

Engaging and Empowering African American Students through Mathematics

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Agenda

- Introductions
- Activity #1
- Engaging and Empowering
- Math Activities
- Debrief, Questions, & Evaluations

Goals of this workshop

1. Explore and build on the strengths and knowledge of African American students
2. Exploring practices that support African American students as creators and learners of mathematics

**What's going on in our
classrooms?**

Quotes Road

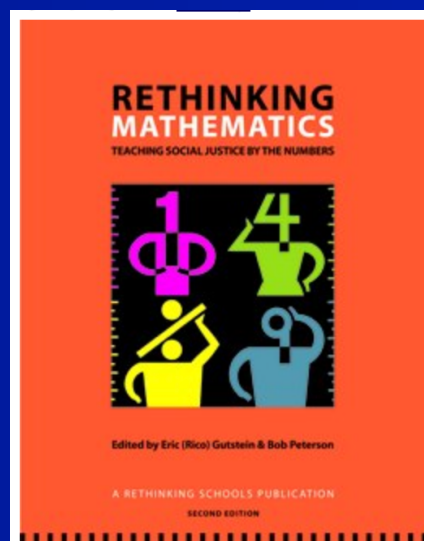
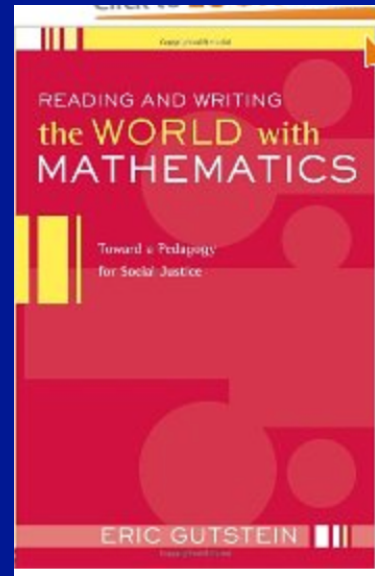
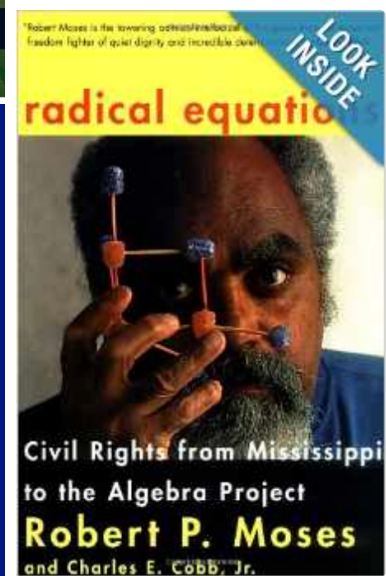
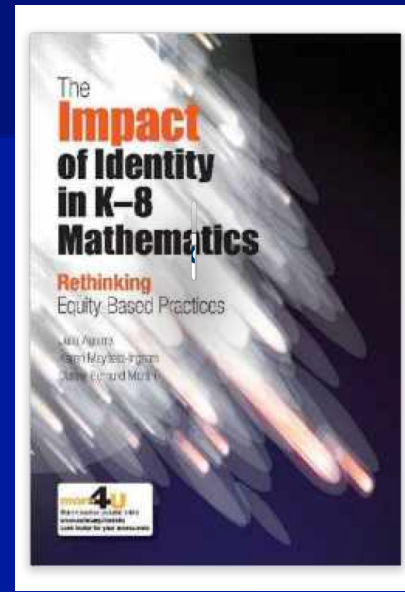
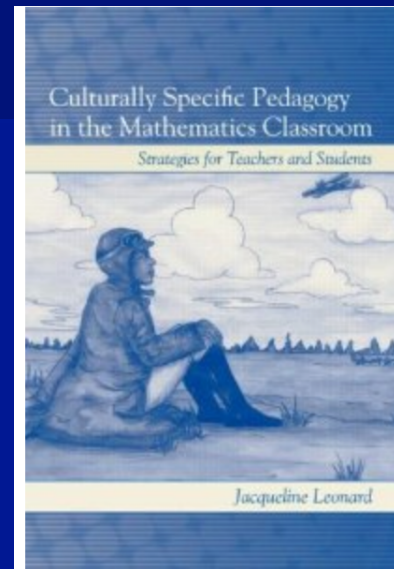
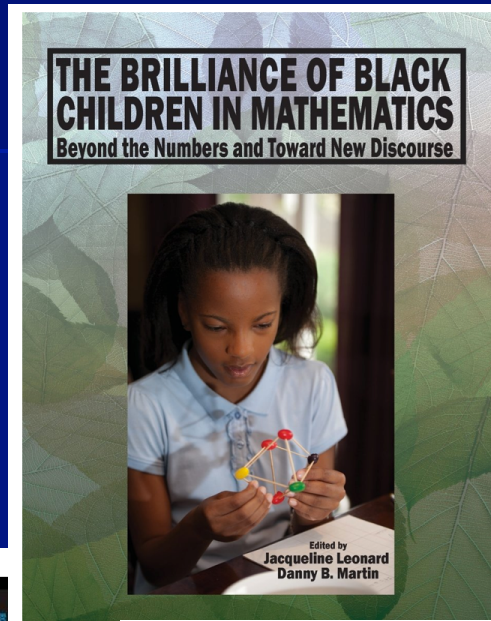
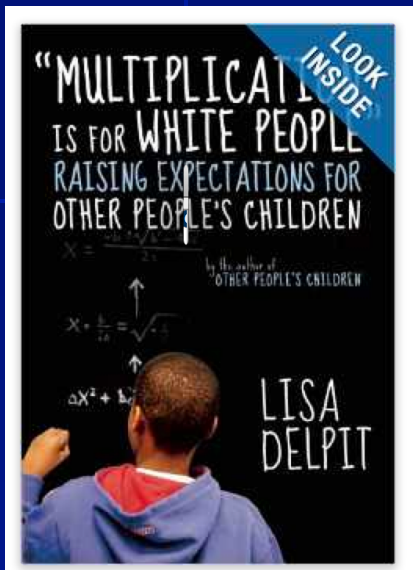
“What type of pedagogy must African American students have to be successful in school mathematics? Conventional mathematics pedagogy emphasizes whole-class instruction, with teachers modeling a method of solving a problem and students listening to the explanation. This is typically followed by having the students work alone on a set of problems from a textbook or worksheet. The goal of this teacher-directed model of instruction is for students to produce correct responses to a narrowly prescribed problem.....

Quotes Road Continued.....

Few, if any, attempts are made to build on the thinking and experiences of African American students. One important purpose of mathematics education is to prepare students to incorporate mathematical reasoning and communication into their everyday lives.

However, conventional pedagogy has often persuaded students-- particularly African American students-- to consider school mathematics as a subject divorced from their everyday experiences and from their attempts to make sense of their world” (Tate, 2005).

A few Resources



How do we engage and
empower African
American students through
mathematics?

Insights from researchers and practitioners

- The Learning Environment
 - High help, high perfectionism
 - Low help, low perfectionism

High help, high perfectionism

vs.

Low help low perfectionism (Ferguson, 2008)

- Lesson planning-thought about if students would enjoy them
- Tried to call on low achievers as much as high achievers
- Encouraged low achievers to ask questions-did not fear it would slow down the class
- Felt equally effective teaching students from diverse racial backgrounds
- High achievers get called on much more than low achievers
- Teacher tells individual students when peers outperform them
- Struggling students allowed to give up when the work gets hard
- Mistakes are strongly frowned upon, even if students are learning

Insights from researchers and practitioners

- Curriculum
 - Contextualizing
 - Mathematizing

Why contextualize math instruction?

Kurz, T. & Bartholomew, B. (2013). Conceptualizing Mathematics Using Narratives and Art. *Mathematics Teaching in the Middle School*, 18(9), 552-559.

- Contextualizing mathematics is an important element in student engagement.
- When mathematical tasks contained content familiar to students' lives, the students were much more curious, engaged, and attuned to the tasks; mathematical relevance.
- Problems with culturally relevant contexts help to promote mathematical literacy and equity (Gutstein, 2006).

An Example Task

The Context

- Edmond is a student working with the *Ending the Schoolhouse to Jailhouse Track* a program of the Advancement Project. Edmond recently learned that:
 - **Nationally, black students are more than three times as likely to be suspended or expelled as their white peers**
 - **If a student is suspended in ninth grade, they are twice as likely to drop out of high school**

An Example Task Continued...

	# out of school suspensions (507)	% of total suspensions
African American	350	69
Hispanic	48	9.5
White	109	21.5

2411 total school population: 54% white, 39% African American, 5% Hispanic and 2% other

Mathematizing

- Mathematizing is the ability to identify the relationships and quantities that exist in specific contexts.
- The ability “to do math” becomes empowerment as individuals make informed decisions about their lives.
- In allowing students to provide a context for mathematics, they are able to glean relevance from knowledge by applying it to novel contexts (Kurtz & Bartholomew, 2013).

Math....Is It Really About Me?????

Please get into groups of 3 and let's interweave mathematics into our lived experiences....Come on let's mathematize.



Final Thoughts

“The reality is that all children have much greater potential than we ever imagine, but our rigid educational system assumes that some children are incapable of achieving academically and that one model of instruction fits all....If we can see all of the children we teach—skin color, culture, learning styles, income level notwithstanding—as complete, deserving, brilliant human beings, then perhaps we will manage to create the educational system we need. Education for *all* children should be “special”—that is, specifically designed to discover the strengths and accommodate the needs of each child” (Delpit, 2012, p. 103).

Final Thoughts

“We don’t teach mathematics, we teach children”

Cred U. Dobson

Asante Sana