SREB | School Improvement

Promising Practices Newsletter

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Spotlighting promising practices from the 2019 College- and Career-Readiness Standards Networking Conference

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There's Power in Struggle

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Tara Faircloth, Director of Curriculum and Instruction, Caesar Rodney School District, Delaware

"No one goes into education and into teaching to sit back and watch kids struggle," says Tara Faircloth, the director of curriculum and instruction for the **Caesar Rodney School District** in **Wyoming, Delaware**. "It's part of our nature to want to help," she adds.

After reading *Principles to Actions* by the National Council of Teachers of Mathematics, the district was inspired by the following quote:

> "Teachers sometimes perceive student frustration or lack of immediate success as an indicator that they have somehow failed their students. As a result, they jump in to 'rescue' students by breaking down the task and guiding students step by step through the difficulties. Although well-intentioned, such 'rescuing' undermines the efforts of students, lowers the cognitive demand of the task and deprives students of opportunities to engage fully in making sense of the mathematics."

Sarah Potter, the district K-12 mathematics resource teacher, who was honored as SREB's Outstanding Math Coach at the 2019 College- and Career Readiness Standards Networking Conference, notes the district has adopted productive struggle as a method of teaching and learning and is focused on supporting students to become owners of their learning. She cautions that teachers must be purposeful and create an environment for productive struggle — which can present challenges. Knowing this, the district decided to focus on changing instructional mindsets to embrace the practice, notes Faircloth.

"During classroom walkthroughs, we saw students sharing their work on whiteboards, but not really engaging in thinking about what was being shared. Students did not provide feedback to one another, and we noted missed opportunities for discourse and error analysis." Faircloth adds that teachers would correct students' work or ask, "Can someone think of a better answer?"

"We wondered what would have happened if students had an opportunity to question each other's work and get to the bottom of which answer was correct and understand why. Instead of our students going through the motions, we want them to make sense of mathematics," insists Faircloth. The district also wanted teachers to know that productive struggle is good for students. Here are some differences between productive struggle and unproductive struggle.

SREB awarded Sarah Potter the 2019 Outstanding Math Coach Award at the College- and Career Readiness Standards Networking Conference in Baltimore.

Difference Between Productive and Unproductive Struggle

Unproductive Struggle	Productive Struggle
Calling on students who know the right answer	Calling on students who may NOT have the correct answer
Praising students for their smarts	Praising students for perseverance in problem-solving, not for being smart
Focusing on teaching procedures	Providing nonroutine problems that can't be solved with a memorized formula
Making student responses right or wrong	Giving students informative feedback

Difference Between Productive and Unproductive Struggle

Unproductive Struggle	Productive Struggle
Giving easier work to struggling students	Giving challenging tasks to all students
Following a strict schedule for covering new material	Allowing students time to ask questions and inspiring curiosity
Making students feel okay about not being a "math person"	Encouraging a growth mindset

Tinker Toy Tower Activity

To help teachers experience productive struggle and perseverance, Potter engaged the district's teacher-leader group in a Tinker Toy activity. She did the same with participants in one of her sessions at SREB's 2019 Networking Conference.

Participants were asked to work in groups and build a tower. The objective was to construct the tallest free-standing tower using the materials provided while new obstacles and challenges were introduced every few minutes. "This task allowed us to put teachers in the students' shoes to experience struggle. The real win comes with the feeling you get in the end when you know you've accomplished it," notes Potter.

Teachers at the 2019 College- and Career-Readiness Standards Networking Conference take part in Tinker Toy Activity to experience productive struggle.

While debriefing, participants were asked to discuss what strategies they employed to deal with their frustrations individually and as a group. Participants also considered how important communication was in this activity and how the experience correlated with the way students experience productive struggle in the classroom.

One of the best things that came out of this activity is that the teacher-leaders began to see the direction in which the district's mathematics education should go. They also "created a district mission and vision statement for what mathematics instruction should feel and look like in Caesar Rodney," says Faircloth.

Leadership Teams and Professional Development

Low test scores and a realization that bold steps must be taken to advance student achievement spurred Caesar Rodney to implement productive struggle as a strategy. The district also adopted a new curriculum and partnered with SREB to offer professional development that began with teacher-leaders in the middle grades and eventually expanded to include all K-12 teachers in this district of 8,000+ students.

Teachers received coaching on implementing a balanced approach to math instruction, using formative assessment lessons to check students' understanding of math concepts and correct misunderstandings, and engaging students in productive struggle — all hallmarks of **SREB's Powerful Math Practices**.

Administrators and school leaders participated in professional development so they would know what quality math instruction looks like when they observe classrooms.

Student Outcomes

The district sees the benefits of productive struggle. At the end of the 2018-19 school year, the district surveyed middle grades students to gauge how they felt about math. According to Faircloth, results showed that student confidence grew. Not only were students talking more about math, they also realized they had to think about math.

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