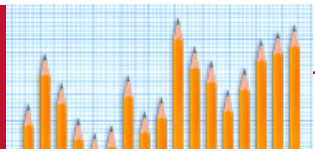

New technology and teacher training gets Englewood students excited about math

by Peggy Stewart

The staff members at Janis E. Dismus Middle and McCloud Elementary Schools in Englewood are determined to raise student achievement in their districts. That's why a group of talented teachers and supportive administrators decided to make a change this school year in how they taught math in sixth grade at McCloud and in seventh and eighth grades at Dismus. They adopted the Progressive Mathematics Initiative (PMI) developed by the N.J. Center for Teaching and Learning (NJ CTL), an organization which empowers teachers so they can be more effective in the classroom.

The pilot is in the initial stages, and while there is no substantive quantitative data yet, it's clear that within six short months, PMI has already had a significant impact on students, educators, and administrators. Educators believe that PMI's unique approach to teaching and learning will promote teacher growth and learning for all students.

PMI is a highly effective, common core aligned program that involves the use of free digital content and unique teaching methodologies.

The online digital content includes SMART notebook slides, homework, assessments, and unit plans—everything a teacher needs to support deep learning of rigorous content. And, it's teacher developed, reviewed and refined.

"You can tell teachers created PMI," observes Jin Park, a sixth-grade teacher. "It's presented the way I want my students to see it. I no longer need to spend endless hours searching for the right materials."

Though the materials for K–12 mathematics are free on the center's website, the teachers took NJCTL's methods course to learn more about the methodology used in PMI. As a result, when their students arrived in September, teachers were prepared to engage them in a way that they had not done so before—and the response has been resoundingly positive.

Teacher preparation included an introduction to the digital content, strategies for using formative assessment, social constructivism and effective collaboration. All teachers in the pilot report that they were extremely prepared to implement PMI and that the ongoing collaborative professional development has been "a lifesaver."

Dismus Site Administrator Rosemary Seitel notes, "The professional development the teachers received creates a network and engages teachers in professional learning that increases their effectiveness. These networks are committed to continuous improvement, collective responsibility and goal alignment."

Reactions and observations

I recently visited Dismus and McCloud. The schools are collecting data throughout the year; however, while waiting for statistically valid, quantitative data to determine student learning, administrators are examining other indicators that can inform their understanding of the impact of PMI on student learning and teacher practice.

The classrooms I visited were far removed from outdated classroom models where teachers speak and students listen. Instead, there was a synergy in the classrooms that has redefined student interaction with physical space, with peers and with the learning process.

"PMI encourages more 'mathematical talking'—students participate in total conversation about math," says Kay Mazza, a special education teacher.

The classes foster student engagement, deep learning and fluidity between teacher-student roles. Students take ownership of their work and an interest in the progress of their peers. They are encouraged to ask their peers for help and move from group to group to solicit or offer additional support. At times students act as teachers as they help their peers. Rycki Waldeck, an 18-year veteran eighth-grade teacher, comments, "Throughout my career I've been told that the kids should be working harder than the teacher and I finally feel like that's the case. The students are actively engaged in learning."

Instruction in a PMI classroom includes challenging problems that students solve together, enabling them to tackle more rigorous work. Student response systems gather formative assessment

What is the N.J. Center for Teaching and Learning?

The N.J. Center for Teaching and Learning (NJ CTL) is an independent, non-profit organization founded by NJEA in fall 2006. Its mission is to empower teachers to be leaders in the transformation of public schools so that all students have access to a high-quality education. NJ CTL is governed by an independent board made up of leaders in education, business, and philanthropy.

Currently, the center's major programs are the Progressive Science Initiative, the Progressive Math Initiative and CTOY, a leadership program involving former and current county teachers of the year. To learn more about NJ CTL, go to *www.njctl.org*.

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data throughout the lesson to quantify student understanding of the challenging concepts. The results set the pace for teaching and provide the feedback needed to make instructional decisions.

Students note that the technology makes class fun and that they like the pace. Eighth grader Brice said, "It goes fast—I really like that" while others note, "It goes slow; it helps me learn." The hand-held "clickers" used to capture formative assessment engage the kids so they can easily see their progress, and though the results displayed are anonymous, students can see if their peers "get it" as well. This leads to lots of dialogue and an energetic, engaging, noisy classroom. "My kids who need to really move and wiggle, now move and wiggle with focus!" says Waldeck. "They are engaged in their best wiggly way."

According to the teachers, the pace is faster than in prior years because the units are created for deeper understanding and less repetition, and the technology is helping them deliver content efficiently and assess student learning. Mazza adds: "The notebook slides are clear and concise and the white board helps the students focus—it's a tool that helps the students I serve, but it's really a tool for all kids."

Establishing a community of learners

The theme of community emerged loud and clear during focus groups of PMI students and teachers.

The students describe a class where they work together to help each other. The responses ranged from, "I like being able to help other kids" to "I was never good in math and I'm doing better because I get help from kids in class."

The teachers note that their ability to collaborate around student learning and work together as a team has been strengthened through using PMI. Soobin Ma, a seventh-grade novice teacher notes that "Using the same methods and materials have helped me learn with my peers in my first year of teaching."

"Throughout my career I've been told that the kids should be working harder than the teacher and I finally feel like that's the case. The students are actively engaged in learning."
Rycki Waldeck, eighth-grade teacher

Veteran teachers experience the same phenomenon. "I feel like I belong to a community and for a career that can be isolating and a subject matter even more so, there are people across my district, New Jersey, Colorado, Africa, Argentina, etc. that could be doing the same thing I'm doing," says Waldeck. "I can reach out and say, 'my kids aren't getting this, can you help?' Our learning community is now international—literally! I could have a community of friends that I might never meet face to face, but they are very close colleagues."

Waldeck is referring to the virtual collaboration that PMI promotes across schools, districts, states, and beyond. Seitel believes the teacher collaboration is building capacity for "accountable talk" meaning discussions are deeper and more directly focused on student learning.

Implementing systemic change

PMI encourages fluidity between teacher-student roles. Students take ownership of their work and an interest in the progress of their peers.

Englewood has numerous education initiatives designed to promote student learning. They include using technology to improve learning, data analysis to identify improvement in achievement, professional development to increase performance, and increasing articulation between schools in the district.

There is no magic bullet, however. Worthwhile change requires a systemic approach. Dismus Principal Lamarr Thomas notes "In addition to improving mathematics instruction, my goal for using PMI is to unify school initiatives." According to Thomas, PMI combines effective use of technology, best practices, student engagement, and vertical articulation—all the initiatives that people used to champion singularly. "PMI is unifying our school initiatives," he adds.

According to the teachers, it's changed how they plan, instruct and assess student learning and how they work with each other, within and across schools.

Long-term benefits of PMI

The PMI pilot is a solution to address student performance in mathematics at Dismus and McCloud. The long-term goal is to ensure that students have strong mathematical reasoning skills that will prove successful in more advanced mathematics classes and lead to more college and career opportunities.

But there are other long-term benefits for students and teachers as well.

Students are learning important life skills that will prove beneficial beyond PMI class: problem solving, collaboration, and responsibility for their work. These are the transferable skills that will promote other successful endeavors.

PMI helps build teacher capacity by removing barriers. The transparency of PMI can bridge the gap in teacher experience and preparation. Novice teachers work alongside veteran teachers to plan and assess student learning. It bridges the gap in experience, which supports all students in having access to a high quality teacher.

For more information about the N.J. Center for Teaching and Learning and PMI, go to *njctl.org*.