



How to Motivate Students to Work Harder

By Thomas Toch and Susan Headden

Over the past five years, more than \$200 million has gone toward launching the new Common Core standards, with the goal of closing achievement gaps in public schools. But for all their meticulous detail about math and language curricula, the standards fail to address one important factor: the psychological barriers that stand between many students and deeper learning. Unless students are motivated to take on the new standards, and persuaded that they're up to the challenge, the Common Core could have the unintended effect of leaving many students even further behind.

Researchers like Stanford psychology professor Carol Dweck—best known for her 2006 book *Mindset*—have been gathering insights into student motivation for three decades. New work by her colleagues makes a strong case for focusing on students' perceptions of themselves. In a variety of studies, these researchers have found that students who doubt their academic abilities, or question whether students with their particular backgrounds belong at their schools, frequently fall behind or fail at school—regardless of their innate intelligence or the quality of the teaching they receive.

The good news is that students can be buttressed psychologically to tackle academic challenges. In one instance, David Yeager of the University of Texas at Austin, who studied with Dweck, and Stanford psychology professor Geoffrey Cohen report that students of color more frequently take steps to improve their performance when they trust their teachers' commitment to helping them. For a study that was recently published in *The Journal of Experimental Psychology: General*, Yeager and Cohen had 7th-graders at a middle-class, racially diverse New England public middle school each write an essay on a personal hero. The teachers graded the essays the way they typically would, adding routine critical comments like "unclear," "give examples," and "wrong word."

Then the researchers randomly attached one of two sticky notes to each essay. None of the students were aware that they were part of a study and thought their teachers had written the notes. Half of them received a bland message saying, "I'm giving you these comments so that you'll have feedback on your paper." The other half received a note saying, "I'm giving you these comments because I have very high expectations and I know you can reach them"—a comment intended to signal teachers' investment in their students' success.

Then teachers offered the students an opportunity to revise their essays.

The results were striking. Among white students, 87 percent of those who received the encouraging teacher message turned in new essays, compared to 62 percent of those who got the bland note. Among African American students, the effect was even greater, with 72 percent in the encouraged group doing the revision, compared to only 17 percent of those randomly chosen to get the bland message. And the revised essays received higher scores from both the students' teachers and outside graders hired for the study.

Yeager and Cohen concluded that students were more motivated to take an extra step academically when they perceived their teachers' critical feedback as a genuine desire to help rather than as an expression of indifference or disdain toward their racial group. To further test that hypothesis, Yeager and Cohen surveyed students' trust of their teachers going into the study and found that the encouraging note had the largest effect on a subgroup of African American students who had previously reported trusting their teachers the least (as measured by survey questions such as, "My teachers ... have a fair and valid opinion of me").

Another of Dweck's protégés, Stanford researcher David Paunesku, studied 265,000 students learning basic math through the online Khan Academy last year. Students can take Khan courses anytime, anywhere, and the program attracts students of all ages. As part of the courses, students work through practice problems on the Khan website. Paunesku found that fortifying students with a belief that hard work enhanced their academic ability—what Dweck calls a "growth mindset"—improved their performance.

In Paunesku's study, students studying fractions were randomly placed in five groups that received different types of short messages at the top of their screens. One group got a generic encouragement: "Some of these problems are hard, so just do your best." Another message shared irrelevant scientific facts, such as the relative weights of human and elephant brains. A third flashed a growth-mindset message, such as, "Remember, the more you practice, the smarter you become." A fourth included a similar message and a link to a fictitious article about "growing one's brain." And a control group of students, also randomly selected, received no message.

Paunesku found that the students who were given one of the growth-mindset messages mastered new math concepts at a rate nearly 3 percent higher than the students who received the placebo messages or no message—a significant improvement given the number of students involved and the simplicity of the strategy.

In new, not-yet-published research on students at the University of Texas at Austin, Yeager and Gregory Walton, an assistant professor of psychology at Stanford, found that "belonging uncertainty"—a sense that many students have that "people like them" don't belong in college—is also a substantial psychological barrier to student success. Working with university officials, Yeager and Walton studied belonging uncertainty among 7,335 of the university's 8,092 incoming freshman in the fall semester of 2012. As part of the campus's routine online student orientation, which included information on such things as how to sign up for courses and where to go for required vaccines, the new students worked through material compiled by Walton and Yeager (and presented to students simply as information about attending college).

The researchers placed students randomly in four groups. The first received growth-mindset messages like those in Paunesku's study. The second received messages on belonging: quotes created by the researchers that purported to be from older students, reassuring their younger peers that worries about belonging were common, that all students struggled at first, but that challenges eased over time. The messages encouraged students to take steps toward belonging such as making friends, reaching out to professors for help, and participating in extracurricular activities. The third group got information on both mindsets and belonging. And the fourth, a control, received information about dorms, teaching assistants, the city's music scene, and other general topics.

The university was concerned that only 40 percent of its African American, Latino, and first-generation college students earned undergraduate degrees in four years (despite the fact that 85 percent of the university's incoming freshmen came from the top 10 percent of their high school classes). Earlier research had revealed that accumulating at least 12 credits in the first semester predicted a student's chances of graduating in four years. So Walton and Yeager tracked the percentage of students in each group who went on to earn 12 credits in the first half of their freshman year.

They found that among Latino, African American, and first-generation students who were given information to counter belonging uncertainty, 86 percent completed the credits, compared to 82 percent the years before and after the study (2011 and 2013). In contrast, the belonging messages had no significant impact on incoming white and Asian American students: 90 percent of them were on track after one semester, the same proportion as in the years before and after the study. The same pattern played out for students in the mindset and combined belonging/mindset groups. Conversely, in the control group that received only generic messages, there was no improvement in performance among African American, Latino and first-generation students.

The same year, Walton and Yeager replicated the belonging study with 1,619 freshmen at one of the nation's most elite private universities (which participated on the condition that it wouldn't be named) and got the same results. The Latino, African American, and first-generation students who were randomly assigned to groups receiving belonging messages had higher grade point averages at the end of the year (3.49 compared to 3.39) than peers in a control group who were given generic new student information.

Some may draw uneasy connections between the new psychological strategies for strengthening students' resolve and the self-esteem movement of years past, which sought to motivate students through a trophies-for-all approach. The difference is that self-esteem advocates would typically praise students regardless of their performance, which meant they didn't distinguish earned praise from unearned praise. Instead, they unintentionally encouraged a belief that effort doesn't matter, leaving students with a sense of "learned helplessness" that greatly diminished their capacity to tackle challenges and rebound from failure, researchers now say.

The new work by Dweck and her protégés suggests that students are far more likely to be encouraged by the opposite message: You have the capacity to be great *if* you work hard. Their studies suggest that when students feel "dumb," the solution is not to tell them they're "smart" but to make them feel as though being "smart" or "dumb" is irrelevant to success, Yeager says.

And while that's a critical message for struggling students suddenly facing a substantial new challenge like the Common Core, the researchers say it's also what high-achievers should hear. As [Dweck has found](#), many top students who have been told that they're smart (and often officially labeled "gifted and talented") are unwilling to take academic risks for fear of jeopardizing their status, and often struggle in environments where they're suddenly outperformed by others.

The strategies that Dweck and her colleagues have developed need to be tested by a wider range of researchers, with an eye toward learning how long their motivating effects last. And fortifying students for the rigors of higher standards shouldn't supplant efforts to strengthen teachers and improve teaching. Nor should it burden students with responsibility for the shortcomings of schools and society.

But it's encouraging that this preliminary evidence comes from gold-standard randomized studies. And while good teachers have long found ways to overcome students' psychological hurdles, the new research points to the possibility of systematizing effective strategies. The new studies point to the possibility of strengthening students' resolve through relatively simple messages delivered widely and inexpensively over the Internet.

More broadly, the new research elevates a neglected aspect of learning. It represents a chance to recast what has been an unproductive debate between warring camps of school reformers—those who demand accountability and those who focus on tackling poverty's causes and consequences. The new insights into the psychology of learning suggest that there is indeed more to student success than school quality, but that we may not have to eradicate poverty to start attending to its consequences.

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