Learning Mindset Programs Can Elevate Achievement of Low-Performing Students at Scale

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Can learning mindset programs be effective at scale? Mindset Scholars David Paunesku, Greg Walton, Carissa Romero, David Yeager, Carol Dweck, and their colleague Eric Smith designed a study to test whether brief, online programs could improve academic outcomes for large groups of students.

Many studies have demonstrated that learning mindset programs can positively affect students' academic performance.[4,5,6,7,8] These studies have typically required extensive involvement of researchers to implement the programs, however, which naturally restricts the number of students and schools served.

Previous research finds learning mindset programs can be especially effective for low-performing students.[4,9] Therefore, the researchers hypothesized that if mindset programs could be designed to be implemented on a larger scale, these underperforming students could disproportionally benefit, reducing achievement gaps.

Study Design

Learning mindset programs target students' core beliefs about school and learning. By changing these beliefs, the programs change how students interpret the meaning of challenges in school. This alters how students respond to challenges, increasing their resilience, and setting in motion positive recursive cycles of beliefs and behavior.[10,11]

In this study the researchers tested programs that target two

KEY FINDINGS:

- Thirteen high schools across the United States effectively implemented brief, online exercises promoting a growth mindset and a larger sense of purpose with a total of 1,500 students

- These programs improved academic achievement among low-performing high school students

STUDENT UNDERPERFORMANCE STATISTICS:

- Hundreds of thousands of students leave high school every year without a diploma[1]

- Students who lack a high school diploma experience poorer job prospects, worse physical health, and higher incarceration rates than their peers who graduate from high school[2]

- While the overall number of jobs in the United States has increased by over 11.6 million since the recession, 99% of these jobs have gone to workers with at least some college education[3]

student experience
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different underlying beliefs: mindsets about intelligence and the extent to which students believe their schoolwork is connected to a purpose that is bigger than themselves.

Growth mindset programs convey that intelligence can increase over time and that employing effective strategies to accomplish challenging tasks is an important component of the learning process. Students complete a 45-minute program that provides an overview of these concepts, which is then reinforced through two writing exercises that encourage students to internalize these messages.

Sense-of-purpose programs encourage students to reflect on how learning and working hard in school can help them accomplish meaningful goals that are bigger than themselves. Students write about their own goals and are guided to connect these to how they could create a "positive impact in the world" through hard work.

The research team recruited 13 economically and geographically diverse high schools to participate and collected data from over 1,500 participating students in grades 9-12. Students were randomly assigned to one of four conditions: the growth mindset program, the sense-of-purpose program, a combined program (that integrated both the growth mindset and sense-of-purpose programs), or a control condition. Students in the control condition completed similar computerized activities that did not have either the growth mindset or purpose for learning messaging (i.e., they read and responded to prompts about roles of different areas of the brain).

How Did Learning Mindset Programs Affect the Performance of Low-Performing students

All three programs significantly raised previously low-performing students' grade point averages (GPAs). On average, low-performing students' GPAs improved between 0.13 to 0.18 percentage points for students who received one of the learning mindset programs relative to their peers in the control condition.

Interestingly, the students in the combined program (growth mindset and sense-of-purpose) did not improve more than those who completed either the growth mindset or sense-of-purpose program. The researchers hypothesize that students who received the combined program did not internalize two separate messages about their beliefs, thus receiving only a partial "dose" of each program. New research is exploring the effectiveness of combined interventions.

Low-performing students who completed learning mindset programs were more likely to receive satisfactory grades in their core academic classes. These students were eight percentage points

more likely to receive grades necessary for promotion (A, B, C, or P) than their peers in the control condition.

Implications for Future Research, Policy, and Practice

Can learning mindset programs use wide-scale, low cost methods to help students reach their potential? This study suggests that these programs can effectively improve previously low-achieving students' academic performance by changing the way these students interpret academic challenges they encounter. This finding has been replicated in another more recent study that provided students with mindset programs during their transition to high school, providing further evidence for the effectiveness of these online exercises.

Learning mindset programs offer one way to help students reframe their experiences and improve school outcomes. Alongside changes to classroom practices and school culture that convey messages of academic potential and purpose to students, these programs can be an important means of improving achievement, particularly among students who have struggled academically in the past.

It is important to note that these programs are not implemented in a vacuum. While this study provides evidence for more widespread use of learning mindset programs in schools, new research by members of the Mindset Scholars Network is examining how these programs interact with diverse contexts to understand for whom and under what conditions they are most effective. This will allow practitioners and policymakers to make decisions based on data that speak to the specific needs of the individuals they serve.

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