When in the Minority

By James Devitt

College women perform nine percentage points lower on math tests taken in settings where they are in the minority than do those tested in single-sex environments, according to a study co-authored by Michael Inzlicht, a post-doctoral research scientist at the Steinhardt School of Education.

The study, which explored the impact of stereotypes of women as less competent than men in math, was published in the Dec. 1 issue of the American Psychological Association's Journal of Educational Psychology. Talla Ben-Zeev, an assistant professor at San Francisco State's Department of Psychology, was the study's co-author.

The study's authors also found that the differences in performance remain even when women know that no one else will see their test scores. According to the researchers, these results indicate that when outnumbered by men, women's academic performance may be negatively influenced even when not engaging in overtly public activities, such as speaking up in class or participating in group projects.

Michael Inzlicht

Joshua Aronson

hardt's Department of Applied Psychology, co-authored the landmark studies on stereotype threat.

"Previous research shows that the fear of being stereotyped in a public setting can diminish one's potential, essentially allowing stereotypes to be fulfilled inadvertently," Inzlicht said. "Our findings suggest the impact of this fear is much broader: being in the minority is detrimental to intellectual achievement even if others are unaware of how stigmatized groups are performing."

In their study, Inzlicht and Ben-Zeev used female and male undergraduate students at Brown University. The study's subjects took a difficult 20-item math test. Each female subject took the test in the same room with two others—either two other women or two men. To make distinctions between public reporting of math scores and keeping the results private, some subjects were told that their test scores would be reported to other members of the group while others were asked to place their answers in an envelope that bore no identifying information and to seal the envelope.

Under both public and private conditions, the average score for women taking the test with two other men was 34 percent, whereas the score for women taking it in single-sex environments was 43 percent. The scores included penalties for incorrect answers. The differences were statistically significant. To ensure that performance was not due to differences in ability, the researchers pre-tested mathematical aptitude and found no significant differences among the subjects.

Inzlicht and Aronson are now working together on a number of other projects related to stereotype threat and minority environments. In one line of research, they're exploring how stereotype threat—and stigmatization more generally—can affect how people think of themselves and whether these thoughts correspond with reality and remain over time.

"Our results show that privacy cannot armor students from the assaults posed on them by stereotypes or by being outnumbered."

"Our results show that privacy cannot armor students from the assaults posed on them by stereotypes or by being outnumbered," said Inzlicht, the study's lead author and member of Steinhardt's Department of Applied Psychology. "Even when they knew their math scores would not be revealed, women who were outnumbered by men while taking the test got fewer items correct than did women who took the test in a single-sex environment."

Inzlicht said that the results may also shed new light on the impact of stereotype threat, a condition in which individuals underperform because of worries about being negatively stereotyped. In 1995, Joshua Aronson, an assistant professor in Steinhardt's Department of Applied Psychology, co-authored the landmark studies on stereotype threat.

December 15, 2003

NYU Today