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The Write Way to Reduce Test Anxiety

Two new research studies offer a simple approach to improving examination performance

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By Peter Gwynne, *Inside Science News Service*

(ISNS)—Do you suffer serious anxiety when you approach an important exam?

Researchers at the universities of Colorado and Chicago suggest a simple way to reduce the stress: Write about your feelings shortly before the exam.

The [University of Colorado](#) at Boulder team developed a writing exercise with particular value for women in college taking a course in physics—traditionally a subject that attracts far more men than women and one in which even many women expect males to outperform females.

"We asked women and men in the course to write in the first and fourth weeks," said team member Tiffany Ito, an associate professor of psychology and neuroscience at CU-Boulder. "And we saw a beneficial effect for the women on each of four exams and on the final course grade."

The team, headed by professor Akira Miyake, reported its results in November in the journal *Science*.

The [University of Chicago](#) group's writing assignment significantly improved high school and college students' scores on math tests. Students so anxious about test-taking that they usually failed to perform up to their ability on tests notched the greatest improvement.

"One small snippet of writing can be enough to boost performance," said Sian Beilock, associate professor in psychology at the University of Chicago. "Writing for eight or 10 minutes before the test put anxious students on a par with students who didn't worry."

Beilock and her colleague Gerardo Ramirez write about their survey in [today's issue of Science](#).

"The more students worry, the worse off they are in terms of their performance. It can drop by 10–15 percent in high-pressure tests," Beilock said. "In high school classrooms, having test anxiety can mean scoring three-quarters of a grade point less."

Women taking science and mathematics courses face an extra source of concern: the gender gap. Many female students worry that their work in class and exams will confirm the stereotype that men perform better than women in those subjects.

"That creates some fear, stress, and anxiety, especially during exams," said Miyake. "Those women are sitting in a class consisting of predominantly men, and they might wonder if the men buy into the stereotype."

The two research teams encouraged students to focus on different topics in their writing. The Colorado group's exercise encouraged "values affirmation." The group asked the students to write about their most personal values, such as friends and family.

"We did not worry about how well written their exercises were," Ito noted. "Affirming the values was the important part."

Beilock and Ramirez took the opposite approach. They told students to write about their anxieties and fears over the forthcoming tests.

"It might be counterintuitive, but it's almost as if you empty the fears out of your mind," Beilock said. "You reassess that situation so that you're not as likely to worry about those situations because you've slain that beast."

In each case the prescription worked. In the Colorado physics course, Ito reported, "the process increased the number of women getting Bs and decreased those getting Cs."

Women who tended to believe that men were better than women at physics showed the greatest improvement.

Meanwhile, nervous high school and college students who took Beilock's writing assignment scored a grade point higher in their tests than those who didn't take it.

"These studies together really show that what students show on a test may not be indicative of their abilities," Beilock said. "It's really important to come up with interventions that can help all students."

"Writing is a well-documented exercise to do for stress and anxiety," added Marilyn Wilcher, senior director of [Massachusetts General Hospital's Benson-Henry Institute for Mind Body Medicine](#), who did not participate in the research. "It helps people to put things in perspective."

How does the process work? "At the general level it's thought to bolster students' sense of self and reestablish a sense of value," Ito said of values affirmation. "It reminds them what they stand for."

Beilock suggests that test anxiety uses up "working memory" in the brain, and that writing about the anxiety releases more memory to concentrate on the test.

"When they write, students might reappraise the situation—thinking about what has to be done, rather than what they might lose," Beilock said.

The approach can have wide application beyond test preparation. In her book "[Choke: What the Secrets of the Brain Reveal About Getting it Right When You Have To](#)," Beilock asserts that the opportunity to write about fears can help reduce anxiety for individuals facing a range of high-pressure situations in which they must perform well—everything from a job interview to taking a penalty kick in soccer.



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