

Mathematics Teaching and the Pursuit of Justice

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Teachers Development Group • Portland OR

Developing Leaders of Equity and Mathematics in PreK-12 Mathematics Teaching and Learning

March 4, 2020



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“There is power in naming racism for what it is, in shining a bright light on it, brighter than any torch or flashlight. A thing as simple as naming it allows us to root it out of the darkness and hushed conversation where it likes to breed like roaches. It makes us acknowledge it. Confront it.”

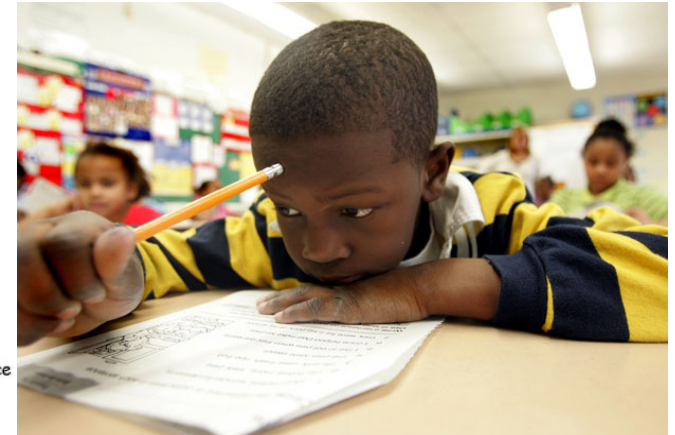


Jesmyn Ward, “A Cold Current,” August 9, 2013;
New York Times <https://nyti.ms/2VO5Fh0>

Why Are Mathematics Classrooms Special Settings for the Struggle for Justice?



What does **carpet time** look like?



Let's look inside a mathematics classroom.



Context

- 27 children, rising fifth graders
 - 10 Black girls, 3 Latinas, 2 white girls
 - 8 Black boys, 2 Latinos, 2 white boys
- Teacher is white woman
- Summer program (mathematics, arts, literacies)
- Diverse histories with mathematics in school, diverse identifications with mathematics as they had encountered it to this point



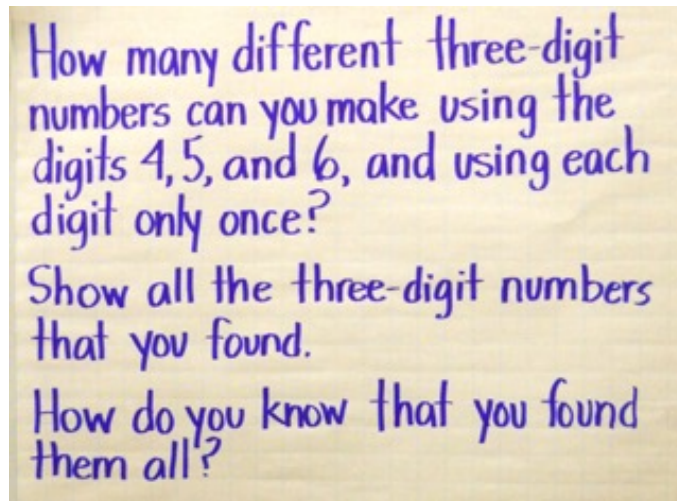
Anayjah										Jamari
Emeline										Jai wan
Lakeya										Dyneisha
Abraham										Toni
Danté										Parker
Ny'ree										Robert
Mariana										Jenna
Marcus										Starr
Dylan										Aniyah
	Brenda	Katherine	Randy	Larry	Ashton	Efrain	Makayla	Ife	Brionne	

How many different three-digit numbers can you make using the digits 4, 5, and 6, and using each digit only once?

Show all the three-digit numbers that you found.

How do you know that you found them all?

Justice in Mathematics Classrooms: Opportunities and Threats



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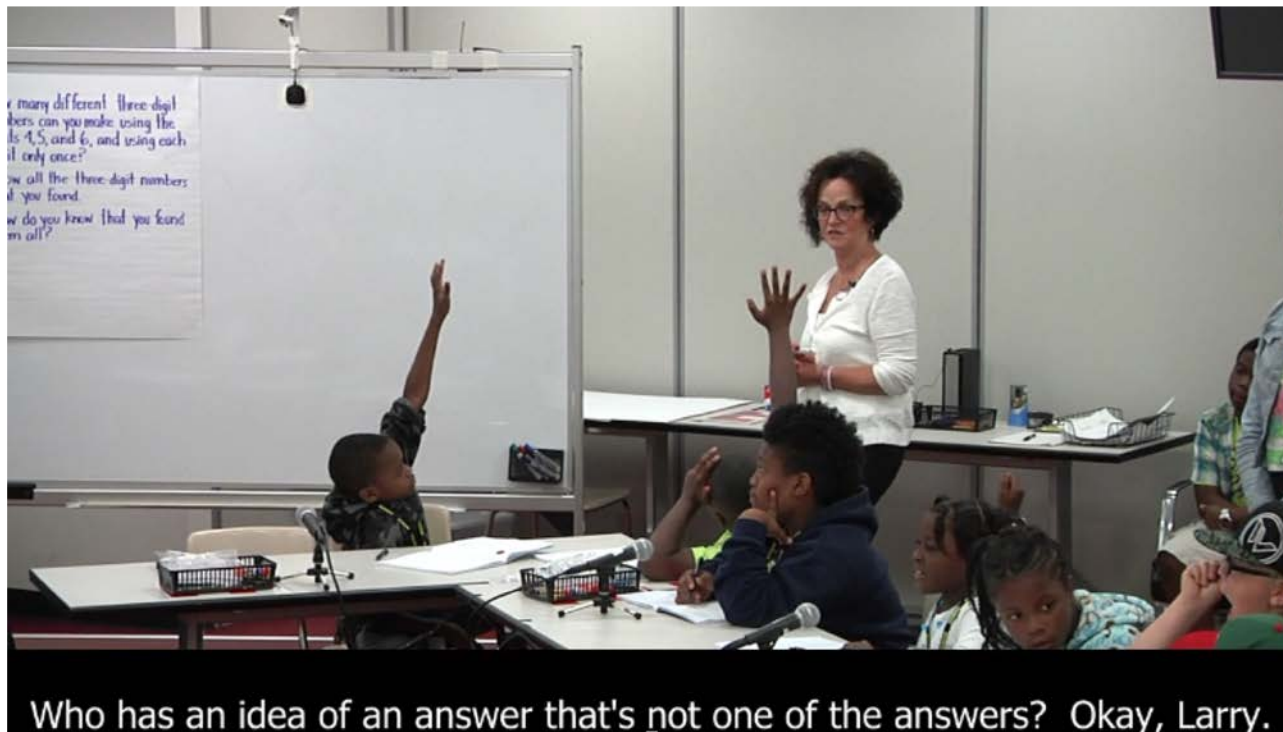
What moments do you notice in which—

- justice is advanced?
- injustice is disrupted?
- injustice is reinforced?

In each case, why and how?

What conception of “justice” and “injustice” underlies your viewing?

Video: Three-Digit Numbers



Justice in Mathematics Classrooms: Opportunities and Threats

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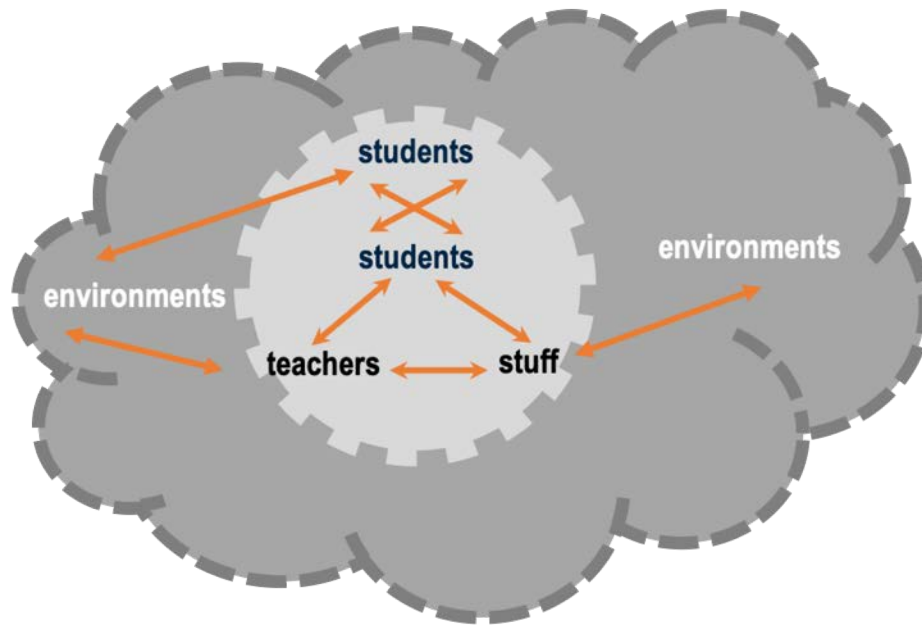
Given that racism is historical and systemic, what is possible to do inside the everyday teaching of mathematics to challenge and disrupt injustice?



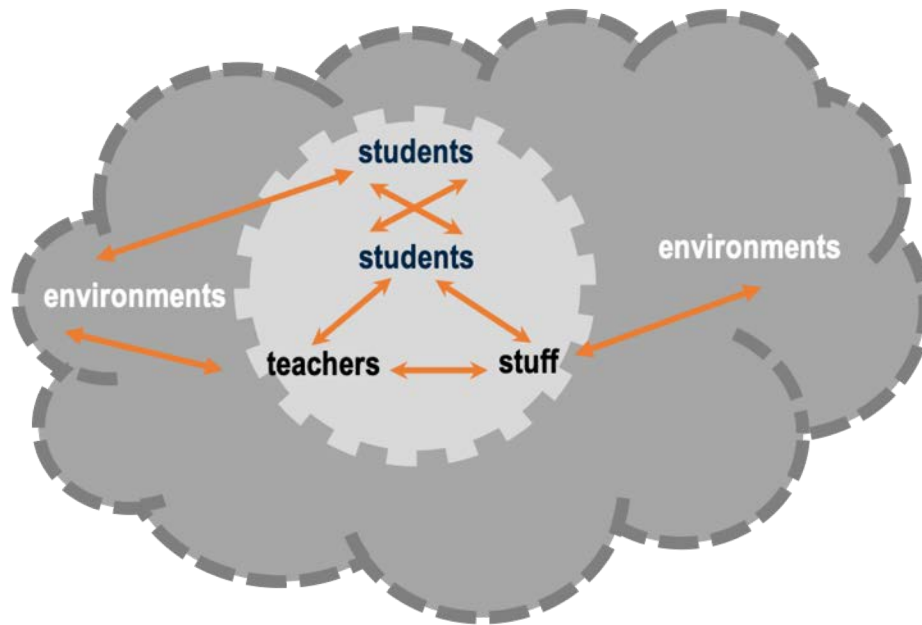
The Unique Potential of Mathematics to Perpetuate—or Disrupt—Injustice

- The history of “mathematics” as white, male, western
- The melding of “intelligence” and mathematics (and the history of “intelligence”)
- Narrow constructions of “mathematics” that uphold these
- The rich resources of mathematics in many communities and cultures
- The power afforded by seeing oneself as “smart” or “good at math”
- The imaginative creative space possible in mathematics, for invention, experimentation, construction, representation, and performance
- The assets of collective work in mathematics

The Permeability of Classrooms



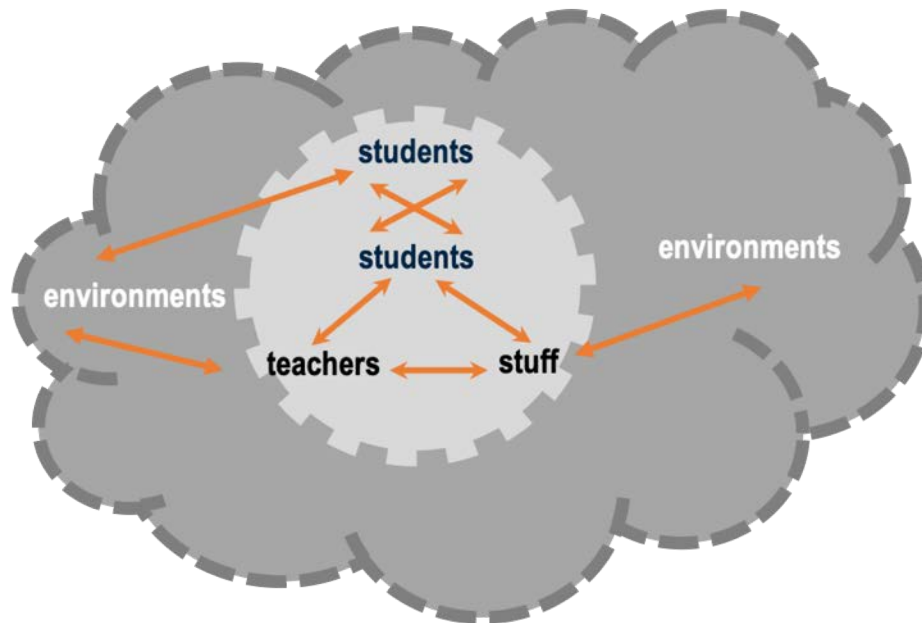
The Permeability of Classrooms



- The curriculum, explicit and implicit
- Norms for behavior, discourse, interaction
- Views of “ability” and competence
- Values

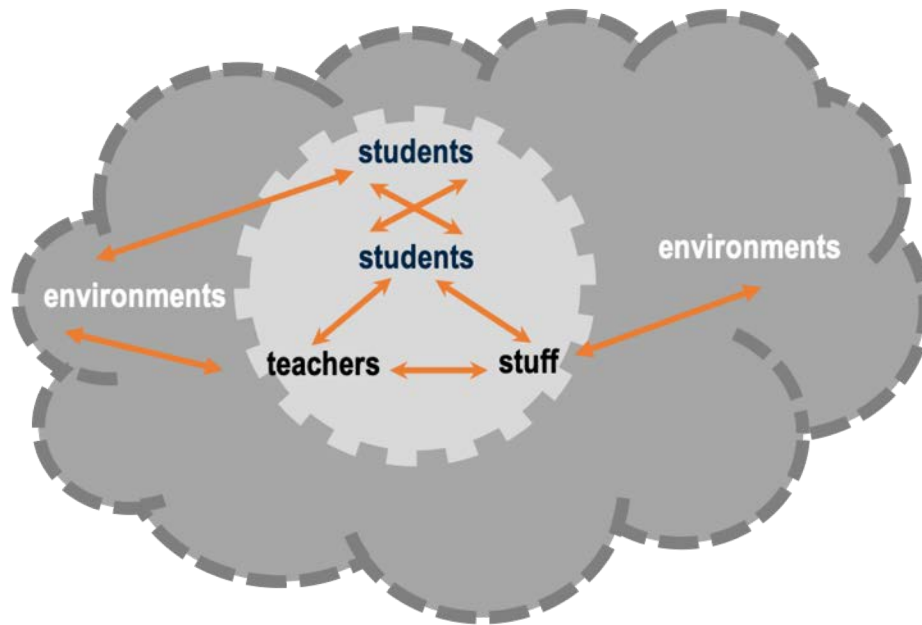
The Permeability of Classrooms

This permeability is both an asset and a source of harm.



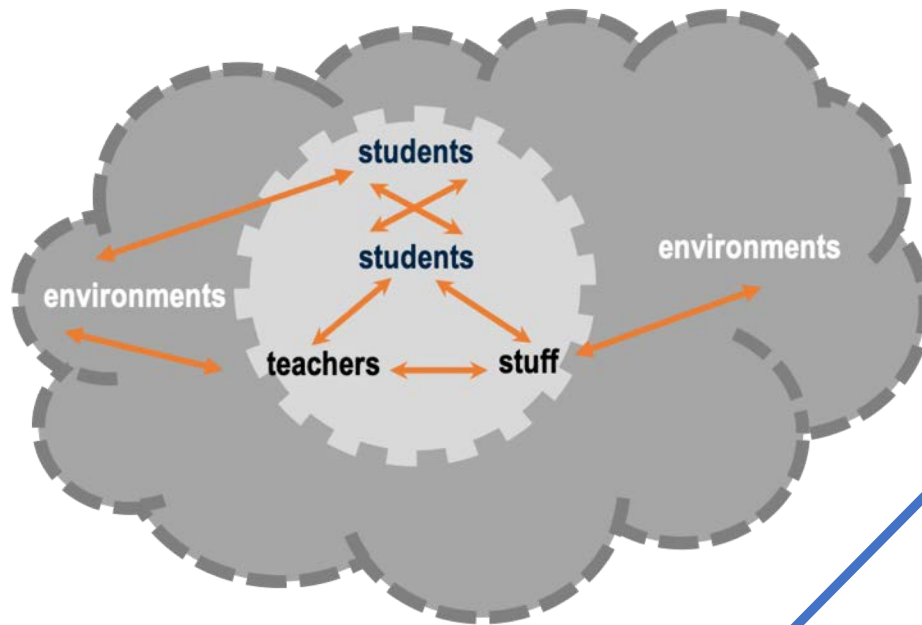
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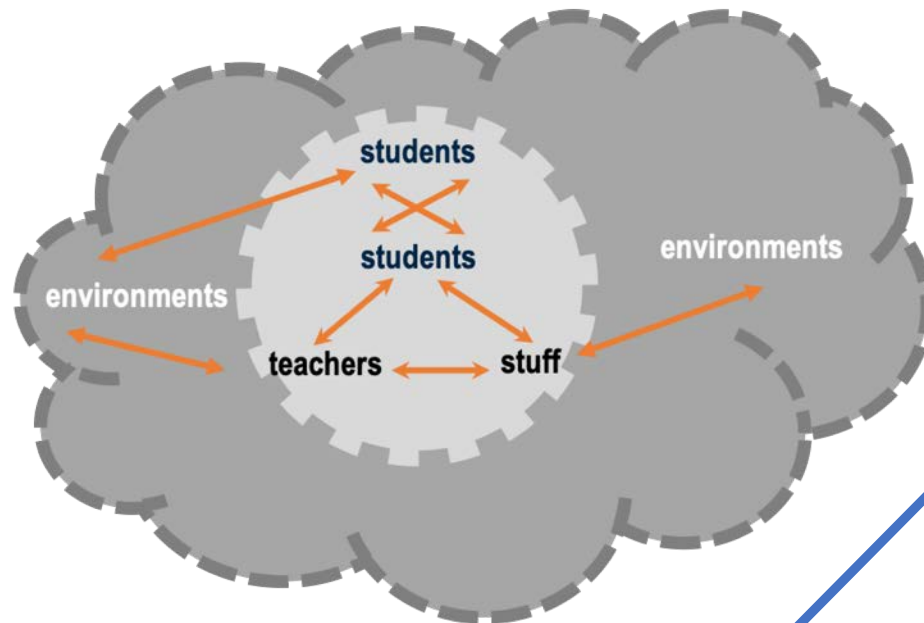


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What is taught and learned

The Permeability of Classrooms

Interactions, relationships

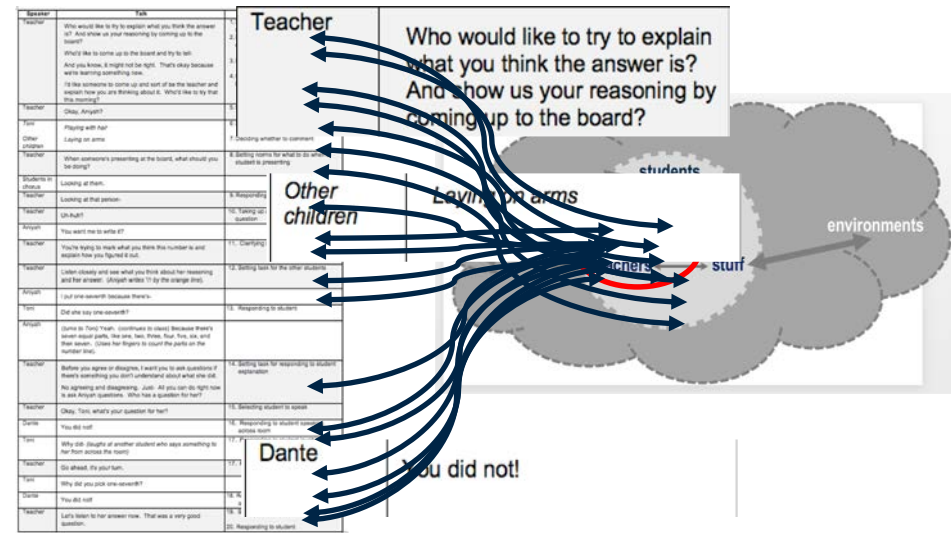


- The curriculum, explicit and implicit
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What is taught and learned

Discretionary Spaces*

- A **discretionary space** is where the next move or comment or question is necessarily determined by the teacher—and not by a policy, a curriculum, or an administrative directive.
- In these discretionary spaces teachers have the power to sustain or disrupt patterns of racism, sexism, ableism, and other forms of oppression and marginalization.
- The dominance of whiteness is pervasive, and underlies everyday habits (Noel, 2018).
- We often **interpret, decide, and act** without even realizing we have discretion to do something different.



*Ball, D. (2018) https://youtu.be/JGzQ7O_SlYY

The Power of Discretionary Spaces in Teaching

DISCRETIONARY SPACES AND THE REPRODUCTION OF INJUSTICE AND RACISM

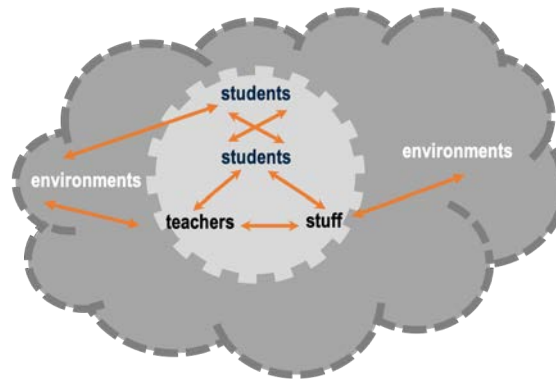
- Carrying out normalized practices and values (about behavior, norms, etc.)
- Perceiving and interpreting Black, Brown, and Indigenous children
- Drawing on normalized views of ability
- Engaging in the relational work of teaching
- Teaching content, and using lessons, projects, assignments

DISCRETIONARY SPACES AS RESOURCES FOR DISRUPTING OPPRESSION AND RACISM

- Disrupting common patterns of punishment
- Perceiving and interpreting Black, Brown, and Indigenous children
- Seeing the brilliance of children of color
- Engaging in the relational work of teaching
- Enacting culturally relevant and sustaining pedagogies
- Co-constructing knowledge
- Partnering with families and communities

Disrupting the Permeation of Systemic Oppression In Mathematics Classrooms

- ❑ Redesign what is taught and learned (curriculum)
- ❑ Change patterns of interaction and norms (classroom environments and discipline)

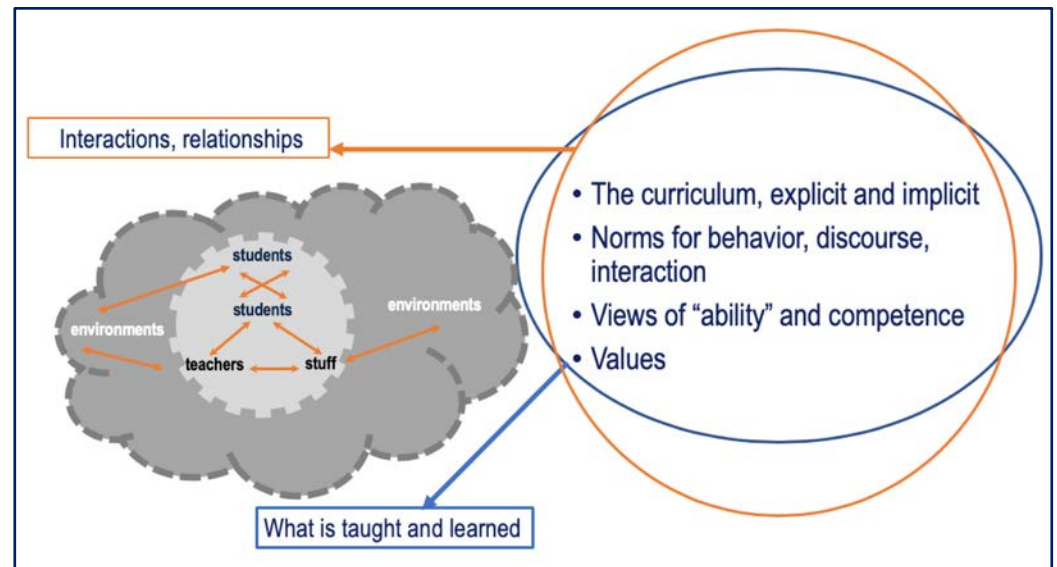


Let's probe the opportunities to work for justice that are too often left invisible in teaching and teacher development.



Three Essential Levers—All Matter

1. Disrupting pervasive control
2. Changing what and who is seen as mathematically competent
3. Creating mathematical learning and spaces that recognize, welcome, and are based on the brilliance of Black and Brown children.

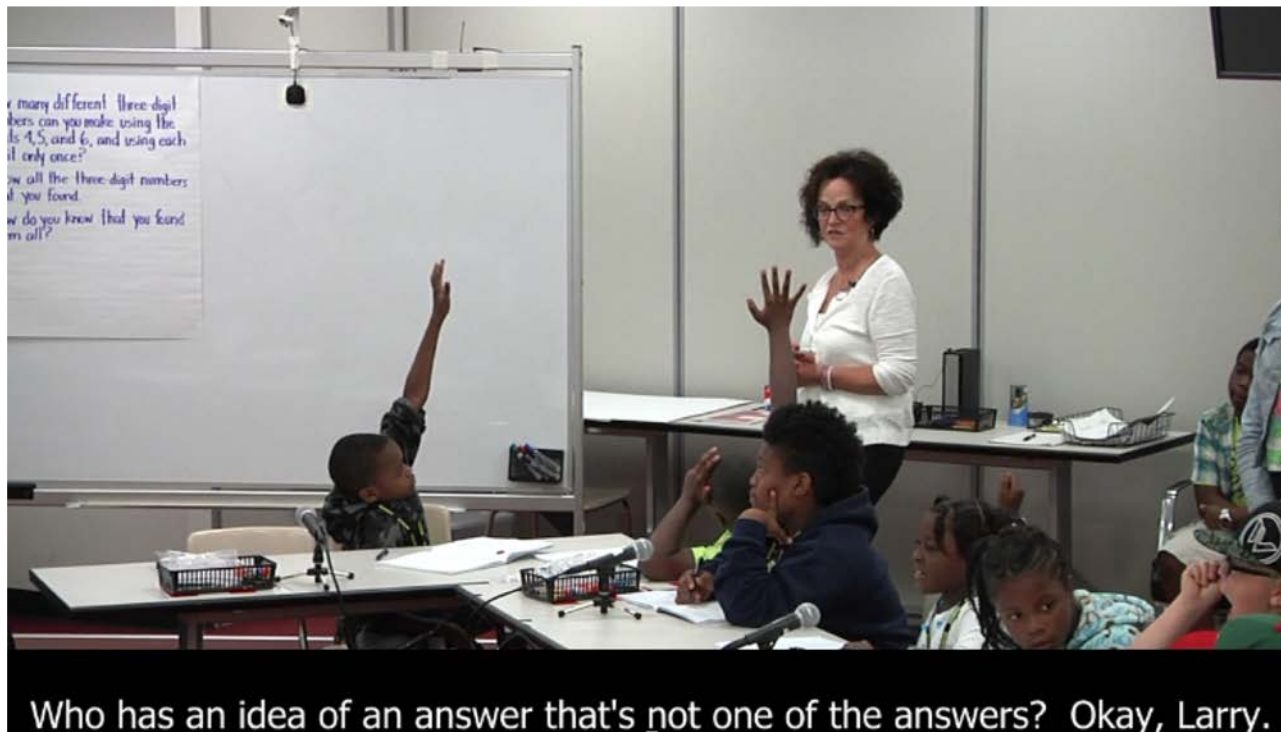


Returning to the Videoclip

At your table, divide up into three viewing foci. Look for examples of or missed opportunities to:

1. Disrupt pervasive control.
 2. Change what and who is seen as mathematically competent.
 3. Create mathematical learning and spaces that recognize, welcome, and are based on the brilliance of Black and Brown children.
- Talk with others at your table who took the same focus. What did you see this time?
 - Talk as a table:
 1. What did you see from your second viewing?
 2. How are the three levers connected?

Video: Three-Digit Numbers



Teaching is Powerful

Teaching either reinforces/reproduces *or* it can avert and disrupt patterns.*

1. AWARENESS OF PATTERNS

- Becoming critically conscious of common patterns of thinking about “ability”
- Understanding one’s own identity and how that shapes one’s assumptions and interpretations
- Understanding that these patterns are historical and embedded in our institutions and systems

2. AVERTING /DISRUPTING PATTERNS

- Consciously NOT following or reproducing the patterns
- Developing specific new habits and practices that counter the patterns
- Strengthening your own mathematical knowledge for teaching

*Goffney (2018)
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Ball, DeFino, Robinson, Wilkes, Willis (2020)



Acknowledging the past and confronting the present, while imagining and working for a different future



Listen to an Example in Action

- <https://youtu.be/wBoF5pFHtDM?t=553>
(9:15 – 12:06)

- [AERA Brown Lecture 2018](#)
- “Disrupting Punitive Practices and Policies: Rac(e)ing Back to Teaching, Teacher Preparation, and Brown”



H. Richard Milner, Vanderbilt University

“Why are Bad Boys Always Black?”

Carla Monroe (2010)

- Pejorative stereotypes of Black males as threatening, aggressive
- Subjective infractions, role of teacher perception
- Teachers’ emphasis on control and more likely to respond more severely than necessary, as if anticipating problem
- What is Jamaal learning?
- What are the white boys in the group learning?
- What are others in the class learning?

Ladson-Billings (2011), “Boyz to men? Teaching to restore Black boys’ childhood”

Countering the Dominant Narratives: Supporting Black Children to See Their Brilliance

The influences of the broader environments start early.

- Discipline disparities for Black students, boys, and students with disabilities are observed as early as pre-K.
- Black preschoolers 3.6 times more likely to be suspended than white children
- 19% of preschool population; 47% of suspensions



Video of Ayaan:
<https://youtu.be/FABMuNDB-gM>

What Would It Take For Ayaan and His Classmates to Thrive?

- When Ayaan goes to school, what will he likely experience?
- Will this build on his positive perspective or cause him to question the truth of his daily affirmation?
- How will other students likely see Ayaan and how might this be helpful or harmful to their own learning?
- How would schools need to change to confirm and build on Ayaan's daily affirmation?
 - School structures
 - Classroom structures, environment, and routines
 - Task selection and use
 - Instructional practices
 - Structures and dynamics of group work

Let's look back, and look ahead, together.



What is Entailed by This Work for Justice?

1. Disrupting pervasive control
 2. Changing what and who is seen as competent
 3. Creating mathematical learning and spaces that recognize, welcome and are based on the brilliance of Black and brown children.
- Each of these involves work at the individual and systemic levels.
 - Each of these requires work on ourselves and what our identities and experiences afford us.
 - Each of us is inevitably working to protect and keep the current system OR deliberately working to interrupt and dismantle the racist, oppressive current system of schooling.
- **This is collective work.**

“We are going to have to take upon ourselves a disciplined and continuing effort, with no real hope that, in our lifetime, we are going to be able to take a vacation from the struggle for justice.”

Rev. James Reeb



Reaching for the possibilities and the power is our collective work.

THANK YOU!

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Credits



Image on slide 2:
John D. & Catherine T. MacArthur Foundation. [Photo of Jesmyn Ward]
Retrieved from <https://www.macfound.org/fellows/1002/#photos>



Image on slide 3:
Photo from “Using reward charts successfully”
Retrieved from <https://raisingchildren.net.au/toddlers/behaviour/encouraging-good-behaviour/reward-charts>



Image on slide 3:
Photo from “8 Common Core Math Standards, Explained [+ Examples],” by Maria Kampen
Retrieved from <https://www.prodigygame.com/blog/common-core-math-standards/>



Credits



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Image from "Rug Rules. Carpet Time," by elaulaconbotas

Retrieved from <https://elaulaconbotas.wordpress.com/2015/12/21/rug-rules-carpet-time/>



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Photo from "Using reward charts successfully"

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Image on slide 3:

Moreno, J.F. Second-grade student reads in preparation for a test (AP photo).

Retrieved from <https://www.thenation.com/article/archive/teachers-and-students-opt-out-defy-testing-machine/>



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Credits



Image on slide 28:

Photo of H. Richard Milner IV

Retrieved from <https://www.aera.net/Events-Meetings/Annual-Brown-Lecture-in-Education-Research/H-Richard-Milner-IV>



Image on slide 34:

Photo of James Reeb. Retrieved from https://en.wikipedia.org/wiki/James_Reeb



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