SREB | High Schools That Work

Strategies That Work

Advancing Math Achievement

February 17, 2016

FALs Yield High Dividends


Debbie Blankenship

Jeanne Glover, math specialist at the **Jonesboro Public Schools** district in Jonesboro, Arkansas, was trained in the Mathematics Design Collaborative (MDC) during the 2013-14 school year with SREB math consultant **Amanda Merritt**. Glover believes the MDC tools fit well with her K-12 mathematics vision for the district.

So **Debbie Blankenship**, math teacher at **Douglas MacArthur Junior High School**, joined two other district teachers for initial MDC training in May 2014.

Blankenship has been in the classroom for 21 years. After her initial training, she wasn't sure about the initiative. "I was skeptical," Blankenship said. "I had seen a lot of academic fads come through."

Sticking to the Script

She was also concerned about the script for the formative assessment lessons (FALs). But after implementing her first FAL, she realized why it's essential to stick to the script. "It's important to follow the script for all of the lessons," Blankenship said, going on to explain that when she tried to change lessons, it never worked well.

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: Debbie Blankenship finds MDC's purposefully designed lessons pay off.

"Each one was tested in many, many classrooms and revised multiple times before being released," Merritt added. "They were all designed purposefully. When changes are made to the script, the lessons can lose their power."

Blankenship explains the many benefits from implementing the FALs. "An in-depth concept is addressed in a short period of time," she said. "FALs allow for flexibility for different academic levels, and students are actively engaged … They are quick, useful formative assessments and an excellent critique of student understanding."

Getting to Know FALs

Blankenship implemented six FALs during the 2014-15 school year. Four were Concept Development (CD) lessons and two were Problem Solving (PS) lessons:

1. Interpreting Algebraic Expressions (CD)
2. Building and Solving Linear Equations (CD)
3. Representing Linear and Exponential Growth (CD)
4. Representing Quadratic Functions Graphically (CD)
5. Interpreting Data: Muddying the Waters (PS)
6. Generalizing Patterns: Table Tiles (PS)

"At first I wasn't sure about the Problem Solving FALs. They don't always have an answer," she said. "But I think I like them best now. They are open-ended and allow for different opinions."

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"It's all about students being able to justify their reasoning," Merritt added.

Blankenship and Merritt both recommend that teachers begin with implementing concept development FALs since they are more structured. These lessons are intended to be used about two-thirds of the way through a unit, after students are taught the content involved. Problem Solving FALs can be used any time throughout the year. Both types of lessons bring to light common student misconceptions of high priority topics in mathematics.

Significant Results

Below is Blankenship's data for three CD FALs. 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 significantly increased their level of understanding of math concepts in all three of these FALs. For example, in the Building and Solving Linear Equations FAL shown first in the table, the average student increased from 1.3 (pre-lesson) to 2.6 (post-lesson), doubling their level of assessment.

PRE- AND POST-LESSON ASSESSMENT DATA OF STUDENT GROWTH			
Name of FAL	**Average Pre-Lesson Assessment**	**Average Post-Lesson Assessment**	**Average Growth Summary**
Building and Solving Linear Equations	1.3	2.6	1.3
Representing Linear and Exponential Growth	1.7	2.7	1.0
Representing Quadratic Functions Graphically	1.1	2.2	1.1

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