

# A growth mindset intervention can change students' grades if school culture is supportive

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Boosting academic success does not have to derive from new teachers or curriculum; it can also come from changing students' attitudes about their abilities through a short online intervention, according to the latest findings from the National Study of Learning Mindsets published in

*Nature* on Aug. 7.

The experimental study involved more than 12,000 ninth graders in a national, representative sample of 76 public high schools across the United States. It showed that an intervention emphasizing a growth mindset—the belief that intellectual abilities are not fixed but can be developed—can improve key predictors of [high school](#) graduation and college success, especially when a [school](#)'s culture supports the treatment message.

"The research cemented a striking finding from multiple earlier studies: A short intervention can change the unlikely outcome of adolescents' grades many months later," said David Yeager, the study's lead author and an associate professor of psychology at The University of Texas at Austin. "It also showed us something new: Higher-achieving [students](#) don't get higher grades after the program, but they are more likely to take harder classes that set them up for long-term success."

According to U.S. federal government statistics, nearly 20% of students in the U.S. do not finish high school on time. These students are also at an increased risk of poverty, poor health and early mortality. The transition to high school represents an important transition point in adolescents' paths toward high school completion.

Building on prior research, researchers found that two 25-minute online sessions, administered at the beginning of high school, can help students develop a growth mindset by reshaping their attitudes about their abilities. Researchers found that both lower- and higher-achieving students benefited academically from the program, even into their sophomore year.

On average, lower-achieving students who took the program earned 0.10 higher grade points in core academic subjects such as math, English,

science and social studies. Additionally, the intervention reduced the proportion of these students with a D or F average in these courses by more than 5 percentage points.

The intervention also increased the likelihood students took Algebra II or higher in 10th grade by 3 percentage points among both higher- and lower-achieving students.

"These effects are substantial when compared to the most successful large-scale, lengthy and rigorously evaluated interventions with adolescents in the educational research literature," Yeager said. "They are particularly notable given the low cost and high fidelity of the online program. But the [growth mindset](#) program isn't a magic bullet. Its effectiveness depends a lot on the school context."

In medium- to low-performing schools with norms that encouraged students to take on more challenging coursework, lower-achieving students who received the intervention improved 0.15 grade points in core courses and 0.17 grade points in STEM courses.

"Motivation and learning don't just happen in a student's head; they depend on the resources and learning opportunities present in the school's environment, including the extent to which challenging coursework is available to students," Yeager said. "A [mindset intervention](#) is like planting a seed; it grows to fruition in fertile soil. Now that we have shown this in a national study, it will propel us into a new era of mindset research. That era will focus on both the [mindset](#) of the student and the culture and climate of the classroom. We have our eyes set on preparing teachers to support students' beliefs that they can grow and learn."

**More information:** A national experiment reveals where a growth mindset improves achievement, *Nature* (2019). [DOI:](#)

[10.1038/s41586-019-1466-y](https://doi.org/10.1038/s41586-019-1466-y) , [nature.com/articles/s41586-019-1466-y](https://www.nature.com/articles/s41586-019-1466-y)

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