



3-4-9 Article 2 on Implicit Bias

Researchers: Teachers begin favoring boys in math as early as kindergarten

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Gaps between boys and girls in math begin by kindergarten, according to new research. The study was released Thursday by the American Educational Research Association (AERA). It also found that teachers expect that boys are stronger in math than girls. They consistently underestimate girls' math skills, even when boys and girls behaved in similar ways in the classroom.

The Gender Gap

The gender gap starts early among math students from wealthy families. However, it spreads quickly to all students throughout elementary school, and all schools are affected, according to the report.

"If schools are addressing biases, it's not happening effectively," said Joseph Cimpian. He is the lead author of the study and a professor of economics and education policy at New York University.

The study looked at two groups made up of several thousand students in 1998-1999 and then 2010-2011. They were taken from a federal government study that tested students' math skills and also asked teachers how good the students were in 10 specific areas.

Cimpian said there has been much focus on getting girls interested in science, technology, engineering and math (STEM). But even 12 years later, the gender gap is still there. There also haven't been any changes in how teachers are seeing girls. He called this "alarming."

Although there is some evidence that shows that the gender gap closed on state exams, the AERA study did not find this. The government tests may detect problems where state tests do not. In addition, teachers and students put much more time and effort into preparing for the state tests, according to the AERA report.

How Teachers See Girls

"There still exists a notion that math and science are not really 'girl' subjects," said math tutor Dina Weinberg of Bronx, New York. She is a former elementary school teacher and the mother of two daughters.

Elementary school girls are better behaved, which can affect how teachers see them, Weinberg said. Without meaning to, teachers may call on the boys more often to solve problems, she added.

Parents and educators should become aware of their biases and behaviors, said Reshma Saujani, CEO of Girls Who Code. They may not be even aware of them. She said it's an important first step to lessen the gender gap in math.

“I think teachers often have the best intentions — they’ve picked a career that’s all about helping our young people. But we’re all influenced by a culture that says that subjects like math and computing are for boys,” she said.

It's in the Culture

These messages are everywhere, she said. Men are shown as computer programmers or scientists on television, and there is even a popular teen girl T-shirt that says "Allergic to Algebra.”

“Our culture is telling all of us — teachers included — that math and computing is not for girls,” Saujani said. “It’s no wonder it’s showing up in our classrooms.”

On average, boys and girls do the same in math when they first enter kindergarten. There is one exception, though. Among wealthy families, boys do better than girls, according to the report.

The exact reason for this isn’t known, Cimpian said, but it points to other research that shows that wealthier families “gender” their children at a young age. These include things like organized sports for boys and dance lessons for girls. Putting children in boy activities and girl activities might make the gender gap in math worse, he said.

New Training For Teachers

Cimpian suggested helping teachers get over the idea that girls aren’t as strong as boys in math. Teachers spend so much time with students, it’s a really important group to target, Cimpian said.

Girls Who Code provides training for teachers so that they can expect and deal with these issues. The organization trains teachers to identify stereotypes. It also is spotlighting women in tech so students see good role models.

We also need to address culture head on and change the perception of what a mathematician or a programmer looks like and does,” Saujani said. She pointed to a series of videos that Girls Who Code released last spring. They highlight stereotypes that keep women out of tech.

“This problem sounds daunting, but I believe it’s absolutely solvable. In the last 30 years, we’ve seen the gender gap close in career fields like law and medicine,” Saujani said. “I think we can see the same thing happen in computing and related fields.”

People must be willing to act and make girls a priority.