

Extra time in math class has its minuses, scholar says

July 21 2014, by Shara Tonn



(Phys.org) —Eric Taylor, a PhD student at Stanford University's Center for Education Policy Analysis, found that students who spent more of the school day in math class had higher math scores, but the gains did not last for long.

Eric Taylor, a PhD student who studies the economics of education at

Stanford's Center for Education Policy Analysis, found that increasing the amount of time struggling students spend in math class improved math test scores, but the gains did not last in the long run. Spending more of the school day in math class also may have had unforeseen costs.

The most recent National Assessment of Educational Progress (NAEP) labeled two-thirds of U.S. students aged 14 to 15 as "not proficient" in math. They would, for instance, have had trouble solving a problem with unit conversions, such as converting fluid ounces to quarts, or identifying lines of symmetry in shapes.

Administrators in Florida's Miami-Dade County Public Schools – the fourth largest school district in the United States – chose to attack this issue in part by having some middle-school students take an extra math class in their 6th grade schedules.

After a year of having two [math classes](#), the students went back to a normal schedule of just one.

Students were identified for the extra class if they scored below the 50th percentile on the 5th grade state math test. Students who scored above the cut-off had just one math class, which gave Taylor the opportunity to design a rigorous study around the intervention.

"Think about a kid who scores 249 versus a kid who scores 250 – those kids are not different," he said, "but a small difference in scores determined who took two math classes and who took one."

For the roughly 80,000 middle-school students in the county, Taylor obtained data on their annual test scores, class schedules and demographics from 2003 to 2013. Comparing students who scored just above and just below the cut-off score, Taylor performed an extensive battery of statistical tests.

The first question of the study was simple. If kids spend more of their school day in math class, do they learn more math? Yes, they do. At the end of the year, those students scored higher than their peers who had only one math class. But the second question is more important.

"There are these big gains, but do they last?" asked Taylor. And the answer to that question is apparently "No." By high school, the students who had taken two math classes in 6th grade were in the same position as those who hadn't, which raises the question of whether the policy is a good one.

"It ultimately depends on whether there are other longer-run effects like helping students get to college or succeed in college. We won't know until the students get a little older," said Taylor. And on the other side, what are the costs of the intervention?

The extra math class had replaced a physical education, arts or foreign language class for each student, and in the short run, those students missed out completely on those subjects. "How we should take a student's school day and divide it between reading, math, art, science and PE is an important policy question," said Taylor.

Cutting out certain subjects may lead to negative effects in the long run. Recent research, for example, has found that middle school boys who miss out on PE have an increased risk for obesity.

Many other educational interventions, from smaller class sizes to summer school to better teachers, follow this fade-out pattern – big gains in test scores that then start to decay. That does not necessarily mean the interventions didn't help [students](#). Some studies show that fading test score benefits can be followed by other benefits in the long run.

"We care about [test scores](#) as a way to measure whether kids are on the

right track today, but what we ultimately care about is kids being happy and healthy, being good citizens and having access to good jobs," said Taylor. And at least for now, an extra math class may not be the best way to get there.

Provided by Stanford University

Citation: Extra time in math class has its minuses, scholar says (2014, July 21) retrieved 27 April 2024 from <https://phys.org/news/2014-07-extra-math-class-minuses-scholar.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.