

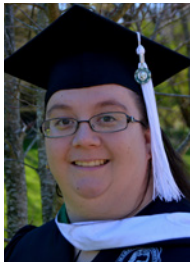
Strategies That Work

Advancing Literacy and Math Achievement

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West Virginia Teacher Experiences a Paradigm Shift Using Math Strategies



Brittany Dameron, a fifth-year math teacher at Riverside High School in Belle, West Virginia (Kanawha County School District), taught her first formative assessment lesson (FAL) spring semester of 2016. She finds the strategies of the Mathematics Design Collaborative (MDC) make math come alive for her students.

During Dameron's career at Riverside, she has taught conceptual math, basic skills, multiple levels of algebra content, trigonometry and pre-calculus. Dameron earned her master's in leadership with an emphasis in educational leadership from Marshall University in December 2015.

She tells the story of implementing MDC strategies into her classroom in her own words:

It's Not About Right or Wrong

Someone once told me that, in the educational world, there would be times that you experience paradigm shifts that forever alter the way you see education. When I first experienced the Mathematics Design Collaborative (MDC), I never imagined that this would be one of them.

In my Honors Algebra II class, students have been seated in small cooperative groups since the beginning of the year. I thought that simply having the students in these groups was enough to encourage collaborative conversations in my class. I never had a high failure rate (and by failure rate I mean students who are not able to comprehend the material regardless of their grade in my class) and never had trouble with students completing work. I did, however, have students who were, to put it simply, leaving my classroom more frustrated than I was and, even worse, hating math.

When I first experienced MDC training with SREB math consultant Kim Goff, I knew it was something that I wanted to try in my classroom — mostly to see if what all the “believers” were saying was actually true. The first time I administered a pre-lesson assessment, one student said, “I honestly know nothing!”

I convinced him that he did not have to get the right answer but simply show me his thinking. This is a big change for my math students. They're so used to the expectation of a “right or wrong” answer that they hesitate to simply show what they know. It seemed that he appreciated the opportunity to be “wrong” and just put his thinking on paper.

The Southern Regional Education Board (SREB) provides middle grades and high schools in member states with intensive professional development in leading edge literacy and math strategies that enhance students' abilities to meet new college- and career-readiness standards. The training is offered at no cost to qualifying schools in member states except Florida, Kentucky and Tennessee.*

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This Week: Riverside High School's Brittany Dameron sees increased student engagement.

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* Training fees negotiated separately for direct contract states.

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It Should Be Easy

My first MDC experience was a lesson on systems. I thought, “My students know this topic. It should be easy.” I gave the pre-lesson assessment and was amazed at what my students did not know. I was very frustrated. I knew I taught that topic to students and that they “should” know the math. My local trainer, Crystal Godbey, assured me that this was not an atypical response, and that many teachers experience the same frustration in the beginning. She also reminded me that the formative assessment lesson (FAL) was meant to clear up obstacles, misconceptions and gaps in learning, so I moved forward and implemented the collaborative activity.

In the middle of my collaborative activity, in walks the curriculum assistant principal (CAP) of my school. I thought, “Great ... my students are struggling and frustrated; what will they say to her?” Amazingly, the students told her exactly what they were learning and doing. Even though the students were struggling, they knew what they were doing, and I honestly cannot make that statement during a normal “non-MDC day.”

The Major Aha! Moment

The part that really surprised me was that it was not my highfliers who easily voiced what they were doing to my CAP; it was the students who normally struggle with the content. I wondered if this was a fluke or actually true, so I decided to test another MDC lesson. Guess what? Same thing! Students who had not seen success in a “normal” math class were seeing success with the MDC lessons.

That caused me to reflect: Were my highfliers really highfliers, or were they just simply good at the procedures? Was I providing enough opportunities for the students on the “struggle bus” to feel successful? Was my “rigor stool” with all of its components (conceptual, factual, procedural and metacognitive) balanced? Talk about a major “Aha!” moment.

For me, MDC was so much more than an eye-opening experience. After having success with a concept lesson, I tried a problem-solving lesson. Although I was excited to see how they would do, I was nervous at the same time. I gave my students the Problem Solving — Having Kittens FAL and was amazed at how engaged they were. Before using MDC, I thought that I had good student engagement. After seeing the MDC strategies in action, I was amazed.

During MDC lessons, students who were never interested in math were excited and totally engaged. I never realized how exciting math could be for all students before MDC. During the Kitten FAL, students were begging me to let them finish or keep working on the assignment — students who before, on a normal day, were only doing the bare minimum. Students were excited to learn math, and the 45-minute classes were flying by. All of us looked at the clock saying, “Class is already over?” Student success (and not meaning an A in my class but actually grasping the concepts) is the ultimate goal for me and I was amazed at how MDC truly allowed my students to discover the math concepts with excitement and in an engaging way that made them want to learn more.

Below is Dameron’s data for her first concept development FAL. The pre- and post-lesson assessments numbers are based on teacher judgment of students’ understanding of math concepts embedded in the FAL. Each student is scored by the teacher on a scale of 0-3, with 3 = understanding, 2 = some understanding, 1 = little to no understanding and 0 = no response.

The results indicate that students increased their level of understanding of math concepts by nearly a full point (0.8), or 27 percent.

Pre- and Post-Lesson Assessment Data of Student Growth

Name of FAL	Average Pre-Lesson Assessment	Average Post-Lesson Assessment	Average Growth Summary
Classifying Solutions to Systems of Equations	1.1	1.9	.8

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