



Stereotype Threat: Causes, Effects, and Remedies: Information Sheet



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Lauren is a bright and energetic 10th grader who enrolled in an academic track that allowed her to take advanced courses in English and mathematics. She excelled in her English class but her math teacher noted that she did poorly on important tests and that her PSAT scores were much lower than expected. She seems to get very nervous and often runs out of time during her math exams, particularly when some of her male peers jeer her and remind her that girls often do worse than boys do in mathematics.

Lauren's experience is not unique and unfortunately is illustrative of the experiences that some young girls face. One explanation for Lauren's poor test performance may be *stereotype threat*, which occurs when individuals are faced with situations in which they risk being personally reduced to a stereotype targeting their group. Specifically, Lauren is made aware by some of her peers of the stereotype suggesting that girls do worse in math than boys. Because of this awareness, it is possible that Lauren also fears being personally reduced to this stereotype during her math and science exams. Subsequently, rather than focusing on answering each item on the exam, Lauren becomes distracted by her fears of not doing well and may second guess her answers, which ultimately may impair her performance.

Effects of Stereotype Threat

As researchers continue to show the negative effects of stereotype threat in experimental and real-world settings, educators can benefit from becoming aware of stereotype threat and the mechanisms behind it (O'Brien & Crandall, 2003; Schmader & Johns, 2003; Steele & Aronson, 1995). As with many psychological phenomena, identification and understanding are the first steps in remediation. Researchers have identified many potential mechanisms of stereotype threat, which may include anxiety, psychological arousal, domain identification (i.e., a belief that a particular subject area is important to your self-concept), overcompensation (i.e., putting in detrimental amounts of effort), and/or other affective (i.e., emotional) and cognitive responses. So, for instance, Lauren may have experienced increased arousal about performing as well as the boys in her class and performed more poorly as a result of this increased arousal. Ironically, it is the added effort to disprove the stereotype that leads to underperformance on difficult tests that are already pushing the cognitive limits of the test taker. Thus, Lauren's knowledge of the gender stereotypes related to mathematics may have led her to spend more time on the task as a result of second guessing herself, double- and triple-checking her answers, and changing correct answers to incorrect ones.

In addition to decreased performance on science, technology, engineering, and math (STEM) related tasks, stereotype threat has other outcomes as well. Importantly, stereotype threat may be related to the decreased presence of female (versus male) students who pursue STEM-related majors and ultimately, stereotype threat may contribute to women's underrepresentation in STEM-related majors as well as career fields.

Preventing Stereotype Threat

Research also has identified ways in which stereotype threat might be reduced (Aronson, Quinn, & Spenser, 1998; Davies et al., 2005; Martens, Johns, Greenberg, & Schimel, 2005; Marx, & Roman, 2002; Spencer et al., 1999). Such strategies include:

- Providing examples of role models who succeed in STEM;
- Reframing tasks so that individuals do not believe there are group differences;
- Enabling threatened individuals to affirm their talents in other domains; and
- Providing alternative explanations for experiencing nervousness or anxiety.

So, for instance, providing Lauren with examples of girls and women who have performed successfully in the area of math (either through face-to-face contact or even just reading a short biography about an individual) might reduce the impact of stereotype threat on Lauren's performance (Marx, & Roman, 2002). This easy manipulation serves as a practical and feasible way for educators to aid in the reduction of stereotype threat and work toward equalizing the gender playing field. Another strategy might be to provide Lauren with an alternative explanation for her arousal on the test (i.e., an external rather than internal attribution; Ben-Zeev, Fein, & Inzlicht, 2005). An example of this may involve explaining to Lauren that the anxiety she may feel while working on the exam is directly related to her knowledge of the negative stereotypes and not a reflection of her ability to perform well on the exam (Johns, Schmader, & Martens, 2005). This provides Lauren with an external attribution explanation that may enhance her attention on completing the task and decrease her stress-related arousal.

In short, there are a number of ways in which to reduce the negative effects of stereotype threat. These strategies are critical to diffusing threatening situations, resulting performance differences, and the uneven distribution of majors and careers that exist between male and female students in STEM-related fields (NSF, 2000).

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Citations

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