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D.C. teachers adopt Singapore math way

Bill Turque | Washington Post

WASHINGTON – It's 9,688 miles to Singapore from Katrina Abdussalaam's third-grade classroom. Each morning, she tries to edge her students closer to those from the Asian city-state known as a world leader in math.

She begins one recent day with "the sprint."

Students get one minute to work on a sheet with 30 basic multiplication and division problems. They're told to get through as many as they can. After a short break, there's a new sheet and another 30 problems. Later, they stand and clap, counting by fours to 40. After a strong start, some hesitate as the numbers get higher.

"We need some practice," Abdussalaam said.

Bruce-Monroe Elementary School-Park View is one of about 2,000 U.S. schools in the past decade that have adopted the Singapore approach to math, which stresses mastery of basic skills and a few essential ideas, such as place value and part-whole relationships.

A close look at the D.C. school points up the challenges involved in transplanting a "math miracle" from Asia. These include high levels of student mobility, instructor turnover and a curriculum that proponents say requires a depth of understanding most U.S. elementary teachers don't acquire in their math training.

In the most recent Trends in International Mathematics and Science Study, Singapore ranked second in the world in fourth-grade math, just behind Hong Kong. The United States placed 11th.

Even though the Singapore method has won acclaim from researchers, no large U.S. school system has fully embraced it.

Although Bruce-Monroe staff members say the Singapore system has generated enthusiasm among students, those heightened spirits aren't yet reflected in the data. Standardized test scores are lower than they were before the new curriculum was adopted. On the 2009 D.C. Comprehensive Assessment System, the first citywide test after the changeover, pass rates remained virtually unchanged, with 49 percent of students achieving proficiency. Last year, the pass rate at the school plunged to 23 percent. That decline was steeper than a citywide drop.

"The scores were very disappointing," said Nuhad Jamal, Bruce-Monroe's instructional coach.

D.C. officials regard elementary math as a bright spot in their school reform efforts. The National Assessment of Educational Progress, given to fourth- and eighth-graders every two years, showed that the D.C. public school system was the only one of 11 urban systems tested that made significant



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Renard Gray, 8, reacts to a problem on a flashcard, part of a much-vaunted math instruction system from Singapore.

gains in math at both grade levels from 2007 to 2009.

But Jamal said she was troubled by the number of students who seemed to enter fourth grade with a poor grasp of basic number operations. The city's standard text, "Everyday Mathematics," emphasizes games and conceptual understanding – a good fit only if children have strong fundamental skills, Jamal said.

At a 2007 conference in Atlanta, she said she was "blown away" by a presentation on Singapore math. She liked the austere simplicity of the slender textbooks, which used bar diagrams to show students how visual images can help solve challenging two-step word problems, laying the groundwork for algebra:

Mr. Anderson gave two-fifths of his money to his wife and spent one-half of the remainder. If he had \$300 left, how much money did he have at first? (Answer: \$1,000)

And unlike "Everyday Mathematics," which "spirals" through subjects – covering them and then returning later – Singapore goes slow and deep, requiring mastery before moving on.

Jamal and Bruce-Monroe Principal Marta Palacios received clearance to make the switch in the 2008-09 school year from then-Chancellor Michelle Rhee. But in 2008 Rhee, citing the poor condition of its campus, closed Bruce-Monroe and merged it with nearby Park View Elementary, leaving Palacios to implement a new curriculum while striving to establish what was effectively a new school.

"It was a nightmare," Palacios said.

Other factors complicated the rollout. Washington's student population is highly mobile, whereas the Singapore curriculum builds carefully from year to year, making it harder for new arrivals in the upper elementary grades or at mid-year.

And without Spanish versions of the Singapore textbooks in a school where nearly 60 percent of the 400 students are Hispanic, teachers had difficulty getting ideas across.

Even in English, Singapore math does not come easily to many American teachers. Experts say it takes up to two years to learn the system fully. The no-frills textbooks lack teacher editions and other aids, and Singapore's elementary instructors receive significantly more math than their U.S. counterparts, who are often generalists.

"The books themselves are very demanding of the teachers and of the system in terms of professional development," said Yoram Sagher, a professor of mathematics at Florida Atlantic University who ran Singapore workshops at Bruce-Monroe during its first year of implementation.

Finally, there is the challenge of teacher retention. Washington's system, like many urban systems, churns through teachers: One study of payroll records found that 76 percent leave in five years or less.

"It affects us tremendously," said Palacios, who estimated a third of her faculty has turned over since she installed Singapore Math.

Some Singapore advocates said the method nevertheless has helped. The emerging Common Core national standards, to which Washington and 44 states are committed, echoes Singapore's emphasis on mastery of fewer subjects at greater depth.

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