

# Gender bias found in student ratings of high school science teachers

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A study of 18,000 biology, chemistry and physics students has uncovered notable gender bias in student ratings of high school science teachers.

Researchers at Clemson University, the University of Virginia and Harvard University have found that, on average, female high school science teachers received lower evaluations than their male counterparts even though male and female teachers are equally effective at preparing their students for college.

The findings appear in *Science Education* online in the research paper, "Unraveling Bias from Student Evaluations of their High School Science Teachers."

Most notably, say the researchers, the physics students in the survey showed the largest bias toward female physics teachers. In biology and chemistry, male students tended to underrate their female teachers, but female students did not. In physics, both male and female students tended to underrate their female teachers.

"The importance of these findings is that they make it clear that students have developed a specific sense of gender-appropriate roles in the sciences by the end of high school," said Geoffrey Potvin, assistant professor of engineering and science education and the department of mathematical sciences at Clemson.

"Such a sense of what are and what are not appropriate roles for males and females in science likely impacts the choices students make when they consider their college studies," said Clemson researcher Zahra Hazari, also an assistant professor in engineering and science education and the department of mathematical sciences. "Such a bias could negatively impact female students and contribute to the loss of women in science, technology, engineering and mathematics."

Potvin and Hazari collaborated on the study with Robert H. Tai of the University of Virginia and Phillip M. Sadler of the Harvard Smithsonian Center for Astrophysics.

The survey was conducted at 63 different colleges and universities across the United States while students were beginning their college science studies. It asked students to reflect on their high school science experiences. Most of the questions focused on the content coverage in their high school classes, the classroom techniques used by their teachers, the nature and type of laboratory experiences as well as students' academic and family backgrounds. The data was then analyzed using quantitative statistical techniques.

Other factors also contributed to higher teacher ratings. Some were connected to the ways in which teachers presented material to their classes. For example, in each subject area, teachers who related the course material to real-world examples tended to receive higher student ratings.

The authors were able to show that while a few differences in teaching style do exist between male and female teachers they had no correlation with the gender-bias ratings.

The authors also found evidence that male and female teachers are equally effective at preparing their students for college. Students in the

survey performed equally well in college science whether they had a female or a male high school science teacher. Also, the rate at which female teachers produce students bound for college-level science study appeared to be identical to the rate of their male counterparts.

Source: Clemson University

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