



David S. Yeager

Growth Mindset in Real Schools

A national experiment reveals where a growth mindset improves achievement



Principle

Growth Mindset training can nudge up average grades for high school freshmen

Quote

“Here we show that a short (less than one hour), online growth mindset intervention - which teaches that intellectual abilities can be developed - improved grades among lower-achieving students and increased overall enrolment to advanced mathematics courses”

So What - Application

If growth mindset can nudge up average grades at school, we can do things at both a school and individual level. Schools can sign up for the intervention for free at perts.net.

Individually we can pay attention to the points in the program. Our brains grow with use. It's not just effort that matters. It's also adopting new strategies, seeing failure as a normal part of learning, and asking for help from other students and teachers.

In our families, we could teach our children this pattern of try a challenge, fail, learn, try another strategy, fail different, learn, ask for help, learn and over time slowly learn how to conquer the challenge.

The Research Story

A team of 25 researchers from 14 universities led by David Yeager did a nationwide experiment with 12,490 9th grade students. They randomly selected schools across the US. GPAs were collected from the schools before the intervention and at the end of the school year.

Students did two 30-minute online activities about 20 days apart. Students were randomly assigned by computer software to a mindset group which learned about mindset, or a control group which learned about brains.

The intervention was well researched, taking an existing intervention and adapting it to 9th graders, doing interviews, focus groups, and trial runs. They used research-backed instructional design in creating the two activities including rich metaphors, source credibility, self-persuasion, social learning principles, and a conceptual framework.

The researchers found that for the lower-half of GPA students, the mindset group had an .10 increase in GPA over the control group. This held true for math and science grades as well.

They wondered if more resourced schools would have less room for improvement due to mindset. That did happen. The lower half of students in well-resourced schools didn't make as much improvement as lower schools.

They also measured each student's willingness to take on challenging versus easy math problems and created an average "peer norm" score. Peer norms on whether they were up for a challenge did affect the results. Schools with peer groups open to challenge did better than schools with peer groups who chose the easy tasks. If trying hard isn't "cool" it has an impact.

There was also a 3% increase in registration for higher math classes (algebra 2 and above) in 10th grade for the mindset group (across all students). Higher resourced schools had a 4% increase.

They were careful to do all they could to make it a high quality study. They preregister their hypotheses, randomly assigned students, had a research company randomly assign schools that would represent the nation's population, and did rigorous statistics.

Even though the effect sizes were small to moderate, it is useful and rare to find an intervention that can be done in an hour, for low cost, and nudge average grades up for the lower-achieving half of a school.

Yeager, D. S., Hanselman, P., Walton, G. M., Murray, J. S., Crosnoe, R., Muller, C., Tipton, E., Schneider, B., Hulleman, C. S., Hinojosa, C. P., Paunesku, D., Romero, C., Flint, K., Roberts, A., Trott, J., Iachan, R., Buontempo, J., Yang, S. M., Carvalho, C. M., ... Dweck, C. S. (2019). A national experiment reveals where a growth mindset improves achievement. *Nature*, 573(7774), 364-369. <https://doi.org/10.1038/s41586-019-1466-y>



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