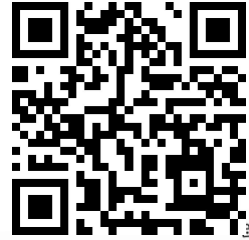


DisCrit Noticing: Theorizing at the Intersections of Race and Ability in Mathematics Education

Cathery Yeh (she/ her/ 她)

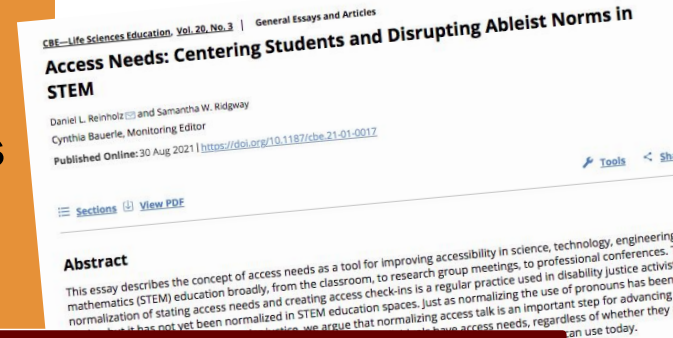
Assistant Professor of STEM Education
Center of Asian American Studies
University of Texas at Austin

Everyone has access needs - needs that we need met in order to be fully present in a given space.
What are your access needs?



Choose:

- Talk to a partner.
- Share here:
<https://tinyurl.com/DisCritNoticingAccessNeeds>
- Share with a post- it or in the Zoom chat.
- Any other way you prefer share!



INTRODUCTION

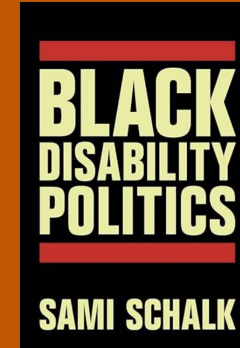
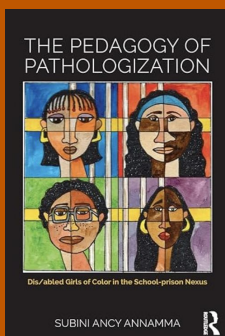
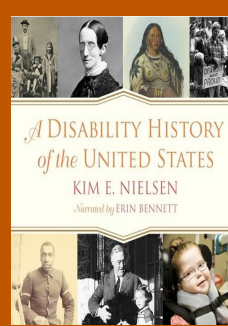
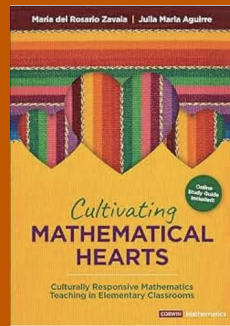
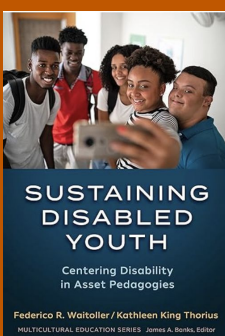
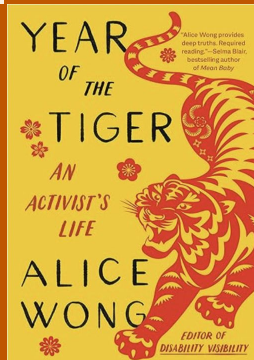
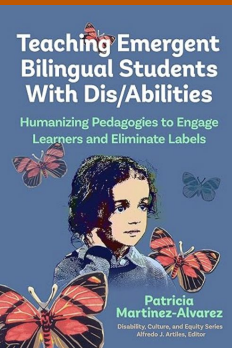
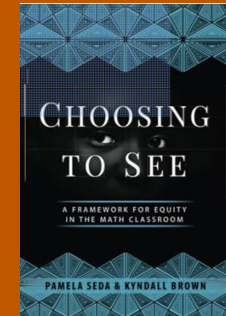
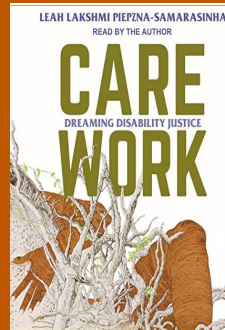
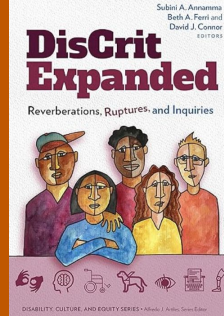
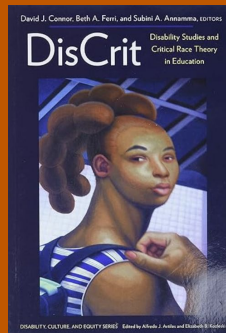
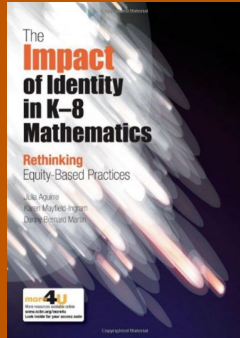
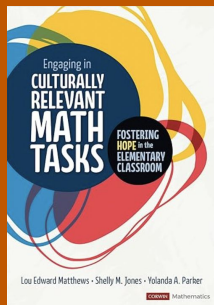
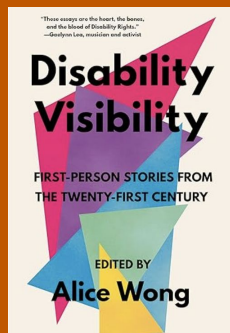
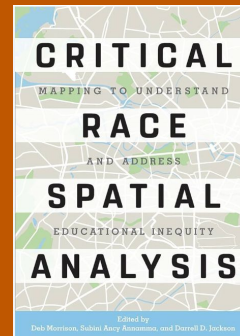
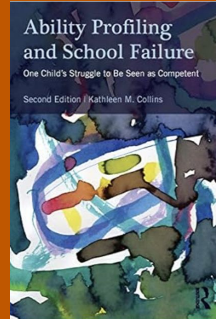
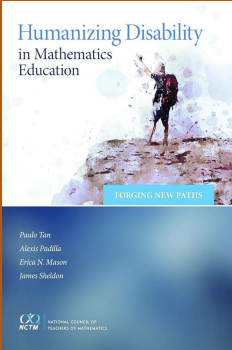
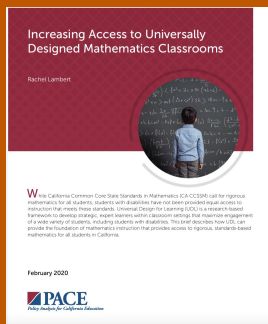
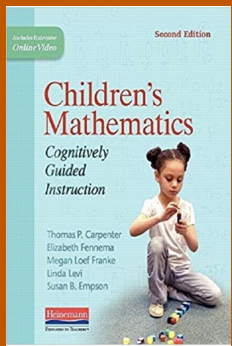
My name is Ricardo, my pronouns are he/him, and I need to have all course materials in plain text for my text-to-speech software. My name is Emile, my pronouns are she/her, and it is important for me to have regular, short breaks in our meetings. My name is Alex, my pronouns are they/them, and my access needs are currently being met.

Challenging the ideology of normal in schools

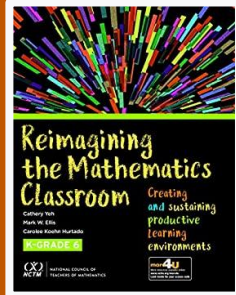
Without explicit attention to **access needs**, we assume there is **only one way** to communicate, to learn, to take part in an activity, which maintain existing structures of power and privilege. “Even teachers of colour typically trained through teacher education programmes often construct students of colour from a deficit perspective, **marking white students as the cultural standard**. [We need] to **challenge monolithic views of normalcy** by valuing students who differ from the norm, including consideration of race, ability, language and cultural practices.” p. 1279

Common Ableist Assumptions about Participation

- That everyone has the same access and experience with technology ***
- **You must sit completely still in order to listen. *****
- **If you aren't looking at the instructor you are not paying attention. *****
- That we all speak the same language as the presenter
- **Not speaking/answering questions means that you are not participating ****
- **Everyone has the same processing speed *****
- **That reading out loud is a good participation exercise*****
- **That taking time to mull over a question is seen as not knowing the answer *****
- **That people can process a question from the instructor quickly/same pace ******
- **That cold calling on people is good/supports participation ***
- **Presentations should be done standing up. *******
- **Precision of language shows intelligence ****
- The need to correct other's language. *

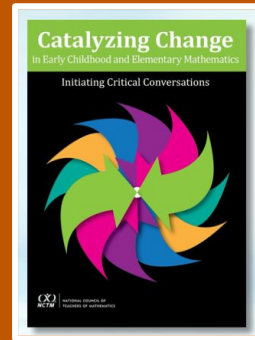


Learning in and from School Communities



Reimagining the Mathematics Classroom

- 23 teachers in bilingual, suburban, urban, and inclusive settings, K–6
- Focus: “What are components of a powerful math learning environment that supports and sustains the identities of all students?”



Catalyzing Change Series

- Critical conversations to meet critical challenges:
 - (1) Broaden the purpose of school math;
 - (2) Dismantle structural obstacles;
 - (3) Implement equitable instructional practices; and
 - (4) Organize mathematics along a common shared pathway.



School-Research Partnership

- Co-teaching in inclusive and self-contained classrooms to examine shifts in math curriculum, pedagogy, and assessment practices to broaden student access and agency.

Guiding Questions

1. **Racializing Ability, Disabling Race**

What are the ways in which both race and ability are socially constructed and interdependent?

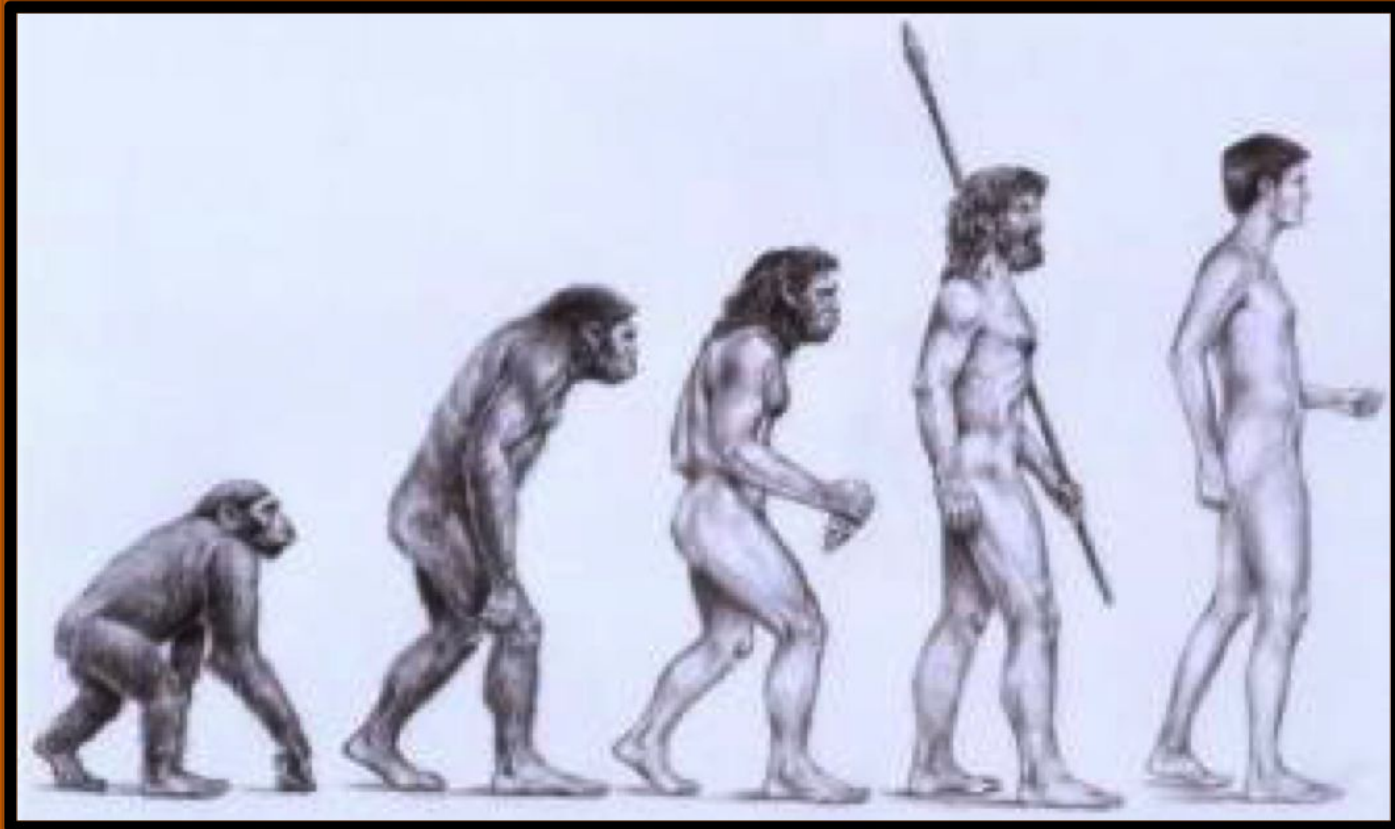
2. **Seeds of Refusal- DisCrit & Dysfunctional Ecology**

What can we learn from those before and around us to imagine forms of math education beyond “appeals to white imaginaries and sensitivities” (Martin, 2019)?

3. **DisCrit Noticing - Highlight one example of this work**

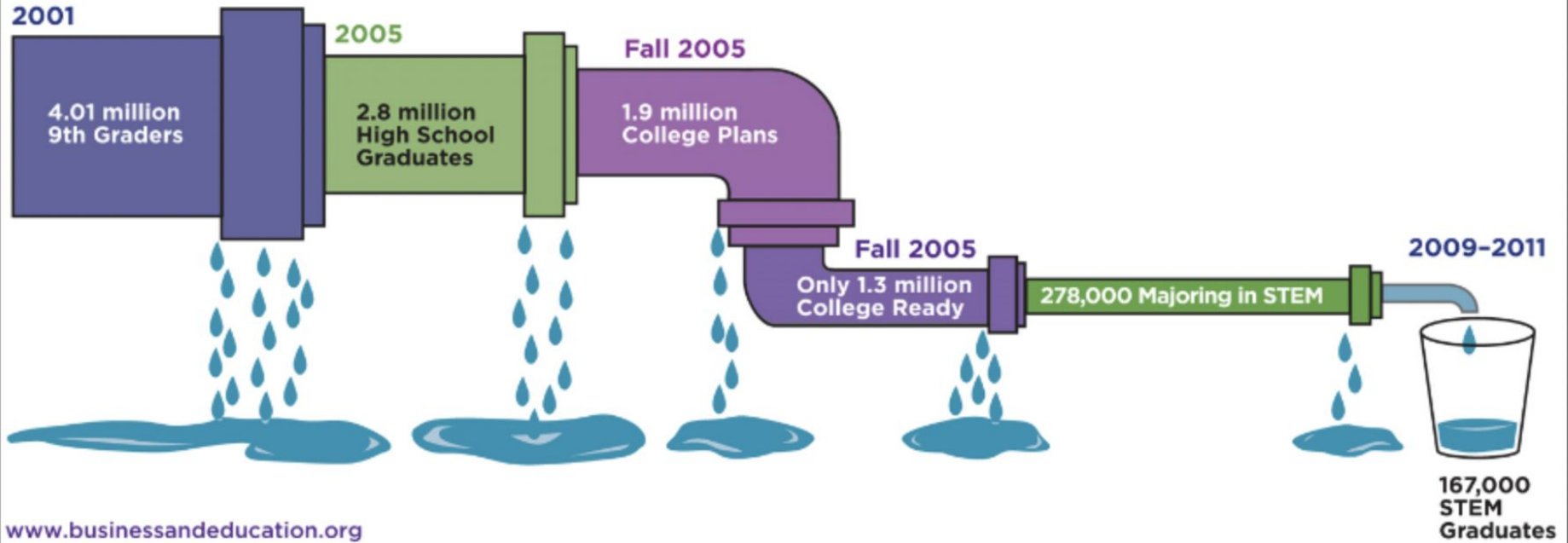
What guidance does it offer for mathematics education and for each of us in our roles as teacher educators, and researchers?

“Human” Evolution



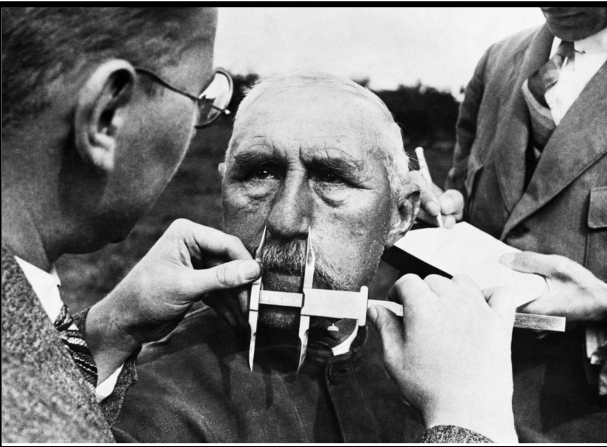
I. Racializing Ability, Disabling Race

A Leaking STEM Pipeline



I. Racializing Ability, Disabling Race

Historical context for inclusion, labels, and ability construction through time



Hulton-Deutsch Collection / CORBIS / Corbis via Getty Images



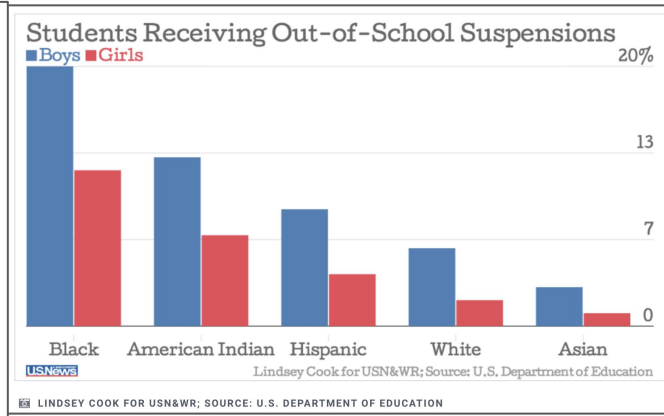
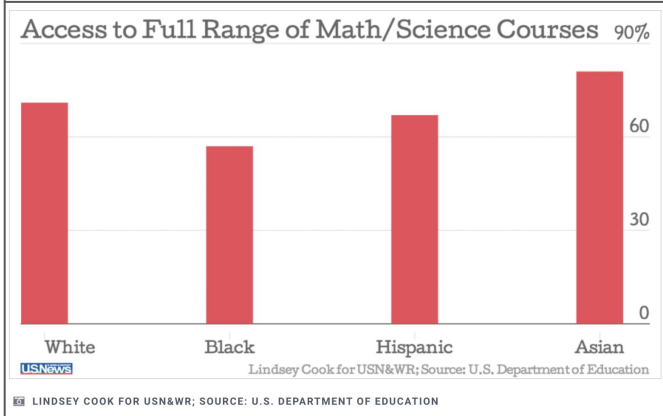
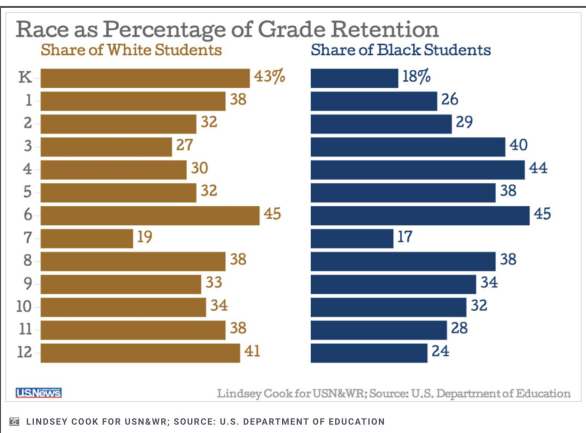
Immigration officials medically examine Chinese boys detained at Angel Island in San Francisco Bay [FoundSF/National Archive]



Segregated schooling in El Monte, CA via Tropics of Meta: Historiography for the masses.

I. Racializing Ability, Disabling Race

History is of the past and present.



Formal Schooling, Same Inequalities

Guiding Questions

1. **Racializing Ability, Disabling Race**

What are the ways in which both race and ability are socially constructed and interdependent?

2. **Seeds of Refusal- DisCrit & Dysfunctional Ecology**

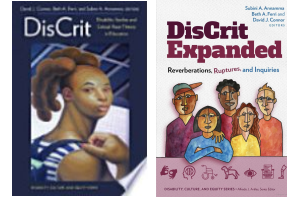
What can we learn from those before and around us to imagine forms of math education beyond “appeals to white imaginaries and sensitivities” (Martin, 2019)?

3. **DisCrit Noticing - Highlight one example of this work**

What guidance does it offer for mathematics education and for each of us in our roles as teacher educators, and researchers?

Disability Critical Race Theory (DisCrit) Tenets

(Annamma et al., 2013)



1. Focuses on ways **racism and ableism circulate interdependently**, often in neutralized and invisible ways, to uphold notions of normality.
2. Values **multidimensional identities** and troubles singular notions of identity
3. **Emphasizes the social constructions of race and ability** and recognizes the material and psychological impacts of being labeled as raced or disabled, which sets one outside of western cultural norms.
4. **Privileges voices of marginalized populations, traditionally not acknowledged.**
5. Considers **legal and historical aspects of dis/ability and race** and how both have been used separately and together to deny rights of citizenship
6. **Recognizes Whiteness and Ability as Property** and that gains for people labeled with disabilities have largely been made as the result of **interest convergence** of White, middle-class citizens.
7. **Requires activism** and supports all forms of **resistance**

II. Seeds of Refusal- DisCrit, Dysfunctional Ecology, & Disability Justice

What can we learn from those before and around us to imagine forms of mathematics education beyond “appeals to white imaginaries and sensitivities” (also see Martin, 2019)?

Pedagogy of Pathologization in Mathematics Education

Hyper-Labeling

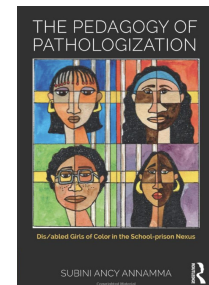
- Dis/ability as Deficiency (Lee, 2015)
- “At risk”, “Behind”, “Lazy” (Gutierrez, 2008)
- (Mis)taken Identities (Gholson & Wilkes, 2017)
- Racial Narratives and Racial Hierarchies (Shah, 2017, 2019)

Hyper-Surveillance

- Segregated Learning Environments (Davila, 2015; Tan & Kastberg, 2017)
- Exclusion by Inclusion (Calabrese Barton & Tan, 2020; Martin, 2019; Tan et al. 2022)

Hyper-Punishment

- Subpar Curriculum (Sheldon, 2013)
- (Mis)Taken identities (Gholson & Wilkes, 2017)
- Debilitating Teaching Practices (Irizarri et al., 2021)



II. Seeds of Refusal- DisCrit, Dysfunctional Ecology, & Disability Justice

What can we learn from those before and around us to imagine forms of mathematics education beyond “appeals to white imaginaries and sensitivities” (also see Martin, 2019)?



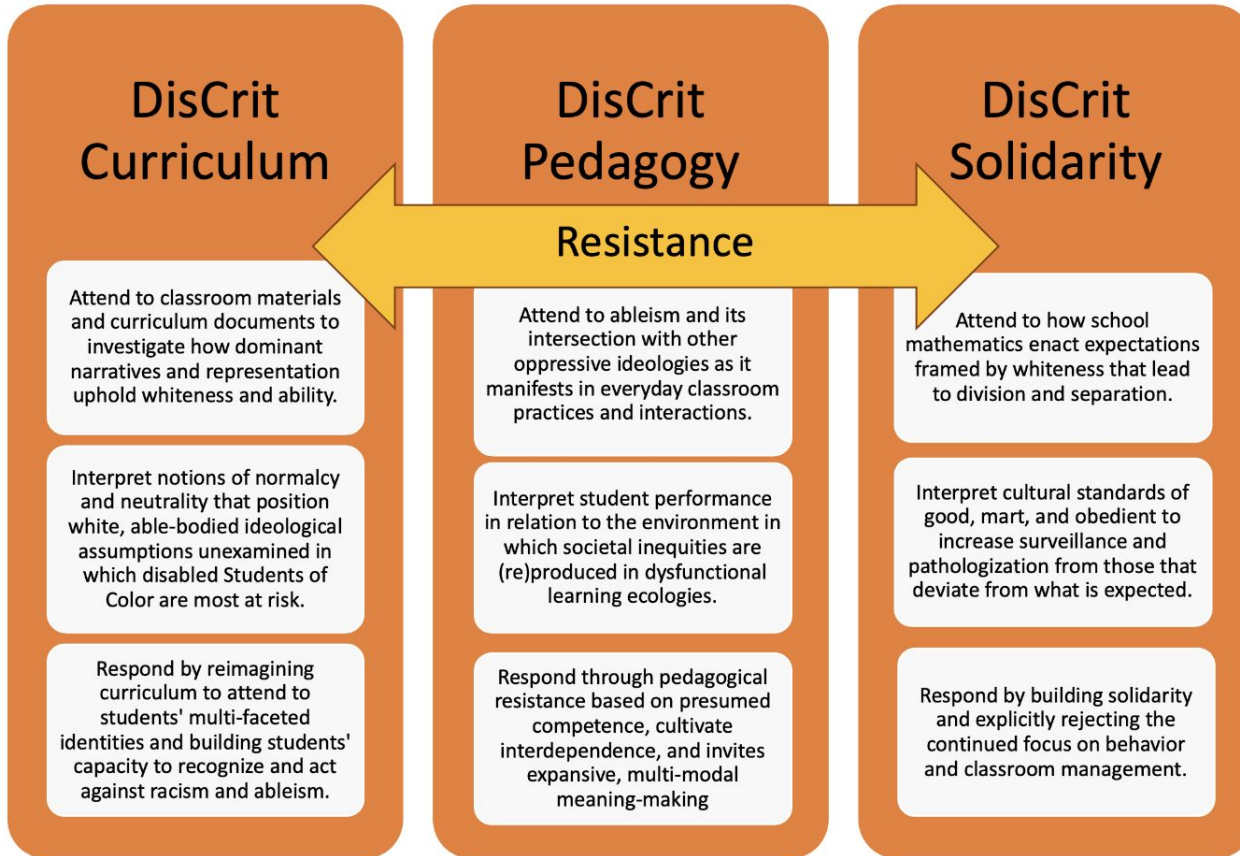
Task: What are the ways in which Emilia engages in resistance?

Ellis, M. & Yeh, C. (2020). The need to disrupt normalcy in mathematics education. National Science Foundation Advancing Research & Innovation in the STEM Education of Preservice Teachers in High-Need School Districts.

II. Seeds of Refusal- DisCrit, Dysfunctional Ecology, & Disability Justice

“When I got into special ed, they were talking about **touch math** and all that, I was like “...Uhh **there is more than that.**” And only because I taught general ed, I am putting everything that I know from my (previous) math training in here. **I've worked with older kids in the juvenile hall who are being asked to complete worksheets after worksheets of basic facts with crayons, no choice, same concept again and again.. and they haven't been able to experience pre-algebra and algebra. My experience has pushed me to put more...As a (district) SpEd team we are coming together to come up with a math curriculum, and we really set in place what we want each grade level (to learn) and the build up.**

II. Seeds of Refusal- DisCrit, Dysfunctional Ecology, & Disability Justice



DisCrit Noticing

Access the framework here:
<https://tinyurl.com/DisCritNoticing>



III. DisCrit Noticing - Highlight one example of this work

Community Based

- PhotoVoice Community Project
- Student/Caretaker Interview
- Community-Based Methods Component

Integration of Social Justice Standards and Practices

- PhotoVoice Project
- Student/Caretaker Interview
- Community-Based Methods Component

Teaching and Learning Tools

- Say-Mean-Matter Framework
- Lesson Analysis Framework
- Cross-pollination of CRMT/UDL Unit Plan

III. DisCrit Noticing - Highlight one example of this work

How does this case illustrate DisCrit noticing?

<https://tinyurl.com/DisCritNoticingAccessNeeds>

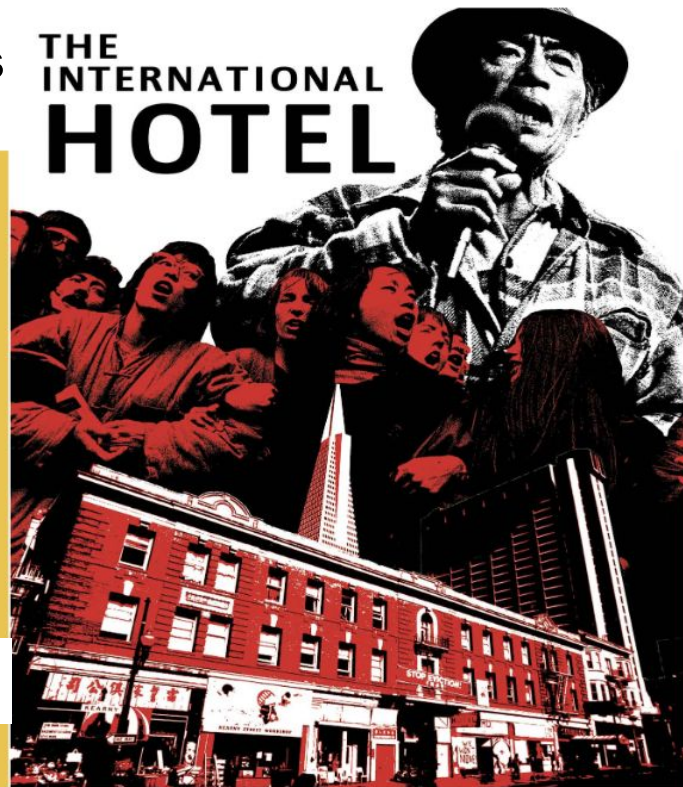


The Fall of the I-Hotel

“They were looking for identity at that time,
and they weren’t comfortable with just
identity.” — Cecilia Ochoa

By Richelle Acebado

THE INTERNATIONAL HOTEL



The International Hotel was a low-income residential hotel that became the most dramatic housing-rights battleground in San Francisco history. As a center for Asian American activism in the 1970s, the building housed nearly 150 Filipino and Chinese seniors, three community groups, an art workshop, a radical bookstore and three Asian newspapers. The I-Hotel stood on the last remaining block of Manilatown, a once-thriving Filipino neighborhood that was gradually displaced by San Francisco's expanding financial district.

From 1968 to 1977, landlords of the hotel tried to evict the residents and build a parking lot. Resisting eviction for almost a decade, the tenants organized a mass-based, multiracial alliance which included students, unions and churches. During a final 3am eviction on August 4, 1977, over 3,000 people unsuccessfully defended the I-Hotel from hundreds of club-wielding riot police. The building was demolished in 1979, and it remained a vacant hole for over two decades. Thanks to a concerted effort by local neighborhood groups, the I-Hotel was rebuilt in 2005, providing 104 units of low-income senior housing and a community center to continue the legacy of Manilatown.

Poster: Claude Miller Aug. 2009
Image: Manilatown Heritage Foundation. I-Hotel photo: Jerry Ziv
Remonstrance/Spokane.com; Walter; Singapore; Chris Fujimura

CELEBRATE PEOPLE'S HISTORY
MANILATOWN.ORG - JUSTSEEDS.ORG

More Questions than Answers

1. How can teaching **take into account the historical-political** context of presumed intelligence and recognize that ability measures and results are also social constructions that may not be objective or equitable?
2. How can our questions better examine and help **illuminate the interconnected nature** of mathematical ideas and the **nonlinear pathways** students might take to mathematical understanding?
3. How do **our queries and methods reflect a curiosity and respect** for the varied ways that students with disabilities might engage with mathematical ideas and express their mathematical thinking?

Closing

Yeh, C. (2023). DisCrit noticing: Theorizing at the intersections of race and ability in mathematics education. *School Science and Mathematics*. <https://doi.org/10.1111/ssm.12628>.


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RESEARCH ARTICLE

WILEY | 

DisCrit noticing: Theorizing at the intersections of race and ability in mathematics education

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Abstract

While there is increased attention to power, privilege, and access in mathematics education, conversations around race and disability are often left out of the conversation. Disability in mathematics continues to be studied with a lens that focuses on behavior, rather than attending to the situated and sociopolitical context in which teaching and learning takes place. This paper specifically calls on the importance of an intersectional analysis of ability and the need for explicit conversation on the interwoven nature of race and disability to uncover exclusionary practices of hyper-labeling, hyper-surveillance, and hyper-punishing for those outside notions of normalcy. Drawing on sociopolitical perspectives informed by Disability Critical Race Theory (DisCrit) and DisCrit Classroom Ecology, I share a framework of DisCrit noticing to consider the interwoven nature of racism and ableism in mathematics classrooms, provide a context to develop preservice teacher DisCrit noticing during mathematics methods, and a case example to highlight implications and transformative possibilities for (re)organizing classrooms through the DisCrit noticing framework.

KEYWORDS

Disability Critical Race Theory, mathematics education, teacher education, teacher noticing

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