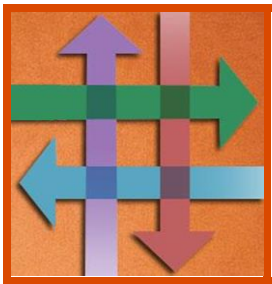

IT WORKED!

21st Century Coaching Skills Needed for 21st Century Math Classrooms

Angela M. Waltrup

Teacher Specialist for Elementary Mathematics

Frederick County Public Schools, MD

21st Century Coaching Skills Needed for 21st Century Math Classrooms

Many elementary school leadership teams are focusing school improvement efforts on the proper integration of technology in the elementary mathematics classroom. Technologies in the elementary math classroom are growing to include such things as Promethean Boards, projector devices, tablet devices, laptop computers, desktop computers, software, and applications. Math specialists are involved in coaching teachers in the proper integration of technology in the mathematics learning experiences that are offered to students on a daily basis. 21st century coaching skills, knowledge, and capacities are necessary for math coaches to possess so that the vision: *"digital learning environments are building upon the established base of pedagogical practice and advancing excellent classroom instruction in mathematics in order to ensure more effective instruction and greater student achievement*" can be realized. (NCSM & CoSN, 2015, p.2)

In my role as a district mathematics elementary specialist, I have the opportunity to support the district's elementary math leaders (coaches) with their school-based initiatives. In a conversation with one elementary math leader in late spring, she explained to me that she was beginning to plan an optional summer professional learning for teachers interested in exploring ways to integrate technology in the math classroom. She wanted to collaborate and work together to plan the professional learning in a tech-retreat format. By retreat, I am referring to a time and space for teachers to openly explore and focus on the specific topic of technology integration in the elementary math classroom. The summer professional learning would be designed as a math tech retreat. At times, technology-oriented professional experiences are fashioned in ways that the technology or digital learning tool overrides the math content and pedagogical practice. This math tech retreat was designed to front load and frame the integration of technology through instruction. This retreat model for teacher professional learning allowed for teachers to consider what a mathematics classroom that properly integrates technology "looks like." In preparation for the summer experience, we decided to adopt a classroom for one day, and videotape a lesson so teachers would have a window into a classroom that properly integrates technology. This video would serve as the opening experience for the optional summer math "tech retreat."

The video featured a lesson design where students engaged in a 5-10 minute engagement experience, small group Number Talk strategy work with the teacher, and several technology enhanced math stations for students to experience as they continued to develop their proficiency with the standard: *Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies using $ and ¢ symbols appropriately.* (2.MD.C.8)

Structuring a math "tech retreat" for teachers is one way math coaches can begin to support classroom teachers in developing a shared vision for digital learning environments. The math "tech retreat" structure we used is outlined in the accompanying chart (see below).

Today's math coaches may not have the classroom teaching experiences with the most recent digital learning technologies. It is important that coaches allow themselves a time to plan, implement, and reflect on lessons that they design for student learning. Videotaping of lessons by the math coach is a viable professional learning option for teachers to begin to develop a shared vision for digital math learning environments because it can be difficult to structure release time for all teachers to view a lesson

being taught in another math classroom. The video artifact from the coach can serve as a catapult into dialogue about best instructional practice in digital learning environments.

INTRODUCTION OF DIGITAL LEARNING ENVIRONMENTS IN ELEMENTARY CLASSROOMS

PART 1

1. Introduction of the Virtual Math Classroom:
   - Chart It Activity: What would you consider to be the ideal math classroom using technology to enhance instruction and learning opportunities for students?
   - Group Discussion and Chart Responses

2. View the video of the lesson.

3. Debrief and discussion of video: Respond to guiding questions on Padlet in groups:
   - What components of the lesson do you feel engaged students?
   - How does this classroom compare with a traditional math classroom?
   - Describe the role of the teacher in this lesson.

PART 2

1. Provide teachers with a planning template for a technology rich math classroom or have grade-level teams develop a common planning tool or template to support their planning and integration of technology in the math classroom.
2. Have grade level teams select a standard for a lesson they would like to collaboratively plan to incorporate technology.
3. Collaboration and planning with the math coach.

Brought to you by the NCSM Coaching Committee (December 2015)

Special thanks to the ems&tl: Elementary Mathematics Specialist & Teacher Leaders Project