MQI COACHING

Welcome!

Practical strategies for re-engaging students in the math classroom

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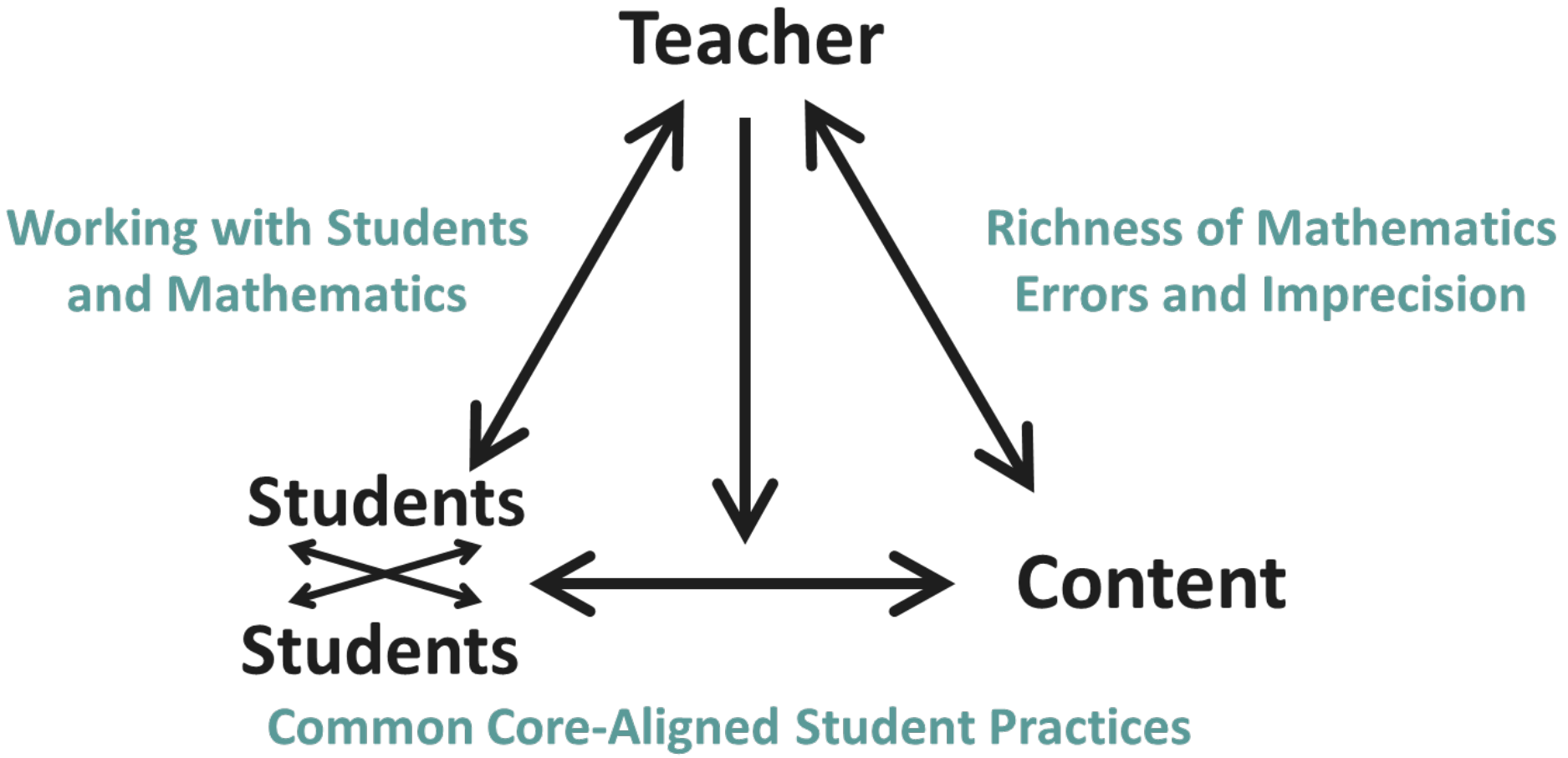
What do math classrooms look like today?

As we continue to grapple with the impact and effects of the COVID-19 pandemic, we know that student engagement in the math classroom is more important than ever.

- But what does student engagement in math classrooms really mean?
- What does it look like and sound like to engage students in the doing and reasoning of mathematics?
- And how do we effectively engage students in those practices?

The Mathematical Quality of Instruction (MQI)



MQI Coaching

- Math-specific professional development for teachers and instructional leaders
- Offers specific and actionable strategies to substantively engage students in the mathematical work
- Each of our panelists have participated as either a teacher receiving MQI e-coaching or a coach trained on MQI Coaching

Introductions

- **Judy Damiao**
  - Assistant Principal of Math, Arts, Business and Music
  - NYC Public Schools
  - E-coaching participant & MQI coach trained
- **Evelyn Ennis**
  - Secondary Math Coach for School Transformation
  - Partnership For Los Angeles Schools
  - MQI coach trained
- **Kayla Fulghum**
  - High school Algebra and Geometry teacher
  - Collier County Public Schools
  - E-coaching participant
- **Joshua Sawyer**
  - District Math Instructional Coach
  - Elizabeth City - Pasquotank Public Schools
  - MQI Coach

Students Communicate about the Math

- **Ask Yourself:** Are students offering substantive mathematical contributions?

- **What it gets at:** Students talk a lot in math class, but in terms of student learning, some talk matters more than others. In particular, substantive mathematical contributions can help students make sense of and internalize the ideas presented in class. Substantive mathematics contributions go beyond one or two-word answers to encapsulate student thinking and reasoning.

Students Communicate about the Mathematics of the Segment

This item captures the extent to which students communicate their mathematical ideas during the course of the segment, either in whole-group or small group settings. Examples of *substantive* student contributions include, but are not limited to, students presenting solution methods publicly (with or without words), asking mathematical questions, describing the meaning of a term, offering an explanation, discussing solution methods, commenting on the reasoning of others, etc.

In cases in which students are working in pairs or small groups, code substantive student contributions when you can a) hear them (e.g., a student and teacher are talking as teacher circulates, or you can overhear pairs of students) or b) the teacher's directions are very clear, and we can reasonably expect students to be having a substantive exchange for the duration of the small group work (e.g., a turn and talk). However, if it is not clear what students are talking about in small groups/pair work, score as Not Present.

Evelyn

Instructional Practice:

- Intentionally plan open-ended questions
- Include questions in slides/lesson plans

Joshua

Instructional Practice:

- Create opportunities for “turn and talk”
- Ask questions that attend to processes and descriptions of thoughts

Judy

Instructional Practice:

- Build a culture of respect
- Build up student confidence to share ideas
- Give students sentence stems

Students Provide Explanations

- **Ask Yourself:** Are students offering contributions that go beyond the HOW and incorporate an element of WHY – i.e., are students offering explanations?

- **What it gets at:** Students often present descriptions of their thinking in mathematics class. When talking about simplifying 2/4, for instance, they might say "I divided the numerator by 2 and denominator by 2 and got 1/2." But research suggests that turning these "how" descriptions into "why" explanations can help students better understand mathematics. For instance, a student might explain the procedure above by saying "I was dividing by 2/2, which is 1, so the number doesn't change its value but looks different."

Students Provide Explanations

Students provide a mathematical explanation for an idea, procedure, or solution.

Examples:

- Students explain why a procedure works
- Students explain the procedure they used to solve a particular problem by attending to the meaning of the steps involved in this procedure rather than simply listing those steps
- Students explain what an answer means
- Students explain why a solution method is suitable or better than another method
- Students explain an answer based on an estimate or other number-sense reasoning

Kayla

Instructional Practice:

- Strategically plan questions (i.e. “Why?” “How do you know?”)
- Select problems that allow students to explore
- Use wait time

Incremental Tweaks

- This is not meant to overhaul teachers' instruction.
- These are meant to be small, incremental tweaks that can make a big impact.

Q & A with Panelists

- What strategies could be used to engage students in different levels of understanding in this situation?

- How to build opportunities for students to do and reason in a very tight curriculum?

- How can we achieve a balance between identifying and addressing learning loss while supporting student in the SEL needs?

- How to integrate CRT into everyday math lessons?

Questions?

MQI COACHING

Thank you! If you want to learn more:

Learn more about our coaching work: http://mqicoaching.org

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