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Solving the math problem

School district embraces Singapore math program

By Jami Cale Mar 16, 2008

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Reading, writing and Singapore math.

Those are the new R's for elementary students in the Wentzville School District. And the third might do away with arithmetic's dated reputation.

That's because district officials are shaking things up. The Board of Education last month approved its proposal to implement the Singapore math program, named after the tiny Asian nation that, in the math world, has made it to the big time.

The program uses reduced curriculum that emphasizes mental math and pictorial representation. Students are taught a "bar-model" technique, which is a way to draw bars that represent variables and provide a strategy to solve 80 percent of all elementary math problems. It allows teachers to teach lessons faster and spend less time reviewing, administrators said.

Basically, the days of math as many in Wentzville once knew could be over.

"Once you see it in action, have the training and the exposure, you think, 'Good grief, why didn't I think of that?'" said Susan Gauzy, assistant superintendent of curriculum.

It's because of a number of reasons, said Steven Leinwand and Alan L. Ginsburg in their Educational Leadership Magazine article, "Learning from Singapore Math." To name a few, the United States has no common vision for

school mathematics; teachers must follow guidelines of textbooks, school curriculum, state curriculum and state tests; and schools lightly touch on many topics, rather than narrowing and intensifying their focus, they said.

What's the result?

"When I taught math, it was like pulling teeth to get students to do word problems," said Gregg Klinginsmith, district curriculum coordinator, who taught math for five years. "You have to be energetic about math and relate to the kids. Math classes aren't always the favorite thing, or parents say, 'I'm not good at math,' so kids think they aren't. These are the kinds of hurdles you have to overcome as a math teacher, to give kids the confidence to know they can do it."

Then there are the test scores. Singapore ranked first in the Trends in International Mathematics and Science Study in 1995, 1999 and 2003. Results from 2007 are pending. Yet, according to the National Center for Educational Statistics, Missouri fourth-grade students in 2007 ranked 29th in the nation in math, and eighth-grade students ranked 32nd in the nation in math.

When asked about Wentzville elementary students' test scores, Gauzy said this: "We would like for our math scores to be comparable to the best districts in the state, and we are not at that point. We rank right at state average, and that's not our goal."

Just more than 600 schools in the United States and many home schools currently are using Singapore math, according to Leinwand and Ginsburg. The only school using it in the St. Louis region is City Academy, a private school founded in 1999 with 125 students.

Wentzville School Superintendent Terry Adams, with a goal that the district become competitive in math, science and technology, last spring suggested using the program in Wentzville. In the fall, the district started an after-school tutoring program utilizing Singapore math. Twenty-five teachers were trained in

the teaching method and gave positive reviews, Gauzy said. Students who were surveyed said all students should have the opportunity to learn Singapore math, she added.

The district is planning to implement the program in first through fifth grade in three phases. The first phase will include a week-long training course this summer for 100 volunteer elementary teachers. Of the first- through fifth-grade teachers, 113 of 240 already have volunteered, Klinginsmith said. Teachers in lower grades will be given priority, as their students will have the most exposure to the program by the time they reach middle school. Those teachers will then train an additional 100 volunteer elementary teachers in summer 2009, and the remaining teachers and any new teachers will be trained in summer 2010. Parents' nights at each of the elementary buildings will help answer parents' questions and help them learn the program, too, officials said.

Although unconventional, Gauzy expects Singapore math to impress adults across the board.

"When you watch teachers go through the training, you see some of them look for the first time like they really understand math conceptually, not just by memorizing. I think parents are going to find that the same for them," she said.

As for the students, those in lower grades might find that blocks and beads have replaced thick textbooks. Those in higher grades might find themselves completing problems expected of sixth-, seventh- and eighth-grade students. Such results have been reported by teachers in Massachusetts, where the program steadily is growing in popularity. According to the National Center for Educational Statistics, fourth- and eighth-grade students there ranked first in the nation in math in 2007 .

If district officials have it their way, then Wentzville students will be close behind. But the real goal isn't higher test scores, they said; it's that students have the opportunity to think mathematically.

That could be one math problem Wentzville has found a way to solve.

"I really think it's going to be fabulous," Klinginsmith said.

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