

CULTURALLY RESPONSIVE TEACHING & THE BRAIN:

A REPORT FROM ANN'S

RACIAL JUSTICE IN MATH EDUCATION COMMITTEE

Between May 2022 and April 2023, ANN's Racial Equity in Math Education Committee met monthly to discuss and reflect on Zaretta Hammond's book, *Culturally Responsive Teaching & the Brain: Promoting Authentic Engagement and Rigor Among Culturally and Linguistically Diverse Students*. Sixteen ANN members participated in our reading group, from 11 different states, with an average of seven members in attendance at each meeting.

We wrote this collaborative article to reflect on and share some of what we've learned from the book and in discussion with each other over this past year. To be clear, this is not a book review or a lesson in racial equity in adult numeracy. If you want to learn more about the why and how of these ideas, we encourage you to read the book (and to join the ANN Racial Equity in Math Education Committee). We are using three questions to guide our committee's work and as the lens for our reflection: (1) Where does racial inequity show up? (2) How does it affect our students? (3) How can we disrupt it?

Where does racial inequity show up in our math classes?

The short answer is everywhere.

It shows up in who's in our adult basic math classes—students are disproportionately Black and/or Indigenous People of Color (BIPOC), and in who is teaching the classes—predominantly white women and men. The fact that adult education students are disproportionately Black and Latinx reflects the inequity in the K-12 educational system. There is also an inequity between adult education funding and K-12 funding.

It shows up in low expectations for students and in assumptions teachers make about what students "should" know and what experiences they "should" have. Hammond (2015) describes the cycle like this: "Teachers underestimate what disadvantaged students are intellectually capable of doing. As a result, we postpone more challenging and interesting work until we believe they have mastered 'the basics.' By focusing only on low-level basics, we deprive students of a meaningful or motivating context for learning and practicing higher order thinking processes." This becomes a self-fulfilling prophecy for students who, in turn, disengage and internalize the idea that they can't do math.

It shows up when students are taught not to think and to only memorize steps and procedures, and then are perceived as not working hard enough or caring about education when they do not retain material or can't apply it to a different context.

It shows up in the implicit biases of teachers, not only in terms of low expectations, but in the ways that we perceive and interpret the behaviors of our students, especially those who come from a different cultural background.

It shows up in a teaching model and curriculum that lifts up the dominant culture and doesn't make space for diverse ways of sense-making, learning, and communicating.

It shows up in standardized testing that assumes a background based on the privileged experience of the dominant white culture and in funding that is tied to outcomes measured in terms of those standardized tests.

How does racial inequity affect our students?

Many of our students are thrust into educational spaces they have learned to mistrust, carrying the weight of stereotype threat, microaggressions, and macroaggressions.

Low expectations, and the language of low expectations, can shift to internalized low expectations within adult students. This leads them to believe they are not math people and that they cannot do math. This deeply-held belief causes them to become defensive, to build walls, to hide their shame, and ward off perceived threats.

Students are not able to perform their best or learn when they are stressed, feeling threatened or disrespected, or experiencing amygdala hijack. They are not able to focus on learning when they're focused on survival. They do not feel free to learn or hopeful about their learning. They feel out of place in the math class.

They carry the burden of living in a racist society and the effects of racial trauma. "The brain experiences social pain – not connecting with others or being rejected by them – in the same way it experiences physical pain." (Hammond, 2015)

How can we disrupt racial inequity in our classes?

We can disrupt racial inequity in three broad ways: 1) being warm demanders, building learning partnerships through trust and holding students to high expectations, 2) being explicit about growing a classroom culture and learning environment that is nurturing, that embraces creativity, identity, play and struggle, and (3) expanding our perception and deepening our understanding of what culturally responsive teaching is.

We can humanize our students and see them and treat them as full adult humans and allies.

We can see all our students as brilliant.

We can acknowledge that students have valid reasons for mistrusting teachers. We can remain conscious and sympathetic to students' lack of trust in us.

We can build trust with each of our students. Trust is the inverse of fear. Trust, and not self-esteem, is the goal of affirming and validating our students.

We can demonstrate to students that we are trustworthy because we trust them.

We can be actively, deliberately, and explicitly inclusive.

We can be explicit about pedagogy that we consider disruptive of racial inequity.

We can honor and value our students' reasoning and sense-making over all things.

We can teach math in a way that comes out of discussions that are accessible to all. We can challenge our students. We can give our students opportunities to struggle and persist in that struggle to a successful conclusion while building their independence and sense of their own capabilities.

We can teach students to expect confusion when learning new things instead of internalizing those feelings as personal failure.

We can learn more and discuss the ways our students have internalized the effects of structural racialization. Students have been taught to blame themselves and to believe that they are bad at math, as opposed to questioning the ways that they have been taught math and analyzing the structural racism of the K-12 educational system and standardized testing.

We can learn more and discuss the ways we have internalized the effects of structural racialization.

We can develop an explicit understanding of our own cultural frames of reference in order to build awareness of our own lens for viewing and interpreting student behaviors. A greater awareness of our own cultural response helps us build space for alternative explanations when reading our students.

We can watch our own language for deficit-based thinking, low expectations, implicit biases, microaggressions, and other messages of un-belonging.

We can expand our perception and deepen our understanding of culturally responsive teaching.

Vocabulary

<i>amygdala hijack</i>	The amygdala is the region of the brain involved in emotions. When the amygdala is experiencing stress, fear or anxiety, it tells the body to release cortisol. Cortisol is a hormone that blocks rational thinking and limits working memory and makes learning incredibly difficult.
<i>culturally responsive teaching</i>	"An educator's ability to recognize students' cultural displays of learning and meaning making and respond positively and constructively with teaching moves that use cultural knowledge as a scaffold to connect what students know to new concepts in order to promote effective information processing. While at the same time, understanding the importance of being in a relationship and having a social-emotional connection to students in order to create a safe space for learning." (Hammond, 2015, p. 15)
<i>deficit-based versus strength-based</i>	From a strength-based perspective we ask questions like, "What are my students' strengths? What do they do well? What can I build on?" A deficit-based perspective might ask, "What are my students' weaknesses? What can't they do? What do I need to fix?"

<i>implicit bias*</i>	Implicit biases are unconscious. We are unaware that we have them and we can't reason them away through introspection. Implicit biases can run counter to our consciously held beliefs and values. For example, a teacher who believes that all students are valuable and capable of learning may be surprised to learn that they call on certain students more often or respond differently to mistakes made by different types of students.
<i>macroaggression</i>	Explicit and overtly racist aggression toward people of a certain race, culture, gender, or other characteristic.
<i>microaggression*</i>	Microaggressions are offshoots of bias. Dr. Derald Wing Sue defines them as everyday verbal, nonverbal, and environmental slights, snubs, or insults, which communicate hostility, alienation, or otherness and target persons based solely upon their being a member of a marginalized group. Microaggressions can be intentional or unintentional.
<i>structural racialization</i>	Structural racialization refers to the ways in which policies and practices within institutions that are supposed to be race neutral in reality create racialized outcomes.
<i>warm demander</i>	The “warm” part means building trust with students by listening to them, valuing their opinions, learning from them, and recognizing that what we consider to be threatening may not be what they consider to be threatening. The “demander” part means holding all students to the same high expectations, checking our implicit bias that some students might not be capable of higher order thinking, not watering down the curriculum for anyone or lavishing praise for completing simple tasks.

* for more resources to learn more about implicit bias and microaggressions in class, visit <https://adulnumeracynetwork.org/Educating-Ourselves>

Coming Up Next

Our committee has decided to learn more, in community with each other, about white supremacy culture. To begin we are reading (1) *White Dominant Culture & Something Different* (a worksheet by Tema Okun) and (2) *White Supremacy Culture from Dismantling Racism: A Workbook for Social Change Groups*, by Kenneth Jones and Tema Okun.

Our committee meets virtually on the third Thursday of every month. 9:00-10:30 Pacific, 10:00-1:30 Mountain, 11:00-12:30 Central, 12:00-1:30 Eastern.

To learn more, including links to the readings mentioned above and how to register for our next meeting, please visit the ANN website:

<https://adulnumeracynetwork.org/Racial-Equity-in-Math-Education-Committee>

Sources:

Hammond, Z. L. (2015). *Culturally responsive teaching and the brain*. Corwin Press.