



# Mindsets and the Learning Environment: Relationships Between Mindsets, Socioeconomic Status, and Academic Achievement

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RESEARCH SNAPSHOT | SUMMER 2018

Students' attitudes and mindsets are influenced by a multitude of sources, including their prior experiences and environmental contexts. Evidence from studies of small, non-representative and international populations have suggested that students from greater socioeconomic advantage are more likely to adopt a growth mindset.<sup>1,2</sup> However, other research has found that greater socioeconomic advantage was related to more fixed views of math ability.<sup>3</sup>

How can we expand understanding of the relationships between socioeconomic status (SES) and adaptive learning mindsets? This project, led by Mesmin Destin, examines this question and offers the first estimate of the degree to which perceptions about the nature of intelligence are related to both SES and academic performance among high school students in the U.S.

## STUDY DESIGN

This study analyzed the control group in the [National Study of Learning Mindsets](#) data. The NSLM is the largest-ever randomized controlled trial of a growth mindset intervention in the U.S. in K-12 settings. The study collected data on more than 16,000 9<sup>th</sup> grade students across 76 public high schools. This project analyzed data from 61 of the schools totaling over 4,700 students who were randomly assigned to the control group.

Students reported on their mindsets about intelligence as well as their socioeconomic background. Socioeconomic background was measured in two ways. Students were considered socioeconomically advantaged (relative to their counterparts) if their mother had earned a bachelor's degree or if they were not eligible to receive a free/reduced priced lunch at school. The researchers also collected data on student grades in core academic courses (mathematics, English language arts, science, and social studies) in 8<sup>th</sup> and 9<sup>th</sup> grade.

## KEY FINDINGS

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- In a nationally representative sample of regular U.S. public high schools, 9<sup>th</sup> grade students with stronger reports of growth mindset earned higher core course grade point averages (GPAs)
- Students from greater socioeconomic advantage reported having more of a growth mindset
- Differences in reported growth mindset between socioeconomic groups were modestly associated with differences in students' GPAs

## RESEARCH TEAM

- [Mesmin Destin](#) (PI), Northwestern University
- Jenny Buontempo, Stanford University
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*Areas of Expertise:* Psychology, Statistics, Sociology

## SAMPLE

The project used data from more than 4,700 9<sup>th</sup> grade students in 61 high schools that participated in the [National Study of Learning Mindsets \(NSLM\)](#). The NSLM is a longitudinal study that collected data from students attending a nationally representative sample of regular U.S. public high schools, including information about students' mindsets, background, and academic performance.

**MINDSET**  
SCHOLARS  
NETWORK

The Mindset Scholars Network is a group of leading social scientists dedicated to improving student outcomes and expanding educational opportunity by advancing our scientific understanding of students' mindsets about learning and school.

Regardless of background, students with stronger growth mindsets had better core course GPAs. Researchers found no evidence that students' mindsets mattered more for the achievement of higher or lower SES students.

***Students from greater socioeconomic advantage reported more of a growth mindset relative to their peers with more socioeconomically disadvantaged backgrounds***

Students whose mothers completed a bachelor's degree reported significantly higher on the measure of growth mindset relative to students whose mothers did not complete a bachelor's degree. This pattern held when using free/reduced price lunch status as a measure of SES.

***Differences in reported growth mindset between socioeconomic groups were associated with differences in students' core GPAs***

Many factors contribute to the persistent pattern of students from advantaged backgrounds having higher core GPAs relative to students from more disadvantaged backgrounds. This study found that average differences in self-reported growth mindset explained a statistically significant but small portion of the difference in academic achievement by SES in a nationally representative sample of schools. This finding may suggest that mindsets are shaped by socioeconomic conditions, which in turn matter for academic achievement.

## INSIGHTS & FUTURE DIRECTIONS

As the research team points out, "mindsets alone ... cannot explain or eliminate socioeconomic disparities in education." While a growth mindset can be beneficial for students and help to reduce inequality, mindsets and related psychological factors of students themselves are not the primary explanation for the enduring legacy of educational inequality in the U.S. But, according to a large body of research, growth mindset does matter to achievement, and these researchers were able to look further into the practical importance of growth mindset for students from low versus high socioeconomic backgrounds.

More specifically, the finding that students with stronger growth mindsets had better core course GPAs regardless of background suggests that creating learning environments that foster adaptive learning mindsets could be a beneficial strategy in improving students' academic outcomes. Further reading on how insights from mindset science can inform the design of educational environments in K-12 and postsecondary education can be found in our research synthesis [here](#).

Leveraging the NSLM's unusual design and rich data collected on students' psychological experience of learning and school, this project helps illuminate the role environments inside and outside of school, such as students' SES, play in shaping students' mindsets and motivation. Further research can continue to explore the relationships studied here to understand how the connection between SES and mindsets emerges and develops.

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### References

1. Aelenei, C., Lewis, N. A., & Oyserman, D. (2017). No pain no gain? Social demographic correlates and identity consequences of interpreting experienced difficulty as importance. *Contemporary Educational Psychology*, 48, 43–55.
2. Claro, S., Paunesku, D., & Dweck, C. S. (2016). Growth mindset tempers the effects of poverty on academic achievement. *Proceedings of the National Academy of Sciences*, 113(31), 8664–8668.
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## ABOUT THE MINDSETS & THE LEARNING ENVIRONMENT INITIATIVE

The Mindset Scholars Network launched a new interdisciplinary initiative in Fall 2016 to explore how learning environments shape the mindsets students develop about learning and school. The project's aim is to generate scientific evidence about how educators, school systems, and structures can convey messages to students that they belong and are valued at school, that their intellectual abilities can be developed, and that what they are doing in school matters.

Fourteen projects were awarded over two rounds of this initiative. Funding for the initiative was generously provided by the Bill & Melinda Gates Foundation, Joyce Foundation, Overdeck Family Foundation, and Raikes Foundation.