that allows dominant group ideologies surrounding race to be imposed on other groups, often in subtle ways” (p. 1520).

Moore’s (2008) four foundational elements and a consideration of white privilege can be used to analyze the National Mathematics Advisory Panel as an instantiation of the white institutional space of mathematics education research and policy. I argue that the norms characterizing this space—including the almost exclusively white construction of the standards, values, and ideological frameworks that organize mathematics education research and policy—help to explain why the National Mathematics Advisory Panel failed to include race-based considerations in its final report, why no African American, Latino, or Native American mathematics education *researchers* were members of the Panel, and why the Panel failed to actively seek out the opinions of African American mathematics education scholars to provide comments and feedback on relevant topics.

### **Racial Exclusion<sup>3</sup>**

In terms of demographics and racial exclusion, it is notable that only two of the nineteen members of the National Math Panel members, Dr. Wade Boykin and Mr. Vern Williams, are African American. Only Mr. Williams is a mathematics educator and neither Dr. Boykin nor Mr. Williams is a mathematics education researcher. On a panel whose formation was premised on using *research* to make policy recommendations for all students, the research perspectives of African American math education scholars was essentially nullified and they had no voice in setting the direction of the Panel's recommendations. Moreover, based on the Panel's own accounting, the list of experts called on to examine materials, offer opinions on specialized topics, and examine drafts of sections of the final reports included no African American math education scholars.

Although it might be argued that Dr. Boykin and Mr. Williams' African American racial identity and their respective professional backgrounds are sufficient to insure that the perspectives of African American math education scholars would be represented, I would disagree. In the politics and practice of racial exclusion, it is not uncommon for those in power to selectively choose which non-whites will be allowed to speak, particularly when the views of those chosen offer no challenge to the status quo. In an analysis of policy contexts such as the National Math Panel, it is important to consider who is allowed to speak, who gets left out, and why. Significantly, given the absence of African American mathematics education scholars from the Math Panel, there were no loud calls from white mathematics education scholars in positions of power on or off the Panel to rectify this exclusion even if those calls would have amounted to symbolic solidarity gestures.

In addition to the Panel membership, analysis of the final report indicates that, among the studies cited, none were authored by African American math education scholars. Among the reports produced by the task groups on conceptual knowledge and skills, learning processes, instructional practices, teachers, and assessment, my analysis showed that research produced by African American math education scholars was cited only a handful of times.

The absence of African American math education scholars in such a key discussion of mathematics teaching and learning is unacceptable and only serves to preserve and protect the privileged status of white scholars and white perspectives. As a result of this exclusion, the knowledge base in mainstream mathematics education remains largely uninformed by African American perspectives and insights and, thus, limited in its explanatory power with respect to African American children's mathematical experiences and development.

Those who disagree with my analysis would suggest that African American perspectives had equal opportunity to be represented in the various public forums held by the Panel as it moved across the country. My response would be that responding from the audience and speaking from the position of power represented by Panel membership are very different. Moreover, it is very unlikely that the perspectives of speakers in the audience would have carried much weight given that the Panel did not even solicit the perspectives of African American scholars in its requests for feedback.

Those who disagree might also suggest, correctly, that not all African American mathematics education scholars produce research or advocate for policy that is in the best interests of African Americans while some white scholars, in fact, do advocate for African Americans. However, the numerical dominance of white scholars and the subsequent inattention to race, for example, in the vast majority of mainstream mathematics education research and policy serve as evidence that these white scholars are a minority within a much larger majority. While I agree that the voices of critical white scholars are important, they are no substitute for the authentic voices of critical African

---

<sup>3</sup> In this section, I devote the majority of my discussion to the exclusion of African American mathematics education researchers.

American scholars. The dominant presence of white scholars, whatever their orientation, only insures that white perspectives become the *only* perspectives that matter.

### **Development of a White Frame: E(race)ing Race from the Conversation**

To illustrate how the work of the Math Panel perpetuates the development of a white frame that organizes the logic of mathematics education research and policy, one can examine if, and how, the concept of *race* and the reality of racism were invoked as considerations in mathematics teaching and learning. Traditionally, mathematics learning has been conceptualized as a cognitive (e.g., Schoenfeld, 1987) or sociocultural activity (e.g., Saxe, 1988). However, rarely has it been conceptualized as a *racialized* form of experience (e.g. Martin, 2006a, 2006b). Within mainstream mathematics education research and policy contexts, race has typically been invoked only as a categorical variable used to disaggregate data and to rank students in a racial hierarchy of mathematics ability (Martin, in press-a, in press-b). Racism is rarely invoked.

Consistent with its omission from the final report, the word *race* is also absent in the reports produced by the task groups on conceptual knowledge and skills, learning processes, instructional practices, teachers, and assessment. The word *race* was not referenced a single time within the text of the reports on conceptual knowledge and teaching. When it was invoked in the other reports, it was only done so for the purpose of reifying the notion of a racial achievement gap in mathematics achievement.

A clear sign that race would not be considered, or taken seriously, in the work of the National Math Panel was the continued reference to *best available scientific evidence*. This phrase and the word *scientific* appear more than two dozen times in the report. As stated in the report's narrative:

The Panel's strongest confidence will be reserved for studies that test hypotheses, that meet the highest methodological standards (internal validity), and that have been replicated with diverse samples of students under conditions that warrant generalization (external validity)...The final category corresponds to statements based on values or weak evidence; these are essentially unfounded claims and will be designated as opinions as opposed to scientifically justified conclusions... All of the applicable high quality studies support a conclusion (statistically significant individual effects, significant positive mean effect size, or equivalent consistent positive findings) and they include at least three independent studies with different relevant samples and settings or one large high quality multisite study. (p. 82-83)

The imposition of these standards essentially eliminated a host of qualitative, ethnographic, case-study, and descriptive studies that are commonly used to examine the experiences of students of color in school settings, including their experiences with race and racism. These criteria also minimize the importance of studies that situate schools in their larger sociopolitical contexts.

As an example of the kind of research that *was* given value and which received support for future research involving African American and Latino students, the Panel highlighted issues of motivation, task engagement, and self-efficacy. Although important, these areas focus attention on students as though they are unmotivated, inclined to disengagement, and lacking in agency. No mention was made of the institutional and structural barriers inside and outside of school, including racism, that affect student mathematics achievement, engagement, and motivation.

### **Construction of a Curricular Model by White Elites**

As indicated in the final report of the Panel (U.S. Department of Education, 2008), “While the presidential charge contains many explicit elements, there is a clear emphasis on the preparation of students for entry into, and success in, Algebra” (p. xv). In fact, an entire chapter of the final report is devoted to defining the curricular space called *school algebra*, including a specific list of topics to be covered and a specification of the topics and essential skills that should be covered and learned in the years leading up to algebra. Subsequent chapters discuss learning processes, teaching and teachers, instructional practices, instructional materials, and assessment. I argue that the choice of algebra and the specifications in subsequent chapters amounts to a construction of a curricular model on behalf white elites who will benefit most from the larger goal of U.S. international competitiveness. Viewed in this light, the choice of algebra as a critical area of focus is not politically neutral. Yet, several questions can be raised about this choice. Why algebra? Who decides? Algebra for whom and for what not-so-apparent purposes? Whose interests are served by these choices? Whose interests are not served?

### **Mathematics Education as Politically Neutral**

Moore (2008) suggested that the assertion of law as a neutral and impartial body of doctrine unconnected to power relations is a foundational element contributing to the historical development of law schools as white institutional spaces. Similarly, the minimization of race is indicative of the ways that mathematics education and policy are positioned as neutral in the production of racial disparities and other social inequalities (Apple, 1992; Diversity in Mathematics Education, 2007; Martin, 2007, in press-b). Rather, a color-blind approach to inclusion symbolized by *Mathematics for All* rhetoric, for example, implicitly promotes cultural assimilation and the maintenance of white privilege (i.e., white student achievement, U.S. national interests and competitiveness). Indeed, the rhetoric of the final report of the National Mathematics Advisory Panel indicates that workforce considerations dominate the rationales for students to learn mathematics and for teachers to teach it effectively. According to the report (U.S. Department of Education, 2008):

During most of the 20th century, the United States possessed peerless mathematical prowess—not just as measured by the depth and number of the mathematical specialists who practiced here but also by the scale and quality of its engineering, science, and financial leadership, and even by the extent of mathematical education in its broad population. But without substantial and sustained changes to its educational system, the United States will relinquish its leadership in the 21st century. This report is about actions that must be taken to strengthen the American people in this central area of learning. Success matters to the nation at large. It matters, too, to individual students and their families, because it opens doors and creates opportunities. Much of the commentary on mathematics and science in the United States focuses on national economic competitiveness and the economic well-being of citizens and enterprises. There is reason enough for concern about these matters, but it is yet more fundamental to recognize that the safety of the nation and the quality of life—not just the prosperity of the nation—are at issue. (p. 1)

The unequivocal advancement of workforce needs and national competitiveness necessarily takes mathematics education out of the sheep’s clothing of being politically neutral. As stated by McLaren (2004):

Clearly, there are vested interests for certain kinds of mathematical knowledges that provide ballast for regnant regimes of capitalist exploitation that give rise to asymmetrical relations of

power and privilege centered around race, class, and gender relations and affiliations, and that give license to pursue narrow neoliberal approaches to educational policy and pedagogy...[S]chool mathematical knowledges generated across various institutional bases have become functionally advantageous for particular modes of governmentality and social control. (p. xiii-xiv)

Not discussed by the National Math Panel is what Dowling (1998) and Valero (2004) have called the *myth of participation*, the “conviction that people are handicapped to participate in society if they do not understand and are not able to use mathematics in a critical way” (Valero, p.8). Assimilation-oriented calls for all students, including underrepresented minorities, to participate more fully in mathematics ignores the fact that the nation does not have the capacity, or moral commitment, to absorb all of those who would be trained in mathematics and science. Simple supply and demand would dictate that the overproduction of engineers and scientists would lead to declining wages and standards of living and would put downward pressure on those at the lower rungs of the labor market, creating an even wider gulf between those with high levels of education and those without.

The blind and uncritical advocacy of mathematics education by members of the Panel also provides evidence for Valero’s (2004) claim that:

The unquestioned intrinsic goodness of both mathematics and mathematics education represent the core of its ‘political’ value: If students and citizens come to learn a considerable amount of mathematics properly, they will become per se better people and better citizens; that is, mathematics and its education empower or have the capacity of giving power to people...The problem with this kind of assumption is that there is no necessity for a further examination neither of mathematics as a knowledge and of mathematics education as practices, nor of power....Is it possible to assume that mathematics is a knowledge associated exclusively with progress and the well being of humanity? Or do we need to consider the involvement of that knowledge in the creations of both wonders and horrors in our current technological society? (p. 13-15)

Clearly, mathematics education is not politically neutral. Yet, in the context of white institutional space, we are asked to believe that it is so. It appears that the Panel wishes us to believe that because they sought out the best scientific evidence, their advocacy is based on fact and not values or opinion. However, a critical analysis shows that mathematics education, as framed by the Panel in terms of what is important and for what purposes, is part of a larger political agenda focused on national interests in a global world. The question left unanswered by the Panel is who, among us, beyond the white elite will *really* benefit from this agenda?

## **Conclusion**

My goal in this paper was simple. I set out to demonstrate that the National Mathematics Advisory Panel is an instantiation of the white institutional space of mathematics education research and policy. This space is characterized by power differentials, racial exclusion, and the perpetuation of white privilege above and beyond the good intentions of individual white scholars. In particular, I claimed that these forces help explain why there were no African American mathematics education scholars on the National Math Panel, why no research produced by African American scholars was cited in the final report despite key recommendations for future research involving African American children, and why race was essentially e(race)d from the final report.

Perhaps the most interesting aspect of the Panel’s insistence on the best available scientific evidence as the preferred criteria for considering some research and dismissing others because it is

based on values and opinion is how this stance diminishes the importance of the Panel's own report. In choosing algebra as the primary curricular focus and emphasizing workforce preparation and national competitiveness, the Panel revealed its own values by indicating what mathematics they considered most important and what purposes mathematics education should serve. In fact, the Panel used the entire report to support those values and invoked its own criteria to eliminate perspectives and research that did not support those values.

The imposition of white elite ideology dictating what mathematics is important and for what purposes as well as the imposition of standards of evidence that silence and minimize research that does not support these ideologies are key factors that help sustain white institutional space. Continued work and interrogation is needed to dismantle this space.

## References

- Anderson, J. D. (2004). The historical context for understanding the test score gap. *National Journal of Urban Education and Practice*, 1(1), 1–21.
- Apple, M. (1992). Do the standards go far enough? Power, policy, and practice in mathematics education. *Journal for Research in Mathematics Education*, 23, 412–431.
- Barajas, H. & Ronnkvist, A. (2007). Racialized space: Framing Latino and Latina experience in public schools. *Teachers College Record*, 109(6), 1517-1538.
- Berry, R. Q. (2003). *Voices of African American male students: A portrait of successful middle school mathematics students*. Unpublished doctoral dissertation, University of North Carolina at Chapel Hill.
- Berry, R. Q. (2005). Voices of success: Descriptive portraits of two successful African-American male middle school students. *Journal of African American Studies*, 8(4), 46–62.
- Bonilla-Silva, E. (1997). Rethinking racism: Toward a structural interpretation. *American Sociological Review*, 62, 465–480.
- Bonilla-Silva, E. (2001). *White supremacy and racism in the post-civil rights era*. Boulder, CO: Lynne Rienner.
- Bonilla-Silva, E. (2003). *Racism without racists: Color-blind racism and the persistence of racial inequality in the United States*. Lanham, MD: Rowman and Littlefield.
- Bonilla-Silva, E. (2005). “New racism,” color-blind racism, and the future of Whiteness in America. In A. W. Doane & E. Bonilla-Silva (Eds.), *White out: The continuing significance of race* (pp. 271–284). New York: Routledge
- Bonilla-Silva, E., & Glover, K. (2004). “We are all Americans”: The Latin Americanization of race relations in the United States. In M. Krysan & A. Lewis (Eds.), *The changing terrain of race and ethnicity* (pp. 149–183). New York: Russell Sage.
- Committee on Science, Engineering, and Public Policy. (2007). *Rising above the gathering storm: Energizing and employing America for a brighter economic future*. Washington, DC: National Academy of Sciences.
- DeCuir, J. & Dixson, A. (2004). So, when it comes out, they aren't that surprised that it is true: Using critical race theory as a tool of analysis of race and racism in education. *Educational Researcher*, 33(5), 26-31.
- Diversity in Mathematics Education (DiME). (2007). Culture, race, power and mathematics education. In F. K. Lester (Ed.), *Second handbook of research on mathematics teaching and learning* (pp. 405–433). Charlotte, NC: Information Age.
- Doane, A.W. (1997). Dominant group ethnic identity in the United States: The role of “hidden” ethnicity in intergroup relations. In N. Yetman, (Ed.), *Majority and minority: The dynamics of race and ethnicity in American life* (pp. 72–85). Boston: Allyn & Bacon.
- Domestic Policy Council. (2006). *American competitiveness initiative*. Washington, DC.: US Government Office of Science and Technology Policy.

- Dowling, P. (1998). *The sociology of mathematics education: Mathematical myths/pedagogic texts*. Dordrecht, The Netherlands: Kluwer.
- Feagin, J.R. (1996). *The agony of education: Black students at white colleges and universities*. New York: Routledge.
- Flores-Gonzalez. (2002). *Street kids/school kids: Identity development in Latino students*. New York: Teachers College Press.
- Ginwright, S. (2004). *Black in school: Afrocentric reform, urban youth and the promise of hip-hop culture*. New York: Teachers College Press.
- Ladson-Billings, G., & Tate, W. F. (1995). Toward a critical race theory of education. *Teachers College Record*, 97, 47–68.
- Lee, S. (2005). *Up against whiteness*. New York: Teachers College Press.
- Lewis, A. E. (2003a). Everyday race-making. *American Behavioral Scientist*, 47, 283–305.
- Lewis, A. E. (2003b). *Race in the schoolyard: Negotiating the color line in classrooms and communities*. New Brunswick, NJ: Rutgers University Press.
- Lewis, A. E. (2004). “What group?” Studying Whites and Whiteness in the era of “color-blindness.” *Sociological Theory*, 22, 623–646.
- Lipman, P. (1998). *Race, class, and power in school restructuring*. Albany, NY: State University of New York Press.
- Martin, D. (2000). *Mathematics success and failure among African American youth: The roles of sociohistorical context, community forces, school influence, and individual agency*. Mahwah, NJ: Erlbaum.
- Martin, D. (2006a). Mathematics learning and participation as racialized forms of experience: African American parents speak on the struggle for mathematics literacy. *Mathematical Thinking and Learning*, 8(3), 197–229.
- Martin, D. (2006b). Mathematics learning and participation in African American context: The co-construction of identity in two intersecting realms of experience. In N. Nasir & P. Cobb (Eds.), *Diversity, equity, and access to mathematical ideas* (pp. 146–158). New York: Teachers College Press.
- Martin, D. (in press-a). Liberating the production of knowledge about African American children and mathematics. In D. Martin (Ed.), *Mathematics teaching, learning, and liberation in African American contexts*. London: Routledge.
- Martin, D. (in press-b). Researching race in mathematics education. *Teachers College Record*, 111(2).
- McIntosh, P. (1989, July/August). White privilege: Unpacking the invisible knapsack. *Peace and Freedom*, 10–12.
- McLaren, P. (2004). Preface. In P. Valero & R. Zevenbergen (Eds.), *Researching the socio-political dimensions of mathematics education* (pp. xiii-xiv). Dordrecht, The Netherlands: Kluwer.
- Moody, V. (2001). The social constructs of the mathematical experiences of African-American students. In B. Atweh, H. Forgasz, & B. Nebres (Eds.), *Sociocultural research on mathematics education* (pp. 255–278). Mahwah, NJ: Erlbaum.
- Moore, W. (2008). *Reproducing racism: White space, elite law schools, and racial inequality*. New York: Rowman & Littlefield Publishers.
- Nasir, N. (2002). Identity, goals, and learning: Mathematics in cultural practice. *Mathematical Thinking and Learning*, 4(2&3), 213–248.
- Nasir, N., Heimlich, M., Atukpawu, G., & O’Conner, K. (2007, April). *Social constructions of race and identity in high school algebra classrooms*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- National Research Council. (1989). *Everybody counts: A report to the nation on the future of mathematics education*. Washington, DC: National Academy Press.

- National Science Board. (2003, August). *The science and engineering workforce: Realizing America's potential*. Arlington, VA: National Science Foundation.
- National Science Board. (2004, May). *Science and engineering indicators 2004*. Arlington, VA: National Science Foundation.
- Noguera, P. (2003). *City schools and the American dream: Reclaiming the promise of public education*. New York: Teachers College Press.
- Oakes, J. (1985). *Keeping track: How schools structure inequality*. New Haven, CT: Yale University Press.
- Oakes, J. (1990). Opportunities, achievement, and choice: Women and minority students in science and mathematics. In C. B. Cazden (Ed.), *Review of research in education* (Vol. 16, pp. 153–222). Washington, DC: American Educational Research Association.
- Pollock, M. (2004a). Race wrestling: Struggling strategically with race in educational practice and research. *American Journal of Education*, 111, 25-67.
- Pollock, M. (2004b). *Colormute: Race talk dilemmas in an American school*. Princeton, NJ: Princeton University Press.
- Powell, A. B. (2002). Ethnomathematics and the challenges of racism in mathematics education. In P. Valero & O. Skovsmose (Eds.), *Proceedings of the 3rd international mathematics education and society conference* (Vol. 1, pp. 15–29). Copenhagen, Denmark: Centre for Research in Learning Mathematics.
- Reyes, L. H., & Stanic, G. (1988). Race, sex, socioeconomic status, and mathematics. *Journal for Research in Mathematics Education*, 19, 26–43.
- Saxe, G. (1991). *Culture and cognitive development: Studies in mathematical understanding*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Schoenfeld, A. (1987). *Cognitive science and mathematics education*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Spencer, J. (2006). *Balancing the equations: African American students' opportunity to learn mathematics with understanding in two central city schools*. Unpublished doctoral dissertation, University of California, Los Angeles.
- Stinson, D. (2004). *African American male students and achievement in school mathematics: A critical postmodern analysis of agency*. Unpublished doctoral dissertation, University of Georgia, Athens.
- Tate, W. F. (1994). Returning to the root: A culturally relevant approach to mathematics pedagogy. *Theory Into Practice*, 34(3), 166-173.
- Tate, W. F. (1995). Race, retrenchment, and reform of school mathematics, *Phi Delta Kappan*, 75, 477-485.
- The White House. (2004). *A new generation of American innovation*. Washington, DC.
- U.S. Department of Education. (1997). *Mathematics equals opportunity*. Washington, DC: U.S. Government Printing Office.
- U.S. Department of Education. (2008). *Foundations of success: Final report of the National mathematics advisory panel*. Washington, DC.
- Valero, P. (2004). Socio-political perspectives on mathematics education. In P. Valero & R. Zevenbergen (Eds.), *Researching the socio-political dimensions of mathematics education* (pp. 5-23). Dordrecht, The Netherlands: Kluwer.
- Woodson, C.G. (1990). *The mis-education of the Negro*. Trenton, NJ: African World Press.

*Martin*