

Take a Deep Breath

Biofeedback software is helping students calm down for better test performance.

Stress during tests at school might not be new, but an innovative way to deal with it certainly is.

Third graders at La Primaria Elementary in El Monte, California, have been taught to focus on their breathing and visualize their heart whenever they feel anxious while taking a test. The technique brings their heart rates in sync with their breaths, which calms them and allows them to think more clearly.

And that leads to better performance. Jeff Lagozzino, the principal at La Primaria, 14 miles east of Los Angeles, says the school's achievement index jumped 37 points recently to 790—the state goal was to improve by just 5 points—partially because of the techniques to handle stress.

“It just goes to show that the emotional state can really affect a child's performance on the test,” says Lagozzino, who practices the same exercises himself after an initial bout of skepticism. “If they have tools to calm themselves so they can focus on the task at hand, then it's something we should do for all students.”

Call it the latest version of biofeedback. Decades ago, scientists thought

that people could be trained to alter their blood pressure or even sweaty palms. Today, the Institute of HeartMath, a nonprofit research group, has come up with the breathing and visualization techniques that sound a little like yoga or meditation.



Can biofeedback games reduce students' test anxiety?

The difference is that while a student—or teacher or principal, for that matter—focuses on breathing slowly and generating a feeling of appreciation, a sensor connected to their finger or earlobe displays real-time feedback of their stress level on a PC monitor.

Software converts a measure of heart rate variability—the amount of time in between beats, which reflects interactions between the heart and brain—and presents it on a computer screen in the format of a game, in

which to win a student must maintain a steady level of relaxation.

The training exercise usually lasts five to seven minutes, and students can use it at a PC in the back of a classroom or in a lab. Alvaro Fernandez, managing director of

SharpBrains, a San Francisco-based reseller of the program, known as FreezeFramer, which has been sold to 80 schools nationwide, says the \$300 price tag for a sensor breaks new ground.

Until just a few years ago, a biofeedback session cost \$100 an hour because of the required equipment, unavailable outside a doctor's office. Now, “these sensors are less expensive to produce,” he says. “The big innovation is there's more solid science behind heart rate volatility as

a key predictor of stress levels, and the price is reasonable.”

Look for the techniques to catch on in more schools. Lagozzino is looking to train more of his students. “When I first heard about this, I thought, okay, this is a little too far out there for me,” he says. “I didn't think you could control any of your own physiology and that it would have any impact on your thinking. [But] it really does.” &

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