

SD teacher joins national push to improve math

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It's a problem that has stumped educators for years: Why do so many students master math in elementary school, only to bomb in the subject in middle and high school?

The answer to that complicated question might include the long list of popular math shortcuts that offer students short-term gratification while robbing them of their curiosity and ability to reason.

So says Osvaldo "Ovie" Soto, who is on a mission to revamp math education in San Diego County — student by student, teacher by teacher.

"As we advance kids in math, we provide more supports and hints, cheat sheets and tricks that deny them the opportunity to be puzzled or think for themselves," said Soto, a math teacher at San Diego's Patrick Henry High School and a mentor to dozens of educators. "I try to revive the curiosity in students."

A master teacher with Math for America San Diego, Soto is on the front lines of a growing effort to recruit, train and retain top math teachers in middle and high schools. The goal is to improve instruction — and ultimately raise student achievement — in a subject increasingly essential to employment and college admission.

The issue is so pressing that President Barack Obama mentioned it in his State of the Union address in January, lamenting that "the quality of our math and science education lags behind many other nations'." The Math for America San Diego effort begins to answer Obama's call to recruit 100,000 new math, science and technology teachers during the next decade.

The San Diego Unified School District recently adopted new graduation criteria that will require students to take advanced Algebra II to earn a diploma by 2016, so the nonprofit group's work is gaining even more relevance locally.

Kelli McMonigle, a sophomore at Patrick Henry taking geometry for the second time this year, knows she is under the gun to understand the subject. She doubted ever grasping geometry last year, but it's like a "completely different class this time," she said, offering a testimonial to Soto.

"When one of us asks a question, he pretty much stops the entire class so we all understand it," said Kelli, 15. "If we try to use a shortcut, he's like, 'Will you remember that in two years? Do you understand where the answer came from?'"

When Soto isn't teaching, he's roaming the county coaching fellows in the Math for America program — 16 newcomers to the profession and nine others who are getting their teaching credentials. He will work with a new crop of more experienced (and yet-to-be named) fellows during the next five years.

MATH STUDENTS NEED YOU

Math for America San Diego is accepting applications for master math teachers under a five-year fellowship program that includes a \$10,000 stipend.

Applicants must have 6-8 years experience teaching middle or high school math at a campus or district that serves disadvantaged students, and hold a master's degree in math or a related subject. Applications are due by April 22. For more information, visit the nonprofit's website

www.mathforamerica.org/sandiego

"I didn't realize that it can be pretty isolating being a teacher," said Alex Powell, a fellow who teaches at Morse High School in San Diego. "It's nice to have someone to talk to about teaching. I'm constantly trying to improve and figure out what works."

Less than two years on the job, Powell is taking Soto's advice by teaching students to learn math "the long way" by requiring them to show their work and defend their results.

It's difficult to reach students who have already given up on math. The majority of Powell's geometry students have failed algebra once or twice.

Knowing that many of his students aced math in grade school, Powell tries to reach back into their brains and renew their confidence.

It's a challenge across the county and nationwide. About 73 percent of San Diego County fourth-graders are proficient in math, according to 2010 state standardized test results. But only 16 percent of 10th-graders scored proficient or better in geometry.

"Real change in math education requires deep and broad involvement of whole departments, school site administrators, district personnel and knowledgeable and empowered teacher leaders," said Barbara Edwards, executive director of Math for America San Diego.

As part of the national Math for America network, the local organization is a consortium of Cal State San Marcos, San Diego State University, the University of California San Diego and five school districts in San Diego, Oceanside, Escondido, El Cajon and Vista.

"What differentiates our program from other professional development work is that we attend simultaneously to teachers' knowledge of mathematics, of student learning and of teaching methods," said Guershon Harel, a UCSD math professor who will oversee a \$1.4 million National Science Foundation grant recently awarded to Math for America San Diego.

The funding will pay for a new program to train experienced math teachers working at "high need" campuses or districts countywide. The idea is to provide top teachers with leadership skills so they can help even more teachers excel in math instruction.

The first Math for America started in New York City and has spread to San Diego, Los Angeles, Berkeley, Boston, the District of Columbia and schools throughout Utah.