

School adopt math program from Singapore

Linda Conner Lambeck

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The Greenwich and Bridgeport public school districts may be worlds apart when it comes to academic outcomes, but the two Fairfield County school districts have at least one thing in common: Singapore math.

A Singapore math program, an instructional program developed to emulate the way math is taught in a nation that routinely gets top math scores on international tests, is in its second year in Greenwich and its third year in Bridgeport.

Both districts say it remains a work in progress.

"Any program takes five to seven years to be fully implemented," Thomas Nobili, a teacher at Bridgeport's High Horizons Magnet School said. "So what we have is an implementation gap. Each year, I see the kids coming in a little bit further than the previous year."

Greenwich school officials said it had an uncomfortable start.

"There were moments where we were in triage mode," Irene Parisi, Greenwich assistant superintendent of curriculum, said. "But what we saw in students was amazing. We've never seen this amount of discourse and probing in the classroom."

The Singapore method of math instruction is popping up more and more in schools and districts around the country because, in addition to working so well in Southeast Asia, it is also aligned to Common Core curriculum standards that public schools now follow. The teaching method emphasizes reasoning skills over rote memorization. It is aimed at helping students understand the concepts behind the numbers.

Ridgefield, North Haven, New Haven and a number of private schools including Easton Country Day School are also using it.

Casey Skillins, a math specialist for Easton Country Day School, said it makes math more dynamic.

"It allows them to think like detectives versus robots. It makes math more exciting when you think about it as opposed to memorizing and regurgitating."

Greenwich uses the American version of Singapore math -- a book called Math in Focus, published by Marshall Cavendish Education. Parisi said a committee identified it as the best resource for Greenwich to use when it realigned its math curriculum. The new program was approved by the school board in the spring of 2013 and implemented first in the elementary grades and this year in

the middle schools.

"We had a sense of urgency," Parisi said. "We couldn't afford to fall behind."

In Bridgeport, the system was brought in by former Schools Superintendent Paul Vallas, along with a new reading and science curriculum.

It was a lot to absorb at once, according to Liz Capasso, a middle school math teacher at Tisdale School in Bridgeport.

"I am a nerd. I love this stuff," Capasso said. "But elementary teachers had to do everything new at once. They are trying really hard, but need more support."

What it is

Ricardo Rosa, Bridgeport's math director, said the Singapore Math curriculum covers fewer topics, but in more depth.

Instead of teaching students how to multiply fractions, then move on, teachers stay on the topic, using three-dimensional models, illustrations, and finally abstract numbers until students understand it fluently. Teachers ask a lot of "why" and "how do you know" questions to get to answers.

"It promotes multiple ways to compute," Rosa added.

Interim Schools Superintendent Fran Rabinowitz said it is pushing instruction in the right direction and raising standards.

"I still see far too many worksheets out there that require one word answers," Rabinowitz recently told the school board's curriculum committee meeting. "I want higher standards in each classroom. I am not sure we are taking kids as far as they can go."

There are worksheets in Nobili's class at High Horizons, but they are supplemented with thousands of green plastic tiles and cubes that represent numbers and fractions. Working in groups students use the "manipulatives" to build models that help them figure out what 2 times 2.56 equals and looks like.

"OK, now lets try 3.3 times 2.1," Nobili said, three problems into the 45 minute math lessons.

Later, Nobili said he has always been a proponent of teaching to more depth.

"I want them to understand it, not just do it," he said. "This will help them figure out where the decimal point goes and why."

He, too, said more teacher training is needed. Staying on topics for a long time goes against a teacher's innate desire to finish everything that they have planned.

Getting there

At Tisdale, Capasso said the concept of Singapore math is great. The execution of it, more difficult.

"The problem is there is so much to learn that it is hard to get to everything," she said. That leads to some skills going untaught until the next grade.

"They are coming in with gaps that are different from the past," Capasso said. "Maybe there are more hours in the school day in Singapore. "Maybe it's that the culture is different. It is a lot for them."

She likes having her eighth-graders leave her with a solid grasp of linear equations and finds it frustrating that she is not sure they all will.

That said, Capasso said she likes getting students up on their feet to solve problems on the smart board and discussing how they arrived at answers.

Judi-Ann Freemantle, 13, a Tisdale student, called math a little hard, but admits to liking it.

"I like to solve things," she said.

In Greenwich, Sheila Civale, the district's science, technology, engineering and math coordinator, said she likes that conversations are occurring in math class that lead to a much deeper understanding than simply completing a worksheet of computation problems.