College women underperform on tests when in the minority

College women perform markedly better on math tests when their fellow test-takers are all female than when they are all male—even when they believe their test scores will be kept private from classmates, according to a study in the current issue of APA’s Journal of Educational Psychology (Vol. 95, No. 4).

In fact, the women who tested with all-male peers performed nine percentage points worse than women who tested with only females present, according to the study by psychologists Michael Inzlicht, PhD—a postdoctoral research scientist at New York University’s Steinhardt School of Education—and Talia Ben-Zeev, PhD, an assistant psychology professor at San Francisco State University. The female test-takers were tested beforehand to ensure they statistically matched in ability.

The findings point to the negative impact an environment that is perceived to be threatening or stereotyped can have on a person’s intellectual performance, speculates Inzlicht, the study’s lead researcher. This is a particular problem for female students in math and science classes, given that they are often the minority and face negative stereotypes of being inferior to men, Inzlicht explains.

“I was surprised to find that the sex of a person in a room could have such an effect on someone’s performance,” Inzlicht says.

Researchers gave 54 women in the study a 20-item math test to take either in a room with two other women or two men. Some women were told that their test scores would be reported to their peers; others were told their scores would be kept private and to place the test in a sealed envelope. In both situations, women scored lower on the tests when males outnumbered them.

Inzlicht said the study sought to gauge, and in his view confirmed, that women in such situations respond to a stereotype threat—in which people underperform because they are worried about being negatively stereotyped—a theory pioneered by Stanford University’s Claude Steele, PhD. In turn, this can hurt their academic performance, he adds.

As well as perceiving they are stereotyped, people in the minority often feel responsible for representing their group, thus pressuring themselves to perform up to high standards, studies have shown. The resulting anxiety can lead them to perform beneath their potential—such was the case, Inzlicht believes, among the college women in his study.

So how can educators counter this? Inzlicht says that same-sex classrooms may be one solution—although he doubts it is a pragmatic one. He recommends classroom interventions that combat female students’ negative perceptions of their math ability by emphasizing that math is a skill that can be learned and improved over time.

—M. DITTMANN