

# Caring, Race, Culture, and Power: A Research Synthesis Toward Supporting Mathematics Teachers in Caring With Awareness

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*In this article, the author draws on theories of care to lay out a theoretical map of sorts on what an effective, caring teacher–student relationship that supports student learning might “look like.” In so doing, theories of culturally relevant pedagogy are considered, as these not only illustrate effective practices caring teachers employ but also because such theories provide models of classroom practices that consider explicitly issues of race, culture, and power. The author aims to illuminate the complex, nuanced, and, at times, overwhelming descriptions of what it means to be a caring teacher in the service of student learning. The author concludes by considering models of professional development that hold potential for supporting mathematics teachers in developing teacher–student relationships reflective of “caring with awareness.”*

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Addressing equity or, more appropriately, inequity, remains at the forefront of current reform efforts in mathematics education (National Council of Teachers of Mathematics [NCTM], 2000, 2008). Persistent gaps in opportunities to learn mathematics between historically underrepresented students and their middle-class White counterparts remain (Flores, 2008). Urban schools, populated largely by minority students who too often live in disadvantageous economic circumstances, are under-resourced and underachieving (Darling-Hammond, 2007; Ladson-Billings, 2006). Low-income and minority students are less likely to have qualified teachers and well-resourced schools (Hill & Lubienski, 2007; Oakes, 2005) and are more likely to experience school mathematics as disconnected from their out-of-school experiences (Civil, 2007; Nasir, Hand, & Taylor, 2008). Addressing these gaps in opportunities to learn requires teachers to see mathematics as not only relevant to but also part of students’ lives and communities. It requires teachers to move beyond a narrow focus on measurable performance as dictated by the pressures of standardization and mathematics testing to attend to students’

interests, cultural backgrounds, and concerns; it requires getting to know students well enough to engage them in learning and relating to students across cultural, racial, and socioeconomic lines. Looking to theories of care in education can provide insight. Given society's pervasive deficit orientation toward urban students and communities—too often reflected in preservice teachers' (and, likely, inservice teachers') stereotypical views of urban education environments (Aaronsohn, Carter, & Howell, 1995; Gomez, 1996)—in this article, to counter this deficit orientation, I make a case for mathematics teachers to be provided learning opportunities to understand the need for and importance of developing caring relationships with students.

One long-accepted characteristic that is often repeated in the literature of an “effective” teacher is the ability to cultivate and maintain strong interpersonal relationships with students (Good & Brophy, 2000; Ladson-Billings, 1994; Noddings, 1992). This literature suggests that certain relationships, such as those promoting an “ethic of care” between teachers and students (Noddings, 1984, 1992) lead to higher levels of student engagement and achievement (Pianta, 1999). Furthermore, research documenting effective practices for traditionally marginalized students, such as culturally relevant pedagogy, suggests that care is an integral component of these practices (Irvine, 2002; Ladson-Billings, 1995). These relationships are built on teachers' understanding of each student “in non-stereotypical ways while acknowledging and comprehending the ways in which culture and content influence their lives and learning” (Darling-Hammond, 2002, p. 209), are necessarily political (Gutstein, 2006), and allow teachers to utilize the cultural and linguistic resources students bring to the classroom to further their learning of content (Cochran-Smith, 1999).

Establishing productive teacher–student relationships in the mathematics classroom has direct implications for equity. Teachers consider a number of factors when determining whether and how to engage in relationships with their students (Davis, 2001). These factors include a teacher's sense of a student's likelihood for success (Muller, Katz, & Dance, 1999), how teachers understand their role as teachers (Woolfolk Hoy, Davis, & Pape, 2006), and their beliefs about students' abilities and motivations (Stipek, Givvin, Salmon, & Macgyvers, 2001). In the teacher–student relationship, these varied beliefs can take the form of greater attention for more highly regarded students, valuing their responses and evaluating their performance more positively. In contrast, teachers are more likely to accept poor performance from students for whom they hold low expectations (Brophy & Good, 1970) and students who are perceived to be low in ability may be given fewer opportunities to learn new material, asked less stimulating questions, or given briefer and less formative feedback (Cotton, 1989). In the context of mathematics education, the nature of a teacher's relationship with her or his students impacts whether and how the teacher views a child as mathematically

competent; this view, in turn, impacts the subsequent mathematical situations posed to a child to further her or his mathematical understanding (Hackenberg, 2010a).

Teachers also tend to have preferences for students whom they perceive to be most like themselves (Spindler & Spindler, 1982). Given that the mathematics teacher population, reflecting the teacher population generally, consists primarily of White, middle-class, females teaching a student population that is increasingly racially, ethnically, linguistically, and socioeconomically diverse (Howard, 1999), what teachers perceive to be “most like themselves” necessarily falls along lines of race, culture, and class. Often teachers, particularly White teachers, have more negative attitudes and beliefs about minority children than about White children (Irvine, 1985). These attitudes and beliefs, coupled with teachers’ stereotypical views of urban schools and communities and the fact that cultural distances between teachers and students are likely greater in urban areas than in smaller communities, suggest that attending to teacher–student relationships can support student success in urban areas. Moreover, for African American, Latina/o, immigrant, and other students traditionally marginalized in mathematics (who often make up the majority in urban schools) to achieve well, an understanding of effective student–teacher relationships is imperative given that research documents that the presence of positive teacher–student relationships—driven by teachers’ robust knowledge of their students—is an important factor for their mathematics success (Berry, 2008; Borman & Overman, 2004; Gutstein, 2006; Ladson-Billings, 1994).

Here, I draw on theories of care (Beauboeuf-Lafontant, 2002, Noddings, 1984, 1992; Rolón-Dow, 2005; Thompson, 1998) to begin to lay out a theoretical map of sorts on what an effective, caring teacher–student relationship that supports student learning might “look like.” Next, I turn to theories of culturally relevant pedagogy (Gay, 2000; Ladson-Billings, 1994), as these not only illustrate effective practices caring teachers employ but also because this work provides models of classroom practices that consider explicitly issues of race, culture, and power and have had demonstrative effects on the academic achievement of traditionally marginalized students. (For a detailed and explicit example of culturally relevant *and* critical pedagogy enacted in the mathematics classroom see Gutstein, 2006.) Given that the development and influence of caring teacher–student relationships has been largely understudied in mathematics education (Vithal, 2003) and that there is still relatively little published empirical research examining culturally relevant *mathematics* pedagogy, the majority of the research discussed here draws on work outside of mathematics education.<sup>1</sup> Whenever possible, how-

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<sup>1</sup> Two fairly recent published books in mathematics education have drawn explicit connections to mathematics education and culturally relevant (responsive or specific) pedagogy: *Culturally Responsive Mathematics Education*, edited by Brian Greer, Swapna Mukhoopadhyay, Arthur Powell, and Sharon Nelson-Barber (2009), and *Culturally Specific Pedagogy in the Mathematics Classroom: Strategies for Teachers and Students*, written by Jacqueline Leonard (2008). (For reviews of these two books, see *JUME* Vol. 3, No. 2, and Vol. 2, No. 2, respectively.)

ever, I connect the research on caring relationships to the context of mathematics education. The synthesis provided here serves to illuminate the complex, nuanced, and, at times, overwhelming descriptions of what it means to be a caring teacher in the service of student learning and brings to the surface a general description of a teacher that *cares with awareness*. Given that caring with awareness might be overwhelming for teachers—due to the knowledge and dedication required to promote effective learning, including effective mathematics learning—professional development models are needed that can support teachers in these endeavors. Thus, in conclusion, I consider models of professional development that hold potential for supporting mathematics teachers in developing teacher–student relationships reflective of caring with awareness; models that can support mathematics teachers in particular in building caring relationships with students to insure their success in mathematics.

To explore the intersections between theories of care and culturally relevant pedagogy in conceptualizing the nature of effective teacher–student relationships, I begin by providing an overview of care theory, connecting it explicitly to the theory of culturally relevant pedagogy. In connecting the two theories, I then describe four key components of the nature of effective teacher–student relationships: racial, cultural, political, and academic.

### Care Theory: An Overview

Building on the work of Carol Gilligan (1982), a pioneer of care theory, Noddings (1984) modified and expanded Gilligan’s work, considering its application to education (1992). Care theory posits, in part, that the development of caring teacher–student relationships is central to supporting students’ academic achievement (Noddings, 1984, 1992). Caring is necessarily relational, requiring both the teacher and the student to contribute to the formation of a caring relationship (Noddings, 1992). Such relationships involve the caregiver (e.g., the teacher) understanding the cared for (e.g., the student) from the perspective of the cared for (Mayerhoff, 1971), which Noddings (1984, 1992) calls “engrossment” and “motivational displacement.” Engrossment, or “feeling with” another person, is different from imagining what one would feel in someone else’s situation (Noddings, n.d.). Engrossment is not about one’s own feelings. Rather, it occurs when the teacher is completely taken up with what the student is feeling—when a teacher accepts students’ feelings and acknowledges the relevance of students’ experiences. For Noddings (1984, 1992), this acceptance suggests the other critical component of a caring relationship, motivational displacement, where “When I care...my motive energy flows toward the other and perhaps, although not necessarily, toward his ends...I allow my motive energy to be shared; I put it at the

service of the other” (1984, p. 33). During motivational displacement, the caregiver puts aside her or his needs in order to care for the other individual.

Noddings (1992) also argues that caring relationships are incomplete unless the student actively receives the care: “No matter how hard teachers try to care, if the caring is not received by students, the claim ‘they don’t care’ has some validity” (p. 115). Dialogue, then, is an important factor in contributing to the development and maintenance of caring relations, because it allows students to connect to the teacher through language and shared experience. Through dialogue, teachers seek to understand students’ relationships to the subject matter, including what the students’ goals are and ways that the subject matter may connect with students’ lives (Noddings).

Another component of a caring relationship is that such relationships develop inter-subjectivity, where teachers and students develop shared interests and common understandings of each other (Tharpe, Estranda, Dalton, & Yamauchi, 2000). Goldstein (1999) refers to the attainment of inter-subjectivity as a teacher’s creation of a “shared intellectual space” with their students. In the process of achieving inter-subjectivity, teachers work to share with students their understanding of a concept while simultaneously working to understand students’ understanding(s) of a concept. Goldstein and Tharpe and colleagues contend that through the process of jointly negotiating the meaning of concepts and activity, teachers demonstrate care for individual students and for the subject matter itself.

Finally, caring relationships require confirmation. Noddings (1992) claims that for caring teachers, confirmation is an act of affirming or encouraging the best in others, and confirmation of students comes through establishing trust. Caring teachers accomplish confirmation by developing relationships with students and knowing their students well. To know students well in this context means to realize what they are trying to become or to see what they are really striving for.

It is important to note—if not obvious by the complexity implied in the aforementioned descriptions—that caring is a process; it is something teachers do rather than something teachers feel. To care is to take an ethical stance. Goldstein (1998) expresses care as a moral stance that leads to ethical action:

An action rather than an attribute, a deliberate moral and intellectual stance rather than simply a feeling—offers a powerful alternative to the conceptions of caring currently shaping our thinking about the term. (p. 18)

Moreover, caring requires personal contact and varies according to individuals and situations: “Two students in the same class are roughly in the same situation, but they may need very different forms of care from their teacher” (Noddings, 2002, p. 20). Noddings (1992) also notes the “difficulties of knowing another’s nature, needs, and desires when one party holds power over the other or is a member of a group that has historically dominated another” (p. 3). In this

way, culturally relevant pedagogy provides a way to think about teacher care with respect to supporting teachers in successfully addressing the different educational and cultural needs of students from various ethnic and racial backgrounds.

### *Care Theory and Mathematics Classrooms*

Some research on caring teacher–student relationships has also been situated in the context of mathematics education, documenting that caring teacher–student relationships can support students’ learning of mathematics and engagement with mathematics. For example, when secondary school students perceived that their mathematics teachers cared for them, they reported increased effort (Muller, 2001; Stipek, 2006). Additionally, for students deemed by their teachers to be at-risk of dropping out of high school, when they perceived their teachers cared for them they performed better in mathematics compared to “at-risk students” who did not perceive that their teacher cared for them (Muller, 2001). In other words, the perception that their teacher cared, listened to them, and expected them to succeed mitigated the negative effects of having been deemed at-risk in the first place. Yet, little is known about how the nurturance of caring student–teacher relationships might be involved in the process of mathematics learning. Recent work by Hackenberg (2010a, 2010b) stands alone in its examination of caring in relation to mathematics teaching and learning. In her work, Hackenberg moves beyond descriptions of mathematics teachers as caring in the general sense to develop a model of *mathematical caring relations*. She conceives of mathematical caring relationships as a teacher engaged in a dynamic process with students “harmonizing with students’ schemes and energetic responses to mathematical activity...making interpretations of students’ current schemes and operations and basing interaction on those interpretations so that tasks posed to students are sensible to them (2010a, p. 59). If a teacher struggles with harmonizing with a student’s schemes, she likely experiences difficulties in posing appropriate mathematical challenges that will further the student’s learning (Hackenberg, 2010b). What makes these caring relationships mathematical, then, is the cognitive decentering required of a teacher; “the construction of new mathematical ways of operating that fit with the teacher’s experience of the students” (p. 266). Nonetheless, Hackenberg’s work does not explicitly consider issues of race, culture, and power.

### *Care Theory and Race*

Descriptions of care theory, outlined by Gilligan (1982), Noddings (1984, 1992) and others, has been criticized as being “colorblind” (Beauboeuf-Lafontant, 2002; Thompson, 1998, 2003) in that care theorists “fail to acknowledge and address the Whiteness of their political and cultural assumptions” (Thompson, 1998, p. 524). Colorblindness is the inability (or unwillingness) to acknowledge that

race matters, that racism exists, and that race and racism have a significant influence on whether and how students are successful in school (Bonilla-Silva & Forman, 2000). A colorblind approach is problematic because it ignores the fact that inequity and discrimination are current issues and are not easily remedied by simply ignoring race (DeCuir & Dixson, 2004; Ladson-Billings & Tate, 1995). Students' learning opportunities may be hindered when teachers fail to consider their own and their students' racial background and instead adopt color- and culture-blind beliefs and practices (Milner, 2007).

Thompson (1998) draws on ethical positions grounded in Black women's lives and Black feminist ethics to reexamine and reinterpret early work on the ethics of care. Her work, in part, suggests that caring is not limited to the private sphere as is often implied with early work on care theory. Rather, caring in the Black community is as much public as it is private. Caring for a student is viewed as both a collective and individual responsibility. The emphasis of care is on cultural, communal, and political solidarity; an emphasis shared by not only the teacher but also by the community, extended family, and/or the local Black church. Furthermore, "caring means bringing about justice for the next generation and justice means creating the kinds of conditions under which all people can flourish" (p. 529). Thompson (2004) argues that caring teachers implement anti-racist curriculum, reject a colorblind approach, and instead embrace "colortalk": "Acknowledging racial identity, culture, racism, and racial privilege as factors that shape and color experience, colortalk recognizes that a person's color is a significant dimension of her or his experience" (p. 26).

Similarly, Beauboeuf-Lafontant (2002, 2005) provides a racial critique of care theory by describing characteristics exhibited in the pedagogy of exemplary African American, female teachers as a means to expand what it means to "care" for students and in turn illuminate the colorblind descriptions of previous work. She describes "womanist caring" as consisting of three characteristics: an embrace of the maternal, political clarity, and an ethic of risk. Embrace of the maternal requires teachers to treat all children as if they are her or his own and to meet children's particular needs by whatever means necessary. This embrace involves sharing responsibility with families and communities to ensure that all children succeed. Womanist caregivers also demonstrate political clarity, or the awareness that society and schools are structured to ensure differential success for different groups of students. In other words, oppression and inequity are systematic rather than individually motivated. Thus, caring teachers are not simply promoting an agenda that seeks to reward everyone. Rather, because teachers are affiliated with schools, they acknowledge they are products of (and culprits within) an inequitable system and that caring must involve action and commitment to fight injustice. This action and commitment is the ethic of risk—caring teachers' commitment to understand, confront, and transgress oppressive structures.

*Care Theory and Culturally Relevant Pedagogy*

Education theories aimed to support work toward equity in mathematics education need to attend to how issues of race, culture, and power intersect with and inform our understanding of effective mathematics education (DiME, 2007). Theories of culturally relevant pedagogy serve this purpose, providing models of classroom practices that consider explicitly issues of race, culture, and power. Furthermore, these theories have documented the nature of teacher–student relationships that support students’ mathematics learning in ways that intersect with and expand descriptions within theories of educational caring.

Culturally relevant pedagogy is fundamentally about the academic success of students of color. It is a “pedagogy that empowers students intellectually, socially, emotionally, and politically by using cultural referents to impart knowledge, skills, and attitudes” (Ladson-Billings, 1994, pp. 17–18). As a bridge between students’ home and school cultures, culturally relevant pedagogy facilitates teachers incorporation of students’ cultural values, experiences and perspectives into the curriculum (Gay, 2002). A necessary requirement of effective culturally relevant pedagogy is students’ academic success. Culturally relevant pedagogy builds on students’ home cultures as a means to foster success in school. Moreover, it “uses student culture in order to maintain it and to transcend the negative effects of the dominant culture” (Ladson-Billings, 1994, p. 17). Culturally relevant teachers exhibit an ethic of care, enable their students to think critically about their world and its injustices, and equip students with the skills to change it (Ladson-Billings).

**Care, Race, Culture, Politics, and Learning Mathematics**

In this section, I look across the literature on care theory and culturally relevant pedagogy that portrays teachers exhibiting an ethic of care to illuminate complex and nuanced descriptions of what it might mean to be a caring teacher for all students in as specific a way as possible. The sub-sections that follow serve to illuminate the specific practices caring teachers engage in and to highlight four key components (or categories) of the nature of effective teacher–student relationships: racial, cultural, political, and, inherently, academic. These categories are not mutually exclusive nor are they separated in an effort to be prescriptive. Rather, these categories serve to organize the literature under consideration. It is also important to note that throughout the discussion, I draw primarily on literature that describes pedagogical practices and caring relationships as reflected (or not) in the schooling experiences of Black and Brown children. In doing so, I do not intend to essentialize the lived experiences of Black or Brown children or to suggest that the discussion pertains only to Black or Brown children. But rather to

draw on this literature to make a strong case for caring with awareness for mathematics teachers (and teacher educators)—a caring with awareness that I believe benefits all children in learning and doing mathematics.

### *Caring Teacher–Student Relationships and Race*

As noted previously, caring relationships reject a colorblind approach and instead embrace colortalk, “acknowledging racial identity, culture, racism, and racial privilege as factors that shape and color experience” (Thompson, 2004, p. 26). In mathematics education, Martin’s (2006) work illustrates one way to conceptualize caring teachers. Caring teachers are identified according to the degree to which they value, devalue, or challenge African American students’ status, identity, and prior knowledge. How White teachers in particular interact with African American learners, in the name of “engrossment” or “motivational displacement” (Noddings, 1984, 1992), often from colorblind frames (Thompson, 1998), places limits on teachers’ expectations of who their students are and who they can become (Martin, 2000), a key component of a caring teacher-student relationship.

Outside of mathematics education, Siddle Walker’s (1993) work on the construct of interpersonal caring garnered from her examination of how caring functions successfully for African American students suggests how caring relationships attend explicitly to issues of race. In this work, caring teachers were explicit with their students about what was expected of them as Black children, exposing racist structures in society by revealing and examining White privilege in a myriad of ways. Explicit discussions of how race functioned in school and in society facilitated students’ academic success. Beck and Newman’s (1996) work examining caring at a high school also shows that teacher caring was made evident to students when teachers acknowledged racial differences, confronted actual and potential tensions, and involved students in developing solutions and strategies.

Drawing on her work with Puerto Rican girls in middle school, Rolón-Dow (2005) proposes “critical care praxis” as a conceptual framework to examine teachers’ relationships with students. Critical care asks teachers to center issues of race and ethnicity in their relationships with students. Rolón-Dow found that “deficit-based, racialized caring narratives were often articulated when teachers used their own experiences as well as the historical experiences of White immigrant groups as ideological foundations” (p. 104). Thus, her work asks teachers to get to know students well—to gain a historical understanding of students’ lives—in order to improve teaching and learning. The teachers described in Rolón-Dow’s work suggest that caring teachers examine and confront their race- and ethnicity-based assumptions about the students’ family lives, as one participant notes: “[To] understand from where they come...you need to watch very closely. You need to listen very closely before you attack. And it’s so easy for all of us to attack. But

you have to understand from where they come” (p. 103). This understanding and listening facilitates teachers in seeing that separating the homes of students from the school can serve as a barrier to the development of caring relationships. Further, caring teacher–student relationships require teachers to elicit and respond to counter-stories about race and ethnicity present in students’ communities. For example, for the Puerto Rican middle school girls in Rolón-Dow’s research, counter-stories existed that pointed to how structural and institutional factors influenced the care given to particular students and to how important racial and ethnic factors are in caring for students not only personally but also as members of multiple communities. Caring teachers seek out, listen for, and attend to such counter-narratives.

The research of Rolón-Dow (2005) also serves to caution teachers and teacher educators that “dominant stock stories” of care can serve to normalize racism. For example, building on a belief that students’ homes are uncaring places, teachers “care” by saving students from those homes rather than joining parents in collaborative efforts to care. This misguided care is similar to the “White missionary paternalism” that Martin (2007) describes where teachers conceptualize their work as saving African American children from themselves and their culture (p. 13). Instead, caring teachers work to understand African American students’ experiences with mathematics *as* African Americans (Martin, 2000, 2006, 2007), serving to support the development of positive mathematical and racial identities.

#### *Caring Teacher–Student Relationships and Culture*

A caring relationship requires that the teacher understand the student from the perspective of the student; that she or he becomes “engrossed” in the student and experiences “motivational displacement,” putting her or himself at the service of the student (Noddings, 1992; Mayerhoff, 1971). Further, caring relationships require confirmation (Noddings, 1992), where the teacher identifies a student’s potential and encourages its development. Without knowing students well, one cannot see what the student is really striving for, or what their true potential may be. Thompson (1998), in critiquing the colorblindness of care theory, suggests that caring relationships are about knowing the whole child, which includes knowing her or his situation. Knowing a student’s situation requires, but is not limited to, knowing something about the student’s home life, cultural history, and the political situations that she or he confronts outside of the classroom. Thompson argues, “teachers cannot tap into and develop the possibilities latent in students’ cultural knowledge if they do not understand students’ cultural situations” (p. 536).

In a study examining the role of peer influences in urban high school students’ academic success in mathematics (primarily, African American and Latina/o students), Walker (2006) linked students’ academic behaviors and success to

a historical tradition of intellectual networks in their communities. These findings point to another way to think about the notion of understanding students' situations. Walker argues that to fully value the cultural contributions that students bring with them to school, teachers must understand "the depth of students' academic communities and the ways in which students and their peers foster intellectual communities among themselves" (p. 68). Thus, knowing students well and explicitly attending to issues of culture means recognizing, valuing, and drawing on students' historical and current traditions of community support and engagement.

Of course knowing students well and understanding their situations is not a simple endeavor, as "two students in the same class are roughly in the same situation, but they may need very different forms of care from their teacher" (Noddings, 2002)—determining the "different type" of care students might need can be facilitated by recognizing students' definitions of care. Suarez-Orozco, Rhodes, and Milburn (2009) examined the academic achievement of immigrant youth and found that while Chinese and Mexican students reported the lowest levels of relational engagement at school, these levels were not similarly predictive of academic performance. Suarez-Orozco and colleagues surmised that students from different cultural backgrounds might have different cultural expectations of school-based supportive relationships, or different expectations and conceptions of caring relationships. Similarly, Owen and Ennis (2005) argue that understanding and articulating the cultural meaning of caring for different members of a school is one essential component in supporting disenfranchised students. Knowing students well by explicitly attending to issues of culture, then, includes understanding students' cultural conceptions of caring and their expectations for caring relationships.

Yet another way teachers might work to know students well that requires explicit attention to issues of culture is through building commonalities with students. Christensen (2000) suggests forging a "curriculum of empathy" with students where the curriculum itself provides opportunities for students (and, I would argue, teachers) to learn about one another and to develop empathy. Sharing stories and engaging in a curriculum of empathy requires students and teachers to look beyond their own world and share the lives of others. As a result, both teachers and students learn how to go beyond stereotypes to look for and reflect on common feelings, ideas, and facts. Ladson-Billings (1994) describes a similar characteristic of culturally relevant teachers where small acts of civility and kindness (e.g., giving students a birthday card) reflect teachers "consciously working to develop commonalities with all the students," working not just to make "idiosyncratic and individualistic connections with certain students, [but working] to assure each student of his or her individual importance" (p. 66).

Developing commonalities with students is a complex endeavor, as illustrated by the work of Cooper (2002), who examined effective White teachers of Black children juxtaposed with literature on effective Black teachers. Cooper notes that the White and Black teachers were similar in their emphasis on respect for students' culture and community. A key difference, however, was that Black teachers evaluated their behaviors by what the community wanted whereas White teachers evaluated their behavior by personal views and experiences. Cooper warns that White teachers' seeming inability to "view the schools as places that reflect the greater communities' ideals" (p. 159) could encourage Black students in such classrooms to receive messages that inadvertently contrasted with their community norms, placing the students' success in jeopardy. Cooper's work highlights the importance for teachers to build connections with students across cultural lines; constant dialogue about how students receive that care is critical.

Working to know students well and make connections with students requires teachers to extend themselves beyond the classroom walls to build caring relationships with students (Howard, 2003; Valenzuela, 1999). In Rolón-Dow's (2005) research exploring the schooling experiences of Puerto Rican girls, one frustration of the girls was that many of their teachers did not know them beyond interactions within the classroom, often leading to teachers' misconceptions about students and making it difficult for students to feel cared for in significant ways. Rolón-Dow argues, "building relationships of authentic care must move beyond making assumptions about who students are... [to] create sustained interactions that allow students to share their perspectives of how ethnicity, social class, and gender dynamics affect their daily lives" (p. 106).

An important aspect required of teachers reaching beyond the classroom walls to build caring relationships with students is the explicit rejection of deficit perspectives of students and their communities. Deficit perspectives place the blame of school failure upon individual students and families based on beliefs about certain cultural, racial, or economic characteristics of a group (Valencia, 1997). A caring teacher, however, does not attach failure to the student, but to themselves, searching within to find a more effective way to reach students (Collier, 2005). Caring teachers explicitly reject deficit-based thinking and embrace the belief that students from culturally diverse backgrounds are capable learners (Ladson-Billings, 1994). Confronting deficit perspectives is not an easy task. In my examination of teachers learning to teach mathematics for social justice, I found that though the teachers worked hard to create mathematics lessons that confronted deficit ideologies about academic achievement, their conversations about their own students could often be interpreted as manifestations of a deficit perspective (Bartell, 2011; Gau, 2005). Howard (2003) contends that to become culturally relevant (and thus to reject deficit-based thinking about students) teachers need to engage in honest, critical reflection that includes "an examination of

how race, culture, and social class shape student's thinking, learning, and various understandings of the world" (p. 197). A teacher's care manifests in a willingness to reflect on her or his attitudes toward diverse students; this reflection communicates a sincere commitment that the teacher has toward students' success.

#### *Caring Teacher–Student Relationships and Politics (and Power)*

Gutstein (2006), in describing his efforts to read and write the world with mathematics with his students, notes that the quality relationships he built with his students were explicitly political; relationships where teachers take up "active political stands in solidarity with students and their communities about issues that matter" (pp. 132–133). Caring relationships keep issues of injustice, and efforts to fight for justice, at the forefront. In caring for students, teachers provide students opportunities to conduct political analyses of the world, share their own political understandings with students, and support students in their struggles to change unjust conditions in their lives. In turn, as Gutstein demonstrates, students learn mathematics with understanding, develop mathematical power, and grow in their ability to understand complex aspects of society, where mathematics becomes a necessary and powerful analytical tool that students use to study their sociopolitical existence.

Similarly, Ladson-Billings (1994) describes culturally relevant teachers as those who are not only concerned with ensuring that their curriculum reflects the lived experiences of their students but also recognize the importance of taking a critical look at curriculum content. This critique includes teachers seeing themselves as vital to the process of helping students identify oppressive elements in society and in schools and arming students with the knowledge, skills, and critical attitudes necessary to struggle against those oppressive elements (Ladson-Billings). In the context of mathematics education, Ladson-Billings provides the example of Ms. Rossi, a sixth-grade teacher who found an old set of algebra books so that she could engage her students in algebra, even though it was beyond what the district's curriculum required. Ms. Rossi recognized the gate-keeping role mathematics, and in particular algebra, plays with respect to students' opportunities to learn and she was explicit with her students about why she was making the choice to teach them algebra.

Beauboeuf-Lafontant (2002, 2005), in similar ways to Gutstein (2006) and Ladson-Billings (1994), argues that caring teachers have "political clarity," or recognize the existence of oppression in their students' lives and seek to use their own status to encourage students to understand and undermine those oppressive conditions. Beauboeuf-Lafontant, as previously noted, describes womanist caring as consisting of three characteristics: an embrace of the maternal, political clarity, and an ethic of risk. Of relevance here are the latter two, political clarity and an ethic of risk. Political clarity is "the recognition by teachers that there are relation-

ships between school and society that differentially structure the successes and failures of groups of children” (Beauboeuf-Lafontant, 2002, p. 77). Teachers that care do so with the recognition and explicit discussion with students of the fact that society marginalizes some children and not others. Furthermore, caring teachers demonstrating political clarity not only recognize and discuss these structures but also actively work against them. The latter of the two is the ethic of risk—teachers’ commitments to understand, confront, and transgress oppressive structures. Caring relationships are explicitly political in that they are, in the work of the aforementioned scholars, acts of solidarity with students emerging from shared commitments to equity and justice.

Caring teachers must also work to confront unequal power relations *within* their classrooms, working to neutralize status differences so that all students can achieve. As they build caring relationships with students, caring teachers work to understand whether and how each student has status with respect to engagement with the mathematics so that the teacher might support students with lower status in gaining access. Boaler’s (2006, n.d.) work with mathematics teachers at Railside using complex instruction (Cohen, Lotan, Scarloss, & Arellano, 1999) speaks to this idea. A key approach of mathematics teachers using complex instruction is that of assigning competence. Here teachers work explicitly to raise the status of students who may be of lower status by bringing to the class’s attention—through statements, questioning, or asking students to share—something of intellectual value students have said or done. If a student is not expected to be competent, she or he may not be asked for an opinion or asked about her or his thoughts related to the mathematics. Railside students in classrooms where teachers enacted complex instruction started at significantly lower levels of achievement when compared to students at two schools where more traditional mathematics teaching, without the use of complex instruction, took place, but within 2 years they were achieving at significantly higher levels and demonstrated more positive views about mathematics.

#### *Caring Teacher–Student Relationships and Academic Achievement*

A primary objective of caring teacher–student relationships is students’ academic achievement. Noddings (1984) notes that caring teachers have two responsibilities: “to stretch the student’s world by presenting an effective selection of that world with which she is in contact and to work cooperatively with the student in his struggle toward competence in that world” (p. 178). This cooperation includes understanding students’ relationships to the subject matter in order to build and extend their knowledge (Noddings, 1992). Goldstein (1999) argues that caring relationships are a central part of a student’s intellectual growth and development. She contends that a teacher’s use of scaffolding to match the demands of a task to students’ abilities in an effort to maximize their chances of success is a key

aspect of a caring relationship. In short, learning and caring are inextricably entwined. In the context of mathematics education, Hackenberg's work (2010a, 2010b) demonstrates that caring mathematical relationships support a teacher's ability to choose appropriate problems to pose for students based on students' previously demonstrated mathematical reasoning, in turn supporting students' mathematical learning.

Theories of culturally relevant pedagogy are helpful in showing that supporting students academically includes "learning how and where to help students connect what they know to what they do not know and how to use prior skills to learn new ones" (Cochran-Smith, 1999). This support entails teachers learning to meet students where they are in order to help students participate meaningfully in the knowledge development process (Ladson-Billings, 1994). Caring teachers strive to discover the knowledge students bring to the classroom, and explore and utilize that knowledge to support student achievement (Ladson-Billings). Caring relationships are also academic in that teachers expect and demand academic excellence from all of their students. Vasquez's (1988) characterization of a teacher as a "warm demander" is illustrative of this notion. He conceptualized a warm demander as a teacher who will not lower standards for students and who will reach out to students and provide needed assistance to help them reach high standards. Similarly, Kleinfeld's (1972) work with teachers of Eskimo and Native American students, recently relocated to urban settings, suggests caring teachers demand academic excellence from their students. Kleinfeld summarizes:

The essence of the instructional style which elicits a high level of intellectual performance from village Indian and Eskimo students is to create an extremely warm and personal relationship and to actively demand a level of academic work which the student does not suspect he can attain. Village students thus interpret the teacher's demandingness not as bossiness or hostility, but rather as another expression of his personal concern, and meeting the teacher's academic standards becomes their reciprocal obligation in an intensely personal relationship. (p. 34)

Furthermore, Ladson-Billings (1994) describes what I would call a caring classroom culture as one not focused on individual achievement, but rather focused on collective growth and liberation. Students care about one another's achievement, teach each other, and take responsibility for one another's learning: "Psychological safety is a hallmark of each of these classrooms... [students] realize that the biggest infraction they can commit is to work against the unity and cohesiveness of the group" (p. 73).

Students in such classrooms, then, need an opportunity to collaboratively practice care (Noddings, 1992). Students learn what it means to support and teach one another, to care, and they experience the contribution to community that occurs when "all are in this together" (Ladson-Billings, 1994). This classroom cul-

ture resonates with what Boaler (2006, n.d.) terms *relational equity*, or classroom practices that facilitate students treating each other with respect and responsibility. In the successful story of Railside high school, students learned to respect students from different cultural, social, gender, and ability groups. Boaler argues that the respectful relationships students developed with one another were made possible by the particular mathematics approach used by teachers—an approach that valued students' many different perspectives, strategies, and contributions as they collectively solved mathematics problems. The teachers at Railside worked hard to create classrooms that approached learning as a collective, rather than an individual, endeavor. They reminded students to work together as a group, modeled respectful behavior for students, taught students to take responsibility for one another's learning, and reinforced this message with their grading practices. As noted previously, this resulted in significant mathematics learning for students.

#### *Summarizing the Four Components*

In the discussion of the four components—racial, cultural, political, and academic—I illuminated that when looking to understand more clearly and specifically what it means to build a caring relationship with one's students, in particular in an effort to promote equity in mathematics education, a complex, nuanced, and seemingly overwhelming description emerges. Teachers that care with awareness know their students well mathematically, racially, culturally, and politically. They work to understand and make connections with students' cultures and communities; help students develop positive racial, cultural, and political identities; reflect critically on their own assumptions and practices about students' cultures and communities, including rejecting and confronting deficit and colorblind perspectives; and labor to neutralize status differences within and beyond the classroom walls. Teachers that care with awareness engage in discussions of race and racism with their students, listen for counter-narratives that might help shape a more caring bond between them and their students, and stand in solidarity with students. They use the knowledge gained from all of these avenues to support students' academic success, accessing students' existing mathematical and cultural knowledge and scaffolding tasks based on where students are to engage them meaningfully in building new mathematics knowledge. Similar to Freire's (1998) conception of "armed love," care should be authentic, based on respect, consideration of issues of race, culture, and power, and focused on providing students with both an academically rigorous and liberatory, self-empowering education.

### **Toward a Model of Professional Development**

I could stop here, having laid out a theoretical map of sorts on what it means to build caring relationships with awareness for all students, within and across

lines of race, culture, and power, to support equity in mathematics education. But as mathematics teacher educators, we must also consider how teachers might begin to operationalize these conceptualizations of care in the daily practice of teaching mathematics and, more specifically, consider professional development models that can support teachers in translating theory into practice.

One would be hard-pressed to find a teacher that would say they do not care for their students. This is likely due to the fact that teachers often consider care to be a personality trait or a warm, fuzzy feeling that one has toward others, rather than an ethical stance (Goldstein, 1998, 1999). The work of care theorists synthesized in this article, however, serves to illustrate that caring is more than a warm feeling; it indeed is a complex, nuanced concept. Teacher education and professional development therefore need to support teachers in developing this “deliberate moral and intellectual stance” (Goldstein, 1998, p. 18).

Some work in teacher education suggests that narrative methods are an important way to teach teachers about care (see, e.g., Rosiek, 1994; Young, 1998). Additionally, supporting teachers in attending to individual students with awareness is important in the development of an ethic of care (Rabin, 2008). In an examination of preservice teacher education courses with a commitment to care ethics, Rabin found that teacher educators’ use of questions to direct novice teachers’ attention to their learners’ needs and course activities that focused novice teachers’ attention on listening to students’ stories with awareness were instrumental in developing their ethic of care and informing related changes in their practice. Furthermore, explicit discussion about how the “larger structural restraints—which these novice teachers may meet in the often-overburdened urban schools where they teach—may thwart their efforts at constructing a caring practice” (p. 11) supported teachers in navigating these constraints and prioritizing a focus on what a student’s story suggests about what is required for her or his care. Moreover, Rabin notes that one particular assignment that engaged novice teachers in articulating and reflecting on a dilemma of practice with respect to one student “stood out as an opportunity for the novice teachers ... to construct a relational moral stance” (p. 6).

With respect to research in mathematics education, little published work documents professional development models effective in supporting teachers in developing caring relationships with their students in the ways described here. One particular model that I believe holds promise focuses teachers on dilemmas of practice involving an individual child (see, e.g., Rabin, 2008), serving as an orienting experience not only with respect to that child but also with respect to the teachers’ mathematics pedagogy.

Foote’s (2008, 2009, 2010) research on designing, facilitating, and examining a study group that engaged teachers in exploring the mathematical thinking and in- and out-of school experiences of an individual child is one such model

that holds promise and can inform future research. Each of the six teachers in the study group—all White, female teachers, working at the same elementary school—were asked to choose an African American child they believed was struggling in mathematics as their “target” student. Participants were specifically asked to choose an African American learner “to minimize issues of essentializing based on comparisons across cultural groups of students” (Foote, 2010, p. 44). Participation in the study group consisted of teachers taking an in-depth look at their target child, gathering specific information to share with the group for feedback. Teachers shadowed their target child in a school setting, conversed informally with the target child to learn more about the activities she or he enjoyed outside of school, and collected samples of the child’s work in mathematics. At the same time, the children’s parents took photographs of their child demonstrating competence, participating in household routines (i.e., cooking or grocery shopping), engaging in activities the child found interesting, and engaging in activities that involved mathematics or attention to number. Between teachers’ first and second study group presentations, they met with their target child’s parent to learn about the child’s out-of-school experiences and to learn more from the parent about the child’s strengths, competencies, and interests.

Results of Foote’s (2008, 2009, 2010) work demonstrate that this model supported teachers in reaching beyond the mathematics classroom into children’s home and community and in moving them from seeing their children’s home environments as problematic in some way to instead viewing children’s home environments as supportive. For one teacher in particular, this experience and the knowledge gained about her target child supported her in changing her classroom practice to build on the child’s interests and support his learning of mathematics. Additionally, these experiences supported the teachers in developing strong, or stronger, relationships with their students. Three of the teachers in particular “talked passionately about the strong relationships they had forged with their target students” and the deep commitment that they felt for them in ways that “positioned them to be more effective teachers of those children” (Foote, 2010, p. 55). Furthermore, the teachers not only connected with their target child but also developed open channels of communication with the parents of all of their children in an effort to learn more from children’s parents about how best to support their learning.

The results of such professional development opportunities suggest that teachers with these experiences begin to develop caring teacher–student relationships, particularly with respect to caring relationships that center on issues of culture. This work extended beyond classroom walls, supporting teachers in confronting deficit views they had about children’s home environments and facilitating the adaptation of one teacher’s mathematics classroom practices to better service a child’s learning needs.

In spite of the connections teachers forged with these target children, explicit discussion of issues of race, which one might expect to surface given that these were White teachers working with African American children, was less salient. While the researcher attended to issues of race in that the White teachers were asked to select African American students as “target” students, explicit discussion around this idea did not take place. Perhaps the fact that issues of race did not surface is reflective of our national tendency to be colorblind or colormute (Pollack, 2004). In any case, professional development models that aim to support teachers in caring with awareness for all students to insure their learning of mathematics must directly address and attend to issues of race. I now turn to another model of professional development that supported teachers in reflecting on a dilemma of practice with an individual child as an orienting experience, but also brought to the forefront discussions of race and its intersection with mathematics teaching and learning.

In their work supporting mathematics teachers in using children’s thinking to guide instruction, Battey and Chan (2010) draw on the work of Franke and Chan (2009) to describe a multi-year professional development program that moved from a focus solely on students’ mathematics thinking to one that also explicitly grappled with issues of race in mathematics classrooms. This progression took place over the course of 3 years where teachers engaged in not only more “traditional” professional development meetings but also where Battey, Chan, and other project researchers were in teacher’s classrooms and schools on a weekly basis engaging in informal conversations around mathematics teaching and learning. These project researchers labored to not only develop individual teacher’s practice but also to use what they learned to be individual teachers’ strengths to foster collaboration among teachers. This history is important as the teachers and Battey and Chan built a community, forming trusting relationships with one another that allowed for teachers to present dilemmas of practice in a safe environment.

Battey and Chan (2010) posit that one outcome of their ongoing work with teachers is that teachers began to pay “attention to individual students, created environments that met individual students’ specific needs, and supported different kinds of participation in relation to mathematics” (p. 142). This attention to individual students, coupled with the creation of a teacher community over time, laid a foundation for Battey and Chan, as professional developers and education researchers, to begin to challenge deficit discourses arising for individual teachers as they paid attention to the achievement of students of color in different ways. In these individual conversations, teachers often began by describing the ways in which African American students were lacking, rather than focusing on evidence of their mathematical understanding. At these moments, project researchers interjected, asking questions about what these African American students *did* know.

When framed in this way, teachers recognized the skills their African American students had, considered ways to build on these skills, and in turn confronted their deficit assumptions. Specifically, in describing one teacher, they note: “As the year went on, the teacher created more opportunities for the three African American students to share, showing her and the other students that these children were mathematically capable” (p. 145). In this context, a focus on an individual child in the classroom served to alter teachers’ stance in a way more reflective of an ethic of care, which in turn informed their mathematics teaching practice.

What is also important to note about this professional development program is that these kinds of interactions with individual mathematics teachers supported Battey and Chan (2010) in addressing deficit notions within the entire community of teachers; engaging mathematics teachers in discussions of “labels” placed on students and exposing damaging metanarratives that often frame African American children in specific ways with respect to being doers (or not) of mathematics. Situated within this broader discussion, they engaged teachers in similar discussions as those that occurred in individual interactions, reframing the issue to one of focusing on what students can and are doing. This shifting attention to what students can do “allows for some of our relationships to begin to address issues of student participation, success, and classroom practices that support the achievement of students of color” (p. 149).

### **Concluding Thoughts**

Although additional research is needed about professional development that can support teachers in operationalizing caring with awareness, particularly with students across racial and cultural lines, this article serves as a first step in wading through the complex, nuanced, and seemingly overwhelming theoretical knowledge base that can be useful in informing mathematics teaching. A model of professional development that begins to emerge from these examples is one that focuses on individual student’s mathematical thinking and, in particular, on what mathematics students do know and what their specific competencies are. These models leverage teachers’ dilemmas of practice with individual children to foster the development of caring teacher–student relationships that explicitly attend to issues of race, culture, and power. This focus on an individual student also serves as an orienting experience for teachers, not only with respect to that one child but also with respect to their practice, supporting teachers in rejecting deficit assumptions about students and instead working as caring teachers to learn about and address students’ specific learning needs.

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