Common Core State Standards: Why college instructors should be paying attention

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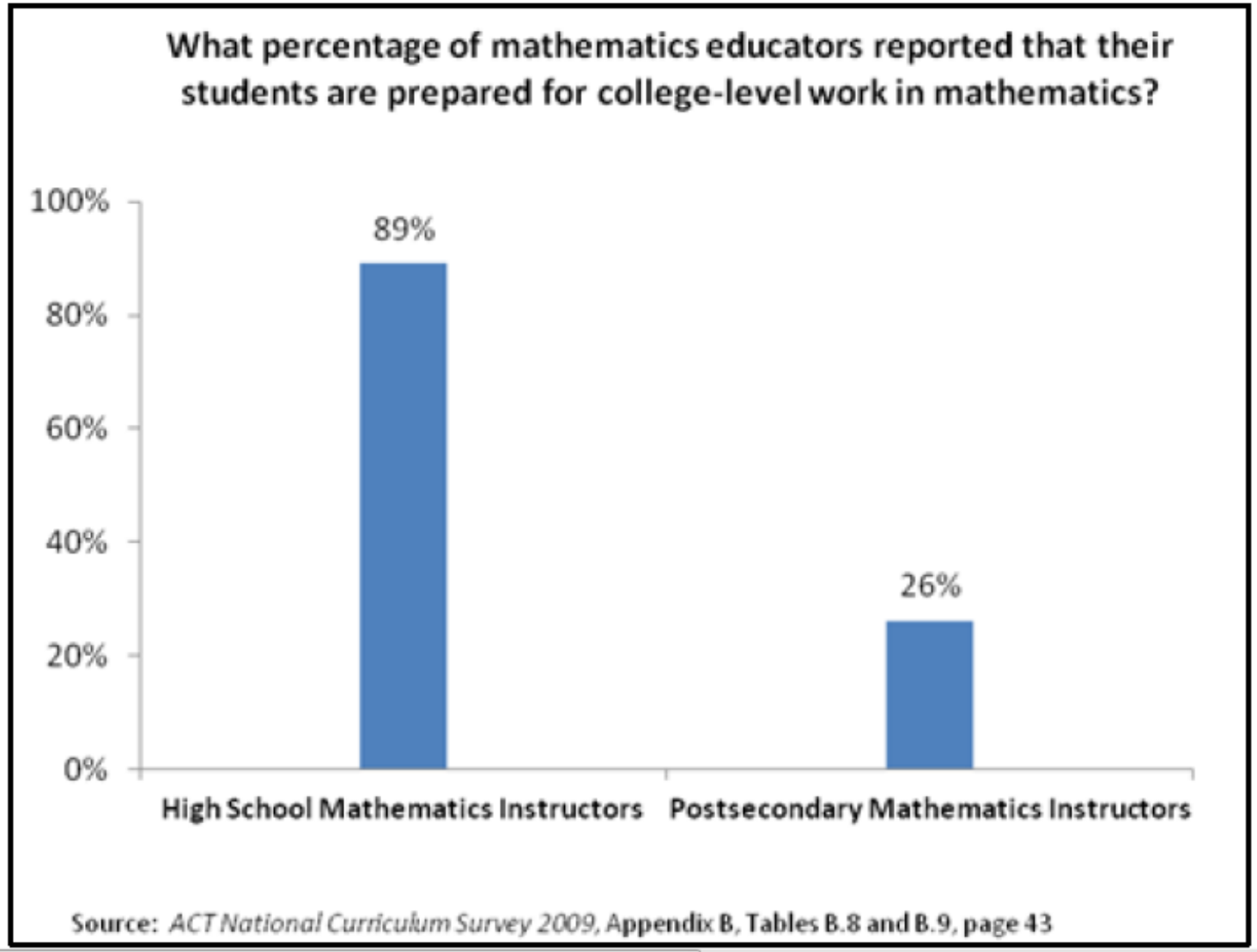
College Math Professors Feel HS students Today are Not Prepared for College Math



Common Core State Standards*:*

Why *should* college instructors be paying attention*?*

The Simple Answer

The promise of standards

These Standards are not intended to be new names for old ways of doing business. They are **a call to take the next step**. It is time for states to work together to build on lessons learned from two decades of standards based reforms. It is time to recognize that standards are not just promises to our children, but promises we intend to keep.

A Different Student on Arrival

- Will have been instructed differently
  - Emphasis on discourse, sense-making, & application
  - More experience learning through cooperative group work
  - Value placed on nurturing & maintaining curiosity about how mathematics influences their lives and worlds

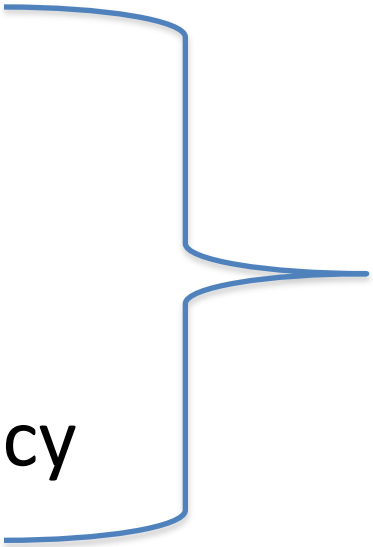
The “New” Student Mindset

- More analytic in approaching problems

- For example:
  - Can look at an equation and recognize the type of function
  - Can understand and compare functions represented in different ways… algebraically, graphically, numerically in tables, or by verbal descriptions
  - Can change & modify functions
  - Knows what it all means (context is key)

What We are Doing in High School Mathematics

- Discourse
- Sense Making
- Application
- Procedural Proficiency



Conceptual Development

Discourse

- How effectively does the teacher use questioning to help students develop mathematical understanding?
- What techniques and strategies are used to orchestrate and promote student discourse and how effective are these strategies implemented?

Sense Making

In a classroom that promotes **reasoning and sense making**, the teacher begins the class with a **rich task** designed to give students a chance first to explore mathematical concepts by making connections to previous knowledge and then to use various **strategies** to complete the task.

Sense Making

By **thinking** through what they already know and can use, trying an approach, **considering** whether an answer is **reasonable**, and sharing their thinking with classmates, students not only make sense of what they are doing, but also develop their own understanding of the mathematics—not the teacher's understanding, not a classmate's understanding, but their *own* understanding.

-NCTM President Linda M. Gojak

Application

Video

- https://www.teachingchannel.org/videos/laws-of-sines-cosines-lesson

- 5min segment

Procedural Proficiency

Skill in carrying out procedures flexibly, accurately, efficiently, and appropriately

- Instructors of mathematics must provide students practice on skills that are already developed.

Questions for College Instructors

- What are the implications for placement testing?
- What are the implications for instruction in the college classroom?
  - How do we **increase depth & retention**?
  - How do we **facilitate meaning-making**?
- What are the implications (and opportunities) for recruiting and motivating students to pursue further math coursework and math-related career fields?

Questions for College Instructors

- How do we evaluate (and provide feedback on) the impact of the new standards on students entering college?
- How do we support consistency in math education across the country?