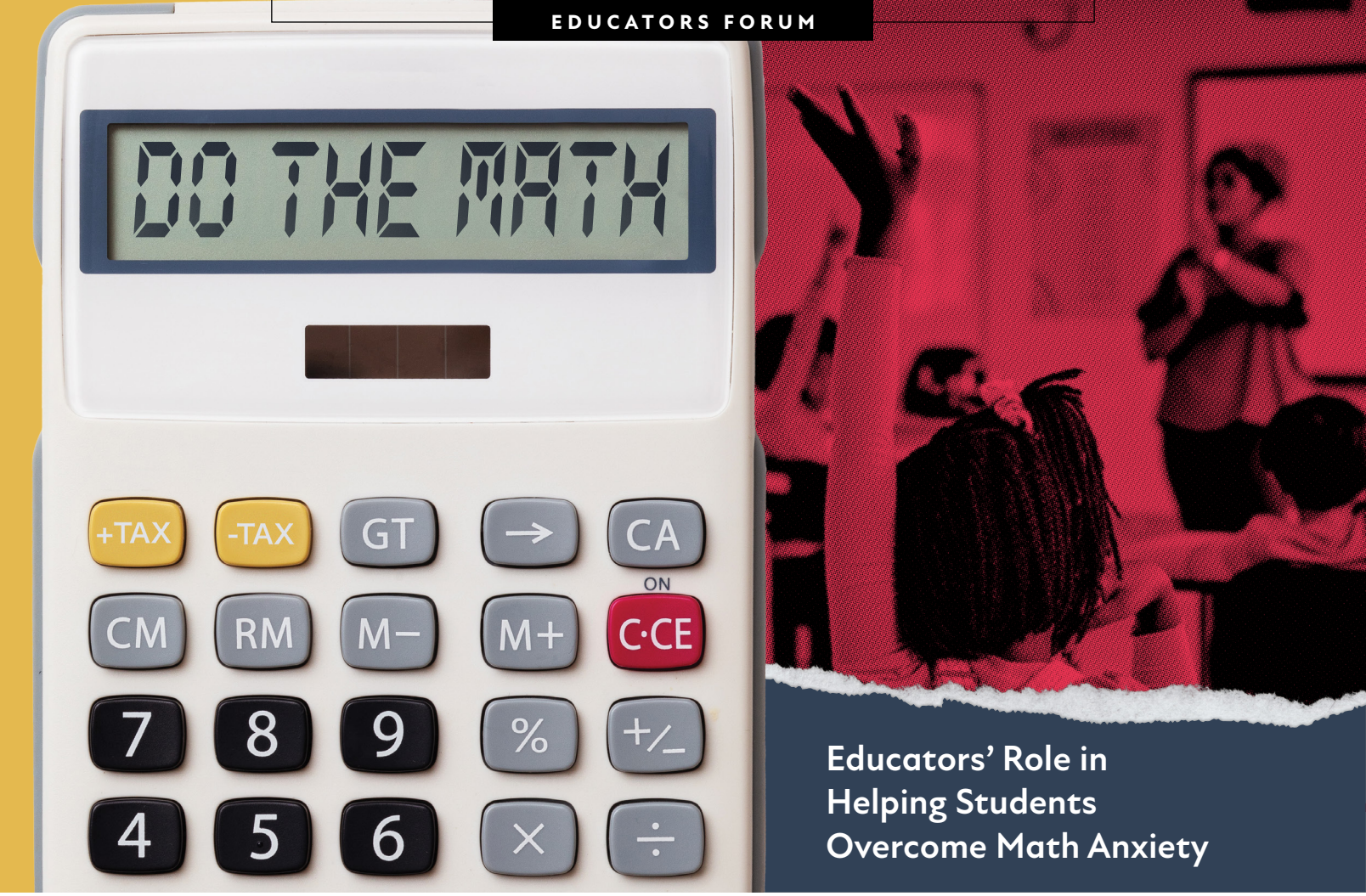

Educators' Role in Helping Students Overcome Math Anxiety

by Brian Justice

Anxiety can make life—including education—all the more challenging. In fact, anxiety disorders are some of the most common mental health problems worldwide, and one of the most intense in education is math anxiety.[1]

"Learning math is both emotional and cognitive, and anyone who feels limited by math anxiety needs to work through those emotions before they can successfully solve math problems," says Geillan Aly, PhD, CEO of Compassionate Math in Glastonbury, Connecticut, a professional development organization specializing in math.

Dr. Aly's advice is sound and highly relevant. About 93% of adults in the United States have experienced some level of math anxiety, and around 17% experience it at high levels. Its effects include test and performance anxiety, which can have detrimental lifelong effects, not only in academics but also in a person's career path.[1]

"Math anxiety is quite common among students, especially for those receiving on-the-job training," says Melody Gibson, BS, CMA (AAMA), CPT(ASPT), RPSGT, medical assisting and phlebotomy program director at Gaston College in Dallas, North Carolina. "For some students, math anxiety often stems from being away from a classroom or educational environment for an extended period of time."

THE PRESSURE ADDS UP

Some students feel stressed when taking timed tests. The pressure to complete tests within the given time frame can cause anxiety, sometimes even causing students to forget material that they knew thoroughly before sitting for the exam. Additionally, students may feel a sense of failure when they do not perform as well as expected. When this stress is associated with math, it can spark a fear of that subject, which then becomes an endless cycle of ever-increasing anxiety that can be hard to overcome.[2]

Embarrassment is a factor too. Being scolded or publicly corrected for a wrong answer can easily establish a strongly negative association with math. This leads to apprehension about participating in class or even attempting challenging problems because of the fear of making mistakes in front of others. When tension around math increases, it causes confidence to deteriorate even further.[2]

"The thing that I run into with students is they automatically say, 'I'm not good at math,' or 'I can't do math.' It just shuts them down right away," says Carmen Monk, BS, CMA (AAMA), a medical assisting educator, program director, and practicum coordinator at Western Iowa Tech Community College in Sioux City, Iowa. "They haven't had a good experience with math, and that perpetuates their anxiety."

In theory, a little bit of nervousness can motivate people to study harder and perform better. However, for people with math anxiety, dealing with numbers is not just difficult; it can be emotionally upsetting. Research has shown that for people with elevated levels of math anxiety, merely

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LONG-HELD DIVISION

Women consistently report higher rates of math anxiety than men, even though research suggests that this stems more from stereotypes than actual math ability. Men and women are equally proficient in math, but cultural beliefs can create math anxiety. The unsupported assumption that math is a masculine subject can be internalized in women, making them believe they are not naturally capable in that subject, and this generally false belief can build anxiety.[5]

This is a real concern in medical assisting, which is 90% female.[6] Despite math proficiency levels comparable to their male counterparts, female students report higher levels of math anxiety throughout all stages of their education.[5] Frustratingly, studies on gender and math anxiety reveal that the gender difference often increases with age. Women not only report more negative feelings about math but are also more likely to avoid math-related studies and professions, which has a significant impact on their career choices.[7] The connection between math anxiety, gender stereotypes, and performance in mathematics may vary depending on the type of math-associated task at hand, but it is consistently shown that women's math anxiety is fueled more by society than actual ability.

In short, women are not worse at math than men. By recognizing and addressing the impact of stereotypes, educators and mentors can help reduce anxiety caused by stereotypes and create a more supportive environment for women.

anticipating an encounter with math agitates the regions in their brains associated with threats and pain.[3]

CALCULATING CONFIDENCE

"It can be easy to assume that students are coming in with a mastery of basic math," says Aaron Emmel, PharmD, MHA, BCPS, founder and program director of Pharmacy Tech Scholar in St. Augustine, Florida. "But dedicating time to working with fractions and decimals, rounding, and fundamental units of measure is needed to set the foundation for more difficult health care–related calculations."

Research supports Dr. Emmel's opinion. Managing math anxiety should not only include finding ways to decrease that anxiety but also support everyone's learning processes, which drives improvement in their math proficiency and their confidence.[4]

A basic technique for alleviating math anxiety is celebrating success.

"Confidence comes from within," says Patricia Boutilier, MBA, MS, BS, EDS, CMA (AAMA), RMA(AMT). "Acknowledge efforts and progress, however minor. Positive reinforcement can motivate students to keep trying and boost confidence and motivation."

"I do my best to make it fun," adds Monk. "I've used [an online education program] to reinforce elementary math to build their confidence. Then, they're like, 'Oh, yeah. I remember how to do this,' which reinforces what they already know, and they can build on that."

Helping students cultivate positive behaviors can also reduce anxiety. For example, encourage them to set aside the proper amount of study time to avoid last-minute jitters and reduce stress.

"[Students should] do homework in lots of short bursts rather than sitting for hours feeling frustrated," advises Dr. Aly. "Students get more out of doing a few problems over the course of a day or two, without frustration or berating themselves, and practice, practice, practice!"

Some basic relaxation techniques can help too. Positive self-talk and deep breathing exercises can alleviate stress and promote calm.

"I encourage students to join support groups or study groups where they can share experiences and learn from each other. That can provide a supportive community and reduce feelings of isolation," says Boutilier. "Practicing mindfulness and meditation can also help reduce anxiety, improve focus, and reduce the stress associated with math, leading to improved performance and greater confidence."

SUBTRACTING THE STRESS

Relieving math anxiety is more than just mastering formulas. It requires fostering positive and supportive learning environments that build confidence and skills. Starting with rudimentary knowledge that students already have, celebrating even the smallest measures of progress, and using intentionally low-pressure study habits and basic mindfulness practices can make math more approachable and diminish the fear around it. Thoughtful educators can help students break a cycle of fear and failure that often starts in childhood, transforming math from an emotional minefield into a solid foundation of confidence and competence. ✦

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