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Reframing the Achievement Gap in Mathematics Education

Madeline Pavlovich • Math 498 • April 26, 2022

Equity and belonging in math have become large focuses in math education research. We have taken a social turn by exploring equity in math, but that's not enough. Much of math education research focuses on a so-called "achievement gap" measured by test scores and similar quantitative measures of "success." By framing issues of equity in this way, methods to remedy the gap often require subordinated groups to become more like the "higher achieving" group. In other areas of study, we have been quicker to incorporate sociopolitical lenses into teaching and learning with an emphasis on identity and power. Such a sociopolitical turn could help us rethink what it means for math education to be truly equitable.

Current framings of identity and power in math education:

Identity

- Mainstream idea: cultural marker of students or teachers
- Frames identity as fixed, overarching, and owned by the individual
- Serve as a classification system, further perpetuates achievement gap lens

Power of Mathematics

- Math itself is seen as rational, logical, and a revealer of truths
- In mathematizing certain concepts, we reduce a phenomenon to its measurable characteristics, a political process in itself

Power of Success in Mathematics

- Those who do well in math have a higher status conferred on them
- Perpetuated by focus on the achievement gap and early tracking into higher classes based on perceived ability

How do we solve this problem?

- Frame identity as something we *do*, not something we *are*
- Recognize and challenge the power of mathematics through lenses of critical theories, post-structuralism
- Highlight that math is constantly changing and allows for contradictions
- Change our measures of success in mathematics
- Be open to multiple meanings

In order to move towards a more equitable math education, we need to move past essentialization and create new views on how to structure math education.

The achievement gap system creates a racial hierarchy through encouraging minority students to conform to a white "normal." This view offers merely a static snapshot of inequities. By focusing on identity as a dynamic idea that changes over time, we can move past an implicit hierarchy and challenge existing structures that contribute to this hierarchy.

References and Acknowledgements

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Students are grouped together based on identity labels to study success in the classroom



Achievement gap based on test scores is identified between two groups of students



Skills and strategies of successful group are imposed on the underperforming group