

# Gender gap disappears in school math competitions, study shows

February 25 2013

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A new study shows that girls compete evenly with boys after the opening round of math competitions. Credit: Mark Philbrick/BYU

The idea that boys are better at math and in competitions has persisted for a long time, and now we know why: Nobody bothered to schedule the rematch.

Most school math contests are one-shot events where girls underperform relative to their male classmates. But a new study by a Brigham Young University economist presents a different picture.

Twenty-four local elementary schools changed the format to go across five different rounds. Once the first round was over, girls performed as well or better than [boys](#) for the rest of the contest.

"It's really encouraging that seemingly large gaps disappear just by keeping them in the game longer," said BYU economics professor Joe Price.

Price co-authored the study with the University of Miami's Christopher Cotton and Rutgers' Frank McIntyre. Their report is published by the *Journal of Economic Behavior & Organization*.

In the contest, students were paired against a classmate to see who got the most questions right during a 5-minute quiz. In case of a tie, the student who finished first won. The winner earned raffle tickets for a small prize.

Because the schools shared past test scores with the researchers, they could compare how similarly talented boys and girls performed. Even though these matches look even on paper, for some reason boys have the edge when it's the first foray into a competitive setting. On a test worth ten points, it usually amounts to a one-point edge for boys in the initial round.

"We don't know if it's boys getting excited and over-performing or if it's girls being too uncomfortable with the situation," Price said.

But here's another twist: Six classrooms de-emphasized the speed component. Ties weren't decided by who finished first. And though

there was still just five minutes on the clock, the students were told, "It's not a race."

With those two small adjustments, girls competed evenly with boys from the start. BYU math professor Jessica Purcell, who was not involved with the study, wasn't surprised that the format adjustments resulted in more parity.

"In mathematical settings without time pressure or competition, such as classes I have taught or classes I have taken, males and females seem to do equally well," said Purcell, a recipient of the prestigious Sloan Research Fellowship.

Since boys' competitive advantage is so short-lived, the study authors suggest that a little encouragement could go a long way.

"What motivated us was how to get girls to thrive in a competitive environment," said Price, noting that he has two daughters. "You might guess that [girls](#) would shy away from competitive work environments. What our results would hint is that if you convince them to stick around and give it a shot, they will acclimate and do just fine."

Provided by Brigham Young University

Citation: Gender gap disappears in school math competitions, study shows (2013, February 25) retrieved 11 May 2024 from <https://phys.org/news/2013-02-gender-gap-school-math-competitions.html>

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