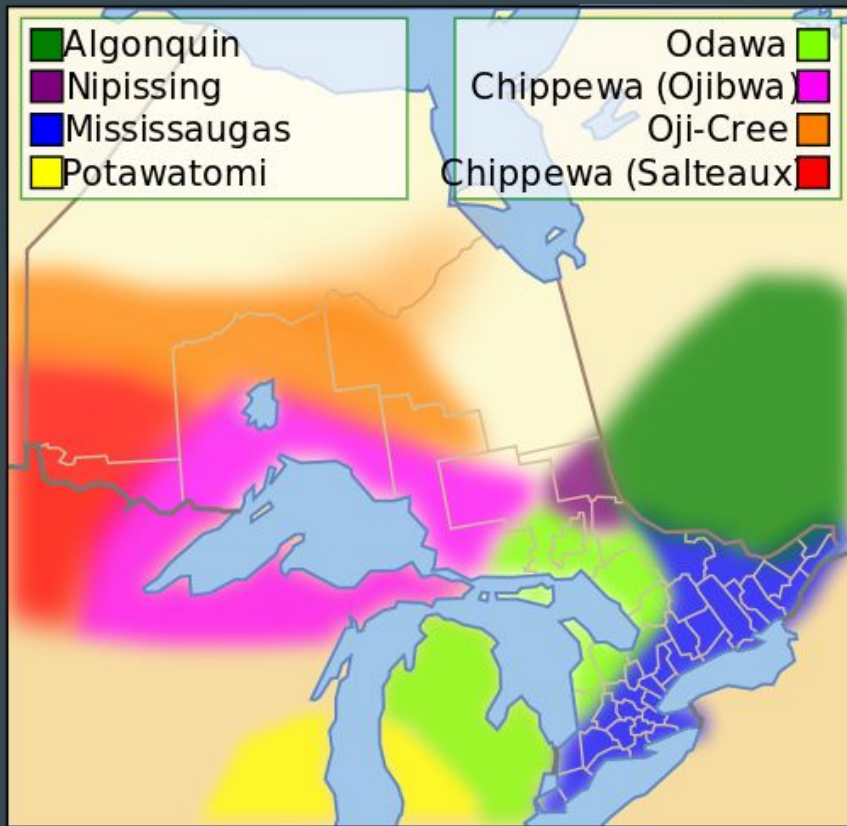


Equitable Teaching

Your Role in Rehumanizing Statistics

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<https://bit.ly/ptt-equity>



We are standing on the stolen land of the Mississaugas, the Anishnabeg, the Chippewa, and the Haudenosaunee. It is important to acknowledge that we have this history and in what ways we, as educators, are working to right this history that we belong to.

Land Acknowledgement

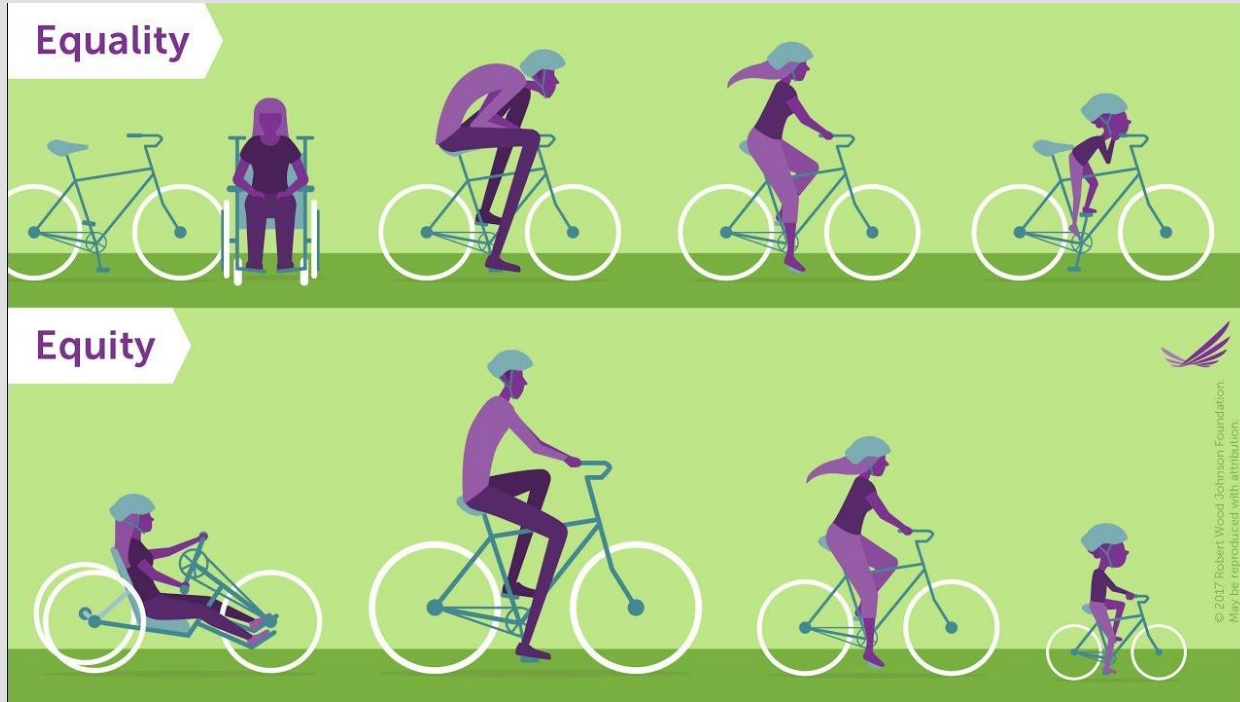
About me

My teaching evolution

- Oral assessments during COVID
- Creating inclusive classrooms
 - Discussing data related to gender & sexual identities
 - Classroom experiences working with differing ability statuses
- Rethinking assessment
 - Dissatisfaction with conversations about grades
 - Interested in students' intrinsic motivation & curiosity

Where we're headed...

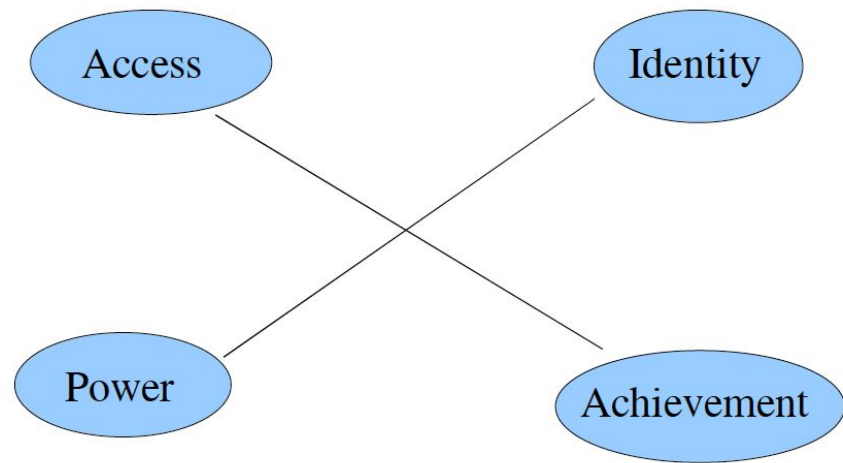
- What do we mean when we say “equity”?
- A framework for discussing equity
 - Access
 - Achievement
 - Identity
 - Power
- Start small – Pick **one** aspect to focus on!



What do I mean when I say “equity”?

A framework for discussing equity

“For me, equity is ultimately about the distribution of power—power in the classroom, power in future schooling, power in one's everyday life, and power in a global society.” Gutiérrez, 2009 (*Framing Equity: Helping Students "Play the Game" and "Change the Game"*)



Access



“Access relates to the **resources that students have available to them to participate** in mathematics, including such things as: quality mathematics teachers, adequate technology and supplies in the classroom, a rigorous curriculum, a classroom environment that invites participation, and infrastructure for learning outside of class hours. The Access dimension reflects the idea that **students are affected by their “opportunity to learn.”**”

Gutiérrez 2009

Where should we consider access?

1. Materials (e.g., textbook, course materials)

Where should we consider access?

1. Materials
2. Resources (e.g., office hours, technology, group collaborations)

Where should we consider access?

1. Materials
2. Resources
3. Habits (see [Wednesday's JSM session on equity!](#))

Presenting material during class



Suppose I've made the decision to spend a large part of my class period writing notes on the board, with students copying notes down as I write.

Let's think through the equity ramifications of that decision.

Let's Discuss! 5-minutes

Set-up: I choose to present materials to students by writing out notes on the board. Students are expected to copy as I write.

1. Who is supported?
2. Who might be hindered?

At your table, discuss the two questions for this pedagogical decision.

Feel free to use [this Jamboard](#) to record your answers.

Question 1: Tips for getting started

- One way I like to start approaching this question is to think through why I made this decision.
- Maybe I know I tend to speak quickly in class.
- Writing on the board is a great way to slow down the pace of the class.
- It also means that the students get to see exactly what I want them to have in their notes.
- When class is over, they have the same notes I do!
- And in all honesty, it requires less prep than making slides.

Question 1: Who is supported?

Students who...

- Are able to think while writing and listening.
- Prefer / need a slower pace during class than I provided before I switched to board writing.
- Are used to this style of teaching.

Question 2: Who might be hindered?

Students who...

- Have difficulty writing and processing at the same time.
- Have visual needs and cannot see the board well, or have difficulty copying from the board.
- Require more engagement in order to connect to the material.

Some Terminology

- Many of the identities on the previous page are **invisible** and are likely to be **non-disclosed**.
- **Invisible** identity traits are traits that are not able to be readily seen or noticed by others (or not until a flare / until triggered).
 - Examples: Diabetes, ADHD, anxiety
- **Non-disclosed** identity traits are traits that an individual does not choose to share or is unable to share with others.

Learning about student identities

- Creating an inclusive classroom is an ongoing process that changes with different student identities in your classroom.
- However, we have just shared that some identities are invisible and not disclosed.
- How can we learn more about what our students might need??

Suggestion: Survey

- Provide a survey before the term begins.
- Example: *I want to create a classroom where we can all learn and succeed. If there is anything you would like to share that would help improve your learning experience, please let me know below. For example: 'It helps me to know when other students are going to be moving around the room. It would really help me if you could give the class a heads up before folks start moving.'*

Consider adaptations

- We have indicated that students with a variety of needs may not be supported by the design decision of writing on the board.
 - Does this mean that we should never write on the board? No!!
- But we do want to think about these student needs we have identified as not being met and see if we can adapt our pedagogy to better support these students.

Possible adaptation

Who might be hindered?

- Students who have difficulty writing and processing at the same time.

Adaptation:

- Provide a copy of your notes to your students after class.
- This can be scanned copies of your handwritten notes or typed notes.
- You can also write on a tablet / iPad that automatically creates a copy of the notes that can be shared.

What is the cost?

Adapted pedagogy:

- I present materials to students by writing out notes on the board.
- Students are expected to copy as I write.
- I provide a copy of the notes to my students after class.
- I let students know that such a copy will always be provided.

What is the cost of this decision? Is it sustainable?

- When we work to create an equitable classroom, it is important to ensure every student is able to access the materials needed to be successful.
- Writing only on the board supports only students who thrive with that method of delivery.
- By adding a second way to obtain the information (written notes in some form), you broaden the student identities you support.

General guidelines

Achievement



This dimension is measured by **tangible results** for students at all levels of mathematics, including such things as **participation in a given class**, course taking patterns, **standardized test scores**, and participation in the math pipeline (e.g., majoring in mathematics in college, having a math-based career)."

Gutiérrez 2009

What issues could we consider?

1. How do you pose questions to students?

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3. How can students be motivated to continue to learn and grow?

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1. How do you pose questions to students?
2. How do you regulate classroom discourse?
3. How can students be motivated to continue to learn and grow?
4. What students succeed in your class, in your minor, in your major?

Posing questions to your class



Suppose I've made the decision to pose questions to my students throughout my class. When I pose a question, I call on the student whose hand appears first.

Let's think through the equity ramifications of that decision.

Let's Discuss! 5-minutes

Set-up: Suppose I've made the decision to pose questions to my students throughout my class. When I pose a question, I call on the student whose hand appears first.

1. Who is supported?
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At your table, discuss the two questions for this pedagogical decision.

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Identity



“The identity dimension considers whether students have opportunities to **draw upon their cultural and linguistic resources** (e.g., other languages and dialects, algorithms from other countries, different frames of reference) when doing mathematics, paying attention to the contexts of schooling and to **whose perspectives and practices are “socially valorized”** (Abreu & Cline, 2007; Civil, 2006).”

Gutiérrez 2009

What issues could we consider?

1. What types of data are being used?

What issues could we consider?

1. What types of data are being used?
2. What types of examples are used in the textbook?

Data context



Suppose tomorrow I'm planning on using a dataset where the researchers chose to record gender with two levels, "male" and "female".

Let's think through the equity ramifications of that decision.

Let's Discuss! 5-minutes

Set-up: Suppose tomorrow I'm planning on using a dataset where the researchers chose to record gender with two levels, "male" and "female".

1. Who is supported?
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Power



“The Power dimension takes up issues of social transformation at many levels. This dimension could be measured in **voice in the classroom** (e.g., who gets to talk, who decides the curriculum) (Morales, 2007; Zevenbergen, 2000; Adler, 1998), **opportunities for students to use math as an analytic tool to critique society** (e.g., exploring “risk” in society) (Mukhophadyay & Greer, 2001; Skovsmose & Valero, 2001; Gutstein, 2006), **alternative notions of knowledge** (D'Ambrosio, 2006), and rethinking the field of mathematics as a more humanistic enterprise.” (Gutiérrez, 2009)

Gutiérrez 2009

What issues could we consider?

1. How do students work in groups?

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2. How do you elevate student thinking?

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1. How do students work in groups?
2. How do you elevate student thinking?
3. How can you integrate social justice oriented analyses?

Group work



Suppose tomorrow I'm planning on having students work in groups to complete a data analysis. I will randomly assign students to groups, with 3-4 students per group.

Let's think through the equity ramifications of that decision.

Let's Discuss! 5-minutes

Set-up: Suppose tomorrow I'm planning on having students work in groups to complete a data analysis. I will randomly assign students to groups, with 3-4 students per group.

1. Who is supported?
2. Who might be hindered?

At your table, discuss the two questions for this pedagogical decision.

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Thank you!! And any questions??