

EDUCATION WEEK

Published Online: April 15, 2014

Published in Print: April 16, 2014, as **Studies Suggest Ways to Instill a 'Growth Mindset' in Students**

Studies Hit on Ways to Nurture Students' 'Growth Mindsets'

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For the past decade, researchers have accumulated a growing pile of evidence on the effectiveness of "growth mindset" interventions that teach students that intelligence is like a muscle that strengthens with effort, rather than an eye color that is inherited at birth.

During a packed session at the annual meeting of the American Educational Research Association here April 3-7, a Stanford University researcher presented her audience with new research on a method of scaling mindset findings in a way that seems to be both effective at increasing student achievement and practical for schools in put in place.

"Most of the published mindset work poses a significant challenge to scaling," said Carissa Romero, who is the associate director of Stanford's Project for Education Research

That Scales, which grew out of a graduate school project she started with her classmate Dave Paunesku, who is now the center's executive director.

For example, in the past, researchers often delivered or helped deliver mindset interventions, then provided heavy support for teachers along the way. But the Stanford program delivers the entire intervention to high school students online.

To prepare for the lesson, teachers spend about 15 minutes on the telephone learning about the intervention ahead of time. Students then attend two 45-minute sessions in the computer lab.

During the lab time, students who receive the intervention are asked, among other things, to write about how "you can grow your intelligence with practice and better strategies."

A random-assignment study of 1,584 students at 13 high schools found that course failure occurred 8 percent less often for members of the treatment group that received the growth-mindset intervention than for their control-group peers. (The control-group students were asked to write about something unrelated to the growth-mindset idea.)

In total, treatment-group students passed 94 more courses than students in the control group.

With the assistance of such funders as the Seattle-based Raikes Foundation and the William and Flora Hewlett Foundation, of Menlo Park, Calif., both of which help support some topic-specific coverage in *Education Week*, the Stanford project is now running multiple studies that permit schools to receive the interventions for free. Like the intervention, the study recruitment also takes place online, permitting the researchers to study far-flung schools.

The Stanford project's study was one of three presented in a session on increasing students' academic motivation using social-psychological interventions.

Lessons From Biographies

Xiaodong Lin, an associate professor of technology and education at Teachers College, Columbia University, presented the results of a random-assignment study of 204 New York City students.

The study found that reading and reflecting upon stories of famous scientists facing intellectual or life struggles helped students increase their growth mindset and also to perform better academically.

MacArthur Foundation fellow Angela L. Duckworth, an associate professor of neurobiology at the University of Pennsylvania, in Philadelphia, summed up the results of the studies for those who attended the session. She quipped that she had written a note to herself to show her university students her last three rejection letters from academic journals to help motivate them by sharing her own struggles.

The final study, presented by Gregory M. Walton, a Stanford assistant psychology professor, entailed multiple random-assignment studies of a total of more than 2,000 students. The studies examined the effects of interventions designed to motivate students to complete the tedious practice that is sometimes necessary when learning math or science.

The conclusions suggested that students were more likely to persist at such tasks, and even to end up with better learning outcomes, if they first reflected on ways in which fulfilling educational goals could help them help others. The effects were significantly bigger for low-performing students.

Ms. Duckworth noted that all three studies had a common theme.

"They ... get at pluralistic ignorance," she said. "Everyone thinks that everyone feels like they belong. Everyone thinks that you can't change your intelligence."

She added that unless an external intervention shows them differently, "they are beliefs that self-reinforce."