Studies on Mathematics Education and Society

BREAKING IMAGES

ICONOCLASTIC ANALYSES OF MATHEMATICS AND ITS EDUCATION

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18. Mathematics education as a racialized field

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Racism is endemic in society, in education, and in mathematics education. Thus, as a discipline, mathematics education functions as a racialized field. In this chapter, we explore critical race theory (CRT) as a theoretical frame to address this problem. In so doing, we offer offshoots of CRT – BlackCrit, LatCrit, TribalCrit, AsianCrit, and critical Whiteness theory – for mathematics educators to use in their scholarship. We also issue a call to mathematics educators regarding the urgent need to advance race-related work. We conclude the chapter by posing thought-provoking questions for consideration and action.

Introduction

Racism pervades society. It is endemic to the political project called education; it takes specific forms within mathematics education in particular. This phenomenon is readily apparent in the United States of America, referred to as the United States (US), given the racial contention in the broader society and mathematics education.[1] Given this, it must be stated from the outset that this chapter is written primarily in the context of the US, considering our experiences as mathematics education researchers within this country. Of course, there is a great deal of wider significance that can be extracted from US mathematics education

1 Those familiar with the United States context will be aware that mathematics education has been pulled back into the 'culture wars', to a considerable extent because of the efforts of activist researchers and scholars. We do not attempt to address that complex situation within this chapter; the short answer is that it is a manifestation of White supremacy.

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regarding racialization. Consequently, examining the racialized nature of mathematics education is important for mitigating racialized barriers that hinder minoritized students' mathematics achievement, persistence, and success.

In Western-dominated countries, and arguably beyond, mathematics education scholarship has propagated and primarily centered Eurocentric perspectives, experiences, knowledge systems, and paradigms (Davis, 2018, 2021; Powell & Frankenstein, 1997; also see Greer, 2021, for a short guide to the immensely important historical/anthropological work of Jens Høyrup). Resultantly, a high proportion of the discipline-specific handbooks, journals, and other mainstream publications have been authored and edited by White men. In the United States, White men have predominantly served as the leaders of mathematics educational organizations. By way of illustration, Julius Davis (2021) argued:

> The Mathematical Association of America (MAA) and National Council of Teachers of Mathematics (NCTM) were founded in 1915 and 1920, respectively, as two predominately White organizations that have and continue to shape the field of mathematics education. White men were the primary founders and leaders of these organizations and were derived historically from White higher education institutions [...] Both organizations have played a significant role in shaping school mathematics, mathematics content, pedagogy, learning, assessment, research, and the future direction of mathematics education. (p. 789)

Mathematics education has largely been constructed through the White male gaze. As a result, racially minoritized groups' perspectives and interests have been largely excluded vis-à-vis disciplinary knowledge systems, policies, and practices. Furthermore, institutional and structural racism persist and, in turn, materialize in the field. It stands to reason, then, that mathematics education functions as a racialized field. Given this reality, mathematics educators must employ race-conscious theoretical frames in their work. That is the goal of the current chapter.

We begin with our positionality to provide some context about who we are as two Black men who conduct mathematics education research through a critical[2] lens (also see Martin & Gholson, 2012, for a compelling discussion on being critical Black scholars in mathematics education).

2 For further related work on critical mathematics education, see, e.g., Frankenstein, 1983; Greer & Skovsmose, 2012; Skovsmose, 2023.

After that, we delve into critical race theory (CRT) and position it as a theoretical frame for consideration in the field. Then, we challenge mathematics education researchers to shift the paradigm, so to speak, and infuse critical theories of race in their work. Afterwards, we share discipline-specific examples and call for mathematics educators to use these theories. We conclude the chapter by briefly summarizing these main ideas and posing some critical questions to advance race-related work in mathematics education.

Our positionality

We are Black men who grew up and completed our mathematics education in the United States, which has a troubled history of racism regarding Black life that persists to this day. As examples, the ongoing Black Lives Matter movement and the murders of George Floyd, Breonna Taylor, and several other Black people at the hands of police have intensified international awareness of racial injustice in an unprecedented way. Because of our racialized identities, we have designed research agendas that interrogate racial issues in mathematics education with respect to Black (male) students, teachers, and communities (Davis, 2014, 2016, 2021, 2022; Jett, 2012, 2019a, 2019b, 2022; Jett et al., 2022; Larnell et al., 2016). As emerging researchers and leaders of CRT scholarship in mathematics education, our professorial experiences have catapulted our desires to contribute race-related work to the field.

The first author has been a race-conscious scholar for as long as he can remember. Stated differently, his critical race journey dates back to his childhood. He is from the predominately Black community of Memphis, Tennessee, which exposed him to racial issues, challenges, and problems. For example, the city of Memphis is where the honorable Dr. Martin Luther King, Jr. – civil rights activist, social justice warrior, and racial equity advocate – was assassinated in 1968. Although this occurred before the first author was born, he learned about the race riots that ensued and has witnessed the racial tensions that still occur within the city. As such, his previous experiences have exposed him to the institutionalized racism endemic in society and propelled him to produce antiracist scholarship, especially work highlighting Black people's strengths.

The second author enters the field as a race-first scholar and uses CRT to interrogate race and racism in mathematics education. He views CRT as the theoretical lens to understand and explain the problems plaguing the global Black community, which include issues within and outside of mathematics education. In prior work, he used CRT to study how race and racism impacted Black people in his community of West Baltimore, a city in Maryland, and better understand how broader social constructions impacted the mathematics education Black people received there. As his knowledge of CRT scholarship has matured, he has begun to use it to critique mathematics education holistically and challenge false notions that White men have been the primary architects of mathematics (Davis, 2018, 2021). Jointly, the authors use CRT to counter White supremacist logics that attempt to devalue the mathematics contributions and accomplishments of Black scholars.

Critical race theory in mathematics education

CRT is the leading theoretical lens employed to examine the racialized experiences of minoritized people in law, education, and mathematics education. As a framework, CRT emanates from critical legal studies (CLS) because of the dissatisfaction with how legal scholars fail to address race and racism in the law (Crenshaw et al., 1995; Tate, 1997). From a CRT perspective, social constructions of race are essential to understanding how racism functions in society, its institutions, and the law (Delgado & Stefancic, 2001). CRT operates from the premise that racism is a deeply rooted, permanent, and ever-changing feature of American society and its institutions to maintain White supremacy and power. CRT recognizes mainstream legal claims of objectivity, neutrality, colorblindness, and meritocracy as disguises for the self-interest of Whites in power. Furthermore, CRT validates the experiential knowledge of minoritized people and recognizes the importance of crossing disciplinary boundaries to understand the racialized experiences of minoritized people. In short, critical race theorists are committed to achieving racial justice.

In the 1990s, CRT began to take shape in education. Even though William Tate (1993) used CRT in mathematics education prior to 1995, the formal introduction of CRT in the broader education research

community occurred in 1995 through Gloria Ladson-Billings and Tate's (1995) path-breaking article 'Toward a Critical Race Theory of Education', published in *Teachers College Record.* In it, they ushered this theoretical perspective from CLS into (mathematics) education to center race and challenge mainstream multiculturalism, which largely pointed to equitable access to mathematics education without questioning the nature of what is being accessed. Danny Martin (2019) commented that 'the forms of inclusion offered up in equity-oriented discourses and reforms have typically involved two trajectories: (1) inclusion accompanied by marginalization; and (2) assimilation into the existing cultures of mathematics education' (p. 460). As a result, CRT radically shifted the multiculturalist and colorblind paradigm in education to accentuate race, racism, and other forms of oppression.

Daniel Solórzano and Tara Yosso (2002) assert that there are five defining elements of CRT in education; namely, that it: (1) asserts that race and racism are endemic and permanent fixtures of American society and structures; (2) challenges dominant ideology; (3) ascribes a commitment to social justice; (4) centralizes the experiential knowledge of minoritized people; and (5) uses an interdisciplinary approach to better understand racism, sexism, and classism.

As mentioned earlier, the genealogy of CRT in mathematics education (CRT(ME)) can be traced back to the scholarship of Tate. Tate (1993) published the first CRT(ME) article entitled 'Advocacy Versus Economics: A Critical Race Analysis of the Proposed National Assessment in Mathematics'. That same year, Tate and colleagues published an article merging law, CRT, education, and mathematics education (Tate et al., 1993). Because of this foundational work, scholars have credited Tate as the chief architect of CRT in (mathematics) education (Davis, 2014; Davis & Jett, 2019; Lynn & Adams, 2002). Tate, however, credits Derrick Bell, recognized as the father of CRT, with being the first scholar to use CRT to examine educational issues; see Bell's (1975) article 'Serving Two Masters: Integration Ideals and Client Interests in School Desegregation Litigation' in *The Yale Law Journal* for an education-related critical race analysis. Be that as it may, Tate is a trailblazer regarding the production of scholarship focused on CRT in education that interweaves mathematics education specifically.

Martin (2009), another prominent race scholar in mathematics education, argues that CRT reckons with the historically and socially constructed nature of race and racism. He challenges the racial hierarchies of mathematical ability, participation, and power. Moreover, he asserts that:

> Drawing on analyses of the ways that race and racism are conceptualized and studied outside of mathematics education will help illustrate the need for similar kinds of analyses within mathematics education. I argue that rather than exploiting the usefulness of sociological and critical theory frameworks, the vast majority of mainstream mathematics education research and policy purporting to explain so-called racial achievement gaps between African American, Latino, and Native Americans on one hand, and White and Asian students on the other, continues to rely on inadequate and impoverished approaches to race, racism, and racialized inequality. (p. 297)

In this article, Martin admonishes the mathematics education community for its poor treatment and analysis of race in research and policy. A more comprehensive race-based analysis, he argues, will further illuminate the racial issues present in mathematics education research, elucidate how mathematics education policy operates and is implicated in sustaining racial hierarchies, and lead to more nuanced race-based analyses among mathematics educators.

Building on this firm foundation of race scholarship, many Black mathematics education researchers have used CRT(ME). To illustrate, we co-edited *Critical Race Theory in Mathematics Education* (Davis & Jett, 2019). This edited volume includes chapters written by scholars who extrapolate the tenets of CRT to advance race-conscious analyses in our field. More precisely, scholars merged CRT and mathematics education knowledge to establish stronger connections between the two. We acknowledge the racial atrocities thrust upon Black people and center Black students in mathematics contexts in our work. We also acknowledge that other minoritized groups have experienced mathematics education as a racialized field. Therefore, we call for a paradigm shift – one that explicitly and unapologetically attends to issues of race, racism, and racialization – to the study of these groups to contribute race scholarship to the field.

Shifting the paradigm: Infusing critical theories of race and ethnicity into mathematics education

CRT has a growing influence on education. The CRT literature continues to expand, as CRT-related publications have focused on school-based education, tertiary education, and other (emerging) academic disciplines. Over the last two decades, CRT has incorporated the racialized and ethnicized experiences of minoritized people. Given this emphasis, offshoots of CRT, including BlackCrit, LatCrit, TribalCrit, AsianCrit, now address racial oppression beyond the Black/White binary.[3] Further, White scholars have used critical Whiteness theory to look inward and behind the mirror to expose White privilege and challenge racism (Delgado & Stefancic, 1997).

Here, we expound on the four aforementioned theoretical perspectives that were birthed out of CRT to more systematically examine race, racism, ethnicity, classism, and other forms of oppression applied to diverse racial and ethnic groups in mathematics education as well as the complementary perspective of Whiteness studies. These frameworks can be useful for mathematics educators who explicate race and ethnic-conscious analyses within the field. We acknowledge that, in this overview, we are not attempting to address the complexities of diversity within each of these groupings. Contemporary immigrants from Africa differ in significant ways from the descendants of enslaved Africans; Indigenous people are as diverse as the environments in which they are ecologically embedded, and so on. These issues have added importance because of the tendency of supremacists to essentialize, and, over time, they will evolve as an essential extension of our analysis.

BlackCrit

Since CRT's inception in education, scholars have argued that this theoretical framework has privileged the Black experience, Blackness, and in some regards, African Americans (Dumas & ross, 2016; Phillips, 1998). Michael Dumas and kihana ross argued that CRT in education

3 FaithCrit, QuantCrit, and QueerCrit represent other emerging offshoots of CRT. For related reading, see, e.g., Garcia et al., 2018; Malone & Lachaud, 2022; Valdes, 1998.

moved away from focusing on Blackness because of critiques from non-Black scholars. However, they emphasized that there is a need to incisively analyze the specificity of Blackness and antiBlackness in education and agreed that there is, indeed, an implicit focus on Blackness in CRT in education.

BlackCrit analyses the specificity of Blackness and antiBlackness by explaining how Black people have been marginalized, disdained, disregarded, and excluded in educational spaces (Dumas & ross, 2016). Distinguishing BlackCrit from CRT, Dumas and ross proffer that CRT is not intended to address how antiBlackness informs and influences racist ideology and institutional practice. Rather, BlackCrit is necessary to evaluate 'how blackness matters in our understanding of key tenets related to, for example, the permanence of racism and whiteness as property' (p. 417).

Dumas and ross (2016) offer three foundational ideas of BlackCrit in education: (1) 'AntiBlackness is endemic to, and is central to, how all of us make sense of the social, economic, historical, and cultural dimensions of human life' (p. 429); (2) 'Blackness exists in tension with the neoliberal-multicultural imagination' (p. 430); and (3) 'BlackCrit should create space for Black liberatory fantasy, and resist a revisionist history that supports dangerous majoritarian stories that disappear Whites from a history of racial dominance' (p. 431).

Mathematics educators have begun to use BlackCrit to advance understandings of Black children's and adults' experiences (Martin et al., 2019; Matthews et al., 2021). Martin and colleagues used BlackCrit to examine systemic violence regarding the experiences of Black mathematics learners. They also used BlackCrit to offer a Black Liberatory Mathematics Education, which advances a radical reimagination of mathematics education for Black students. Martin and colleagues recognized that liberatory mathematics education cannot exist within the current educational system rooted in racism (White supremacy) and antiBlackness. In other work, Lou Matthews and colleagues used BlackCrit in a reflective essay to explore possibilities for the Black community to honor families' agency, expand digital equity, and prioritize approaches that support liberatory mathematics education during the COVID-19 global pandemic.

LatCrit

LatCrit examines the positioning of Latinas/os[4] writ large and encompasses unique issues directly related to the Latina/o community, including immigration, language, and phenotype (Bernal, 2002). LatCrit also values the strengths of Latina/os to highlight community wealth, challenges commonly held beliefs about the racial hierarchy of ability, and problematizes the notion of a race-neutral society. Similar to CRT, LatCrit is derived from the following five foundational tenets: (1) the centrality of race and racism intersecting with other forms of oppression; (2) a challenge to dominant discourse and ideology; (3) a profound commitment to social justice; (4) the validation of experiential knowledge; and (5) the incorporation of a transdisciplinary perspective (Bernal, 2002; Fernández, 2002; Solórzano & Yosso, 2001). Drawing from these tenets, scholars have used LatCrit to highlight how their ethnicity, language, immigrant status, and culture have been rejected in classrooms.

While there is a rich literature on Latinos/as and mathematics education (e.g., Tellez, Moschkovitch, & Civil, 2011), there has been limited use of the term 'LatCrit' in mathematics education. Rochelle Gutiérrez (2013) offered it as a theoretical perspective to consider using in the socio-political turn. She recognized that scholarship on LatCrit was scant, but the framework provided evidence about the ability to challenge and dismantle social constructions of race, racism, Whiteness, sexism, classism, and other forms of oppression (e.g., language, immigrant status). Gutiérrez also pointed out that social activism and testimonios were important features for those using LatCrit in mathematics education.

In her study, Maria Zavala (2014) used LatCrit to examine Latina/o students' narratives of learning mathematics in an urban multilingual high school. Her findings revealed that Latina/o students had to grapple with racial stereotypes and linguistic challenges given that American English served as the official language of mathematics

4 Like other critical scholars, we problematize the gender binary present in Latina/o. We use this language here to honor the way it was presented by the cited authors even though we recognize that language continues to shift regarding the Latinx community.

instruction. These complex factors significantly impact Latina/o students' mathematics identities and ultimately influence how they see themselves as mathematics learners. In summary, LatCrit has allowed mathematics education researchers to better understand how Latina/o students' mathematics identities were co-constructed in relation to their ethnic, linguistic, and gendered experiences.

TribalCrit

TribalCrit addresses the racialized challenges thrust upon Indigenous people (Brayboy, 2005). CRT purports that racism is endemic, while TribalCrit purports that colonization is endemic. Regarding theory, many Indigenous scholars view it as a roadmap for their community's continuous survival. Researchers have used TribalCrit to examine the misappropriation of Native mascots, the misrepresentation of cultural symbols, and fraudulent ethnic policies (Castango & Lee, 2007; Marshall, 2018). The interest convergence tenet, in particular, has often been used to demonstrate how these matters have served the interests of White people, institutions, and systems.

Education researchers have used TribalCrit in mathematics education and other science, technology, engineering, and mathematics (STEM) fields (Kokka, 2018; Marshall, 2018; also see Deloria, 1997; Stavrou & Miller, 2017). Samantha Marshall used TribalCrit to produce an Indigenous sovereign Tribal nation in mathematics education. In her qualitative study, she provided insights into the value Indigenous leaders hold for the education of their youths, including cultural congruity, cultural and linguistic sustainment, and sovereignty. Her article illuminated the complexities of Indigenous education and Tribal nation-building in and through the lens of mathematics education. In a different study, mathematics educator, Kari Kokka, used TribalCrit to examine the experiences of four STEM teacher activists who created a social justice STEM organization. She found that firsthand experiences with being oppressed led them to become STEM teacher activists. She also found that being STEM activists became a vehicle of healing for them as they addressed the inequities they experienced or witnessed in their communities.

AsianCrit

As another adaptation of CRT, AsianCrit grounds the experiences, perspectives, and voices of Asian Americans in light of the racism thrust upon them (Iftikar & Museus, 2018; Museus & Iftikar, 2014). Asian American groups often include: 'Bhutanese, Burmese, Cambodian, Chinese, Hmong, Indian, Indonesian, Japanese, Korean, Lao, Pakistani, Taiwanese, Thai, and Vietnamese Americans, in addition to many other ethnic groups' (Iftikar & Museus, 2018, p. 4). White supremacist constructions of these groups have attempted to lump them into a singular category, but they have distinct languages, norms, values, and traditions. Martin (2009) notes that social constructions of 'Asian' in an international context frame them as negative and in direct competition with White students and the global White power structure to invoke strong US nationalism.

AsianCrit proposes seven tenets to better understand and examine the racial and ethnic realities of Asian Americans (Iftikar & Museus, 2018). These tenets elucidate the White supremacist sustenance that attempts to corral Asian Americans into a single group and simultaneously thwart their advancement. They include: (1) '*Asianization* is grounded in the reality that people within the US only become "Asian" because of White supremacy and the racialization processes that it engenders. Specifically, White supremacy and pervasive nativistic racism in the US result in Asian Americans being racialized as perpetual foreigners, threatening yellow perils, model and deviant minorities, and sexually deviant emasculated men and hypersexualized women' (p. 8); (2) *transnational contexts* highlights the global relationships between Asian Americans and White supremacist logics; (3) *(re)constructive history* draws upon the assets, contributions, and voices of Asian Americans to produce an accurate depiction of the group's history; (4) *strategic (anti)essentialism* purports that Asian Americans join forces to gain power and advocate against White supremacist structures and policies; (5) *intersectionality* explores how other constructs such as gender, class, and sexual orientation fuel systematic oppression for this group; (6) the *story, theory, and praxis* tenet espouses that racially minoritized groups' experiential knowledge challenges dominant, deficit narratives about Asian Americans; centers their real experiences; and offers a more

holistic orientation to their perspectives; and (7) the commitment to *social justice* tenet advances that AsianCrit seeks 'to eradicate racism, sexism, heterosexism, capitalist exploitation, and other systemic forms of dehumanization and domination' (p. 9).

Scholarship using AsianCrit in mathematics education[5] is in short supply. Kokka and Theodore Chao (2020), two Asian American mathematics educators, used AsianCrit to study Asian American teachers' experiences with racism and conceptualize their conjoining racial, ethnic, and mathematics teacher identities in the wake of the model minority myth that pervasively suggests that Asians are good at math (Shah, 2019). Kokka and Chao's findings indicate that the four Asian American mathematics teachers experienced internalized racism and engaged in stereotype management by distancing themselves from other Asian Americans, avoiding discussions about their own difficulties in mathematics, and intentionally reaching out to develop relationships with Black and Latinx students.

WhiteCrit?

The four cases just described suggest a fifth, namely 'WhiteCrit', yet that word has scarcely appeared in the literature. There are, however, critical studies of Whiteness in mathematics education, influenced by CRT (Battey, 2013; Foste & Irwin, 2020; Nishi, 2021). These studies name and expose the inner workings of White privilege and examine race, racism, and racial identity within mathematics education, revealing how Whiteness functions to maintain racial dominance. Power and oppression are articulated, redefined, and reasserted through individual and institutional practices that privilege Whiteness (Corces-Zimmerman & Guida, 2019). The power of Whiteness intersects with other systems of domination, including but not limited to patriarchy, capitalism, ableism, and genderism.

Jeremy Bohonos (2019) contends that critical Whiteness theory does not have a clear set of tenets that govern it. However, other scholars have identified the following three core elements that guide it: (1) *Thinking Whitely* explains the many ways that Whiteness and White supremacy

5 In related work, see Cvencek et al. (2015) for a poignant discussion regarding the development of math–race stereotypes.

influence White people's conscious and unconscious thoughts to maintain racial superiority and dominance (Corces-Zimmerman & Guida, 2019). (2) *Behaving Whitely* includes well-intentioned White people who maintain White domination consciously and unconsciously through actions, White complicity, and White emotionality (Corces-Zimmerman & Guida, 2019; Foste & Irwin, 2020). White complicity includes the unconscious negative beliefs that White people hold about non-White people, which affect their practices and habits centered on Whiteness, and the consequences of those practices and habits. White emotionality underscores the racialized ways that White people experience and act on emotions such as shame, guilt, denial, anger, rage, sadness, discomfort, and defensiveness as a means to protect White fragility (Anderson, 2016; Corces-Zimmerman & Guida, 2019; DiAngelo, 2018). (3) *Speaking Whitely* refers to the discursive and rhetorical strategies, the elusive and deceptive language, White talk, colorblindness, and color-evasiveness that White people use to reinforce the status and privilege of Whiteness (Annamma et al., 2016; Bonilla-Silva, 2006; Corces-Zimmerman & Guida, 2019; McIntyre, 1997).

Martin (2009, 2019) notes how there has not been a systematic study of Whiteness and its relations to mathematics education (i.e., mathematics participation, opportunity to learn, and achievement) even from mathematics education researchers who claim to study race in their analysis of mathematics achievement. Whiteness is a salient aspect of the mathematics education enterprise; most professors, researchers, teachers, and students are White and benefit from the individual, institutional, and structural arrangement of Whiteness (Battey & Leyva, 2016; Davis, 2021; Stinson, 2017). Martin (2009) also notes that Whiteness is a part of the larger system of racism that operates to privilege White mathematical knowledge construction. White male mathematics educators and researchers represent a highly racialized and gendered space that is privileged in the field and has influenced social and policy perspectives about mathematics (Davis, 2021; Martin, 2008, 2009).

BlackCrit, LatCrit, TribalCrit, and AsianCrit are, in general, about how these groups of people are harmed by White domination. What might it mean to postulate WhiteCrit as analysis of the harm done to White people, specifically through mathematics education? At first

sight, that might seem a strange suggestion given White privilege; however, James Baldwin did raise the question, pointing out that, for White racists, 'their moral lives have been destroyed by the plague called color' (Buccola, 2019, p. 383).[6] WhiteCrit in this sense could add another dimension.

Discipline-specific examples

Mathematics education researchers have emphasized the racialized nature of mathematics policies, textbooks, and word problems (Martin, 2009; Martin et al., 2019; Tate, 1995). Numerous other examples demonstrate the racialized nature of the field and show how racist practices manifest in systematic and institutional ways. One striking example is tracking, which denies minoritized students access to 'high-quality' mathematics instruction. There are several issues in relation to testing, perhaps starting with the characterization of differences in test scores as 'achievement gaps' (Davis & Martin, 2018; Miller-Jones & Greer, 2009). And the traceable connection between the Eurocentric myth of the development of academic mathematics and intellectual White supremacy is discussed at various points in this volume.

In this section, we provide two discipline-specific examples that brought racial issues to the fore and simultaneously gained national attention in the United States. The first example occurred in the state of Georgia; ironically, the first author currently works at one of the state institutions that prepares mathematics teachers for this particular school district (although it was not revealed where the teacher in this scenario received their teaching credential). Notwithstanding, a third-grade teacher shared the following exercise with students: 'Each tree had 56 oranges. If 8 slaves pick them equally, then how much would each slave pick?' (AFRO Staff, 2012). Another exercise read: 'If Frederick got two beatings per day, how many beatings did he get in 1 week?' Interestingly, another teacher made copies of the assignment. As a result, these word

6 The quotation is from a debate with the avowed White supremacist, William F. Buckley, Jr., at the Cambridge Union in 1965, described in detail, and with interwoven biographies of the protagonists giving historical background, in Buccola's *The Fire Is Upon Us*.

problems, embedded with racist logics, were spread to a racially diverse group of third-grade students in four distinct classrooms.

In a California mathematics classroom, a White woman teacher was placed on leave after a video went viral of her mocking Native Americans. In the video, she was dressed in clothing representative of Native American culture with imaginary tomahawks in her hand. She was repeatedly saying SOH-CAH-TOA, a mnemonic often used to help students remember the trigonometric functions: Sine (opposite over hypotenuse), Cosine (adjacent over hypotenuse), and Tangent (opposite over adjacent). The blatant racism encroached in this mathematics teacher's primitive stereotypes about Native American practices provides another example of how racist ideologies thrive in mathematics classrooms. Taken together, these two discipline-specific examples could use BlackCrit and TribalCrit, respectively, to highlight the dehumanizing aspects of mathematics practices for racialized students and clearly indicate which racial groups win and which ones lose apropos their mathematics education. In so doing, these examples, among others not mentioned here, necessitate a call to the mathematics education community regarding the racialized nature of the field.

A call to mathematics educators

Socially and politically constructed meanings of Black, Latinx, Native, Asian, and White American pervade the racialized and ethnicized experiences of these groups in mathematics education research, policy, and practice. Hence, these constructions perpetuate the racial hierarchy of mathematical ability, participation, and power that remains unchanged and unchallenged in meaningful ways. Martin (2009) argues that, 'rather than questioning and deconstructing the *racialized* nature of this hierarchy, many mainstream math educators accept it as their natural starting point' (p. 316). He also maintains that the racialized nature of students' experiences, research, and policy in mathematics education contributes to the social devaluing of African Americans, Latinx, and Native Americans. Contrastingly, Whiteness or being White occupies a privileged space that does not result in being socially devalued. Earlier, we delved into BlackCrit, LatCrit, TribalCrit, AsianCrit, and WhiteCrit, and our heartfelt charge is for mathematics educators to use these

frameworks to critically examine issues of race, racism, ethnicity, and other forms of oppression.

In this vein, we are calling for a racial awakening that expands CRT in mathematics education to address, question, and deconstruct the racialized and ethicized experiences of Black, Latinx, Native, Asian, and White Americans. CRT's offshoots, namely, BlackCrit, LatCrit, TribalCrit, AsianCrit, and WhiteCrit, offer tools for systematic examinations. These manifestations of CRT should be further conceptualized, expanded, and merged with our disciplinary field to properly address, mitigate, and dismantle racist practices. Empowering racially minoritized scholars to explore their own racialized and ethnicized group's mathematics education experiences will unearth additional insights given their requisite knowledge systems, skills, and realities.

Concluding thoughts

In this chapter, we have expounded CRT, which has been central to our work as Black male mathematics education researchers. We have also brought focused attention to BlackCrit, LatCrit, TribalCrit, AsianCrit, and Whiteness studies with the goal of having more mathematics education researchers use them in their work. While these theoretical frames draw from CRT, they can all distinctly address the racialized nature of the field with respect to and across different racial categories. Furthermore, we offer the following questions for consideration:

- In what nuanced ways can mathematics education scholars use these critical theories of race to advance knowledge about the racialized nature of the field and ways to address it?
- In what ways can we conjoin theories of race to build on and extend foundational scholarship in mathematics education (e.g., critical mathematics education) to strengthen race-related work?
- What is the specific role of mathematics education scholars in this racist and xenophobic political climate (i.e., when critical race scholars are being attacked, mathematics curricular materials are being censored, and disciplinary textbooks are being banned)?

- What opportunities exist to facilitate change regarding the racialized nature of mathematics beyond securing grant funding, conducting research studies, presenting at conferences, and writing scholarly publications?
- What can we learn from international scholars, their histories, and their race-oriented epistemologies about mathematics education that could be instructive for the field?

In closing, please know that we have not hit a plateau with race work, as these questions indicate that issues of race, racism, and racialization continue to run amok in mathematics education. It is important to emphasize that Black, Latinx, Native, and Asian American scholars, students, and families should not bear all of the responsibility to address Whiteness and racism in the field. White mathematics educators must take greater responsibility for doing race work with White populations to challenge and dismantle the system of racism and White supremacy. As this chapter demonstrates, there is still much more work that needs to be done to understand the experiences of racially minoritized students in mathematics education, break the image of mathematics as a White male domain, and honor the full humanity of racialized groups in mathematics contexts.

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