False Growth Mindsets

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In the canonical form of the growth mindset, one should be learning that people can improve their performance as long as they try hard, use the proper strategies, and are unafraid to ask for help.[1] The traditional approach to teaching growth mindsets,[2] however, stresses the power of hard work for improvement above and beyond other factors, and there is a worry that people may be coming to believe that effort alone is the key to improvement; that, simply, if you try hard, you'll do well.[3] This so-called "false growth mindset"[4] may not carry the same motivational benefits as the "true growth mindset," and may even hinder one's performance and the performance of others.

Students whose teachers mainly praise their effort, without praising their strategies, for example, may be interpreting that praise as demeaning, indicating that their teacher doesn't believe that they have the ability to succeed in the class, and are just praising their effort as a sort of 'consolation prize.'[5,6] At an extreme, those who truly believe that effort is the only thing that matters for one's outcomes may see the failures of others as an indication of unwillingness to try hard enough to succeed, i.e. victim-blaming.[7] This line of thinking may be especially problematic in educational settings, where teachers who hold such a mindset may be less likely to help struggling students, and may be communicating, either intentionally or unintentionally, to students that failure indicates that they are lacking innate ability and are unlikely to improve.

Study Design

As part of the National Study of Learning Mindsets, 9th grade mathematics teachers were asked to fill out a survey in which they were asked about their own growth mindset, how they set up their classroom procedures, and the ways they would respond to hypothetical students who were struggling or excelling in their class. Teachers were asked, for example, about whether they believe that people in general have a certain amount of intelligence that cannot be changed; whether it takes a special talent to be a good mathematics student; and whether some people are 'born teachers.'

Key Findings

- This project investigated patterns in 9th grade mathematics teachers' beliefs about ability, effort, and their responses to hypothetical struggling and succeeding students.
- The researchers were able to identify distinct patterns of belief across the responses: 23% of teachers endorsed beliefs that students' abilities are fixed and unlikely to change (fixed mindset), and 77% of teachers endorsed beliefs that students' abilities are malleable and can improve (growth mindset).
- Among those that endorsed growth mindset beliefs, roughly half (38%) of teacher seemed to be misunderstanding growth mindset, showing a tendency towards believing that effort is overly-important for success, minimizing the value of finding the right strategies for each student, and not being receptive to students' help-seeking.

Sample

This study leverages data from the National Study of Learning Mindsets (NSLM), the largest ever randomized controlled trial of a growth mindset program in the U.S. in K-12 settings, in which a brief online growth mindset program was administered to 9th grade students during the 2015-2016 academic year. The NSLM features a nationally representative probability sample of regular U.S. public high schools. Additional information about the NSLM sample of schools and students can be accessed here.

The current research is based on data from approximately 300 mathematics teachers surveyed about their teaching practices and their beliefs about students.

MINDSET SCHOLARS NETWORK

The National Study of Learning Mindsets Early Career Fellowship is a project of the Mindset Scholars Network and the University of Texas at Austin Population Research Center. 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. The University of Texas at Austin Population Research Center aims to provide outstanding infrastructure resources and sustain a dynamic interdisciplinary culture geared toward facilitating the highest level of population-related research among its faculty members and graduate and undergraduate trainees.

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Research Team

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  Areas of expertise: social psychology, educational psychology, statistical inference

This snapshot was published at the close of the National Study of Learning Mindsets Early Career Fellowship and captures in-progress work.

They were also asked to report on their classroom procedures, such as whether they allowed students to resubmit work; whether they put their remedial students together for group work; and whether they considered questions from 'lower achievers' as slowing the class down.

Finally, teachers were also asked to imagine how they would respond both to a student who was "very discouraged in math class. The student kept getting low grades on assignments. The student didn't always try, but when he or she did try hard, the student would still get things wrong, even after practicing;" and to a student who was "doing very well in math class. The student is getting really high grades on assignments, often without trying or putting in much time. The student doesn't ask questions because he or she isn't confused by very much."

Teachers wrote freely about what they would say to such students, as well as answered multiple choice questions about how likely they would be to, for example, suggest tutoring after school for the struggling student, or to tell the succeeding student that when things are easy, is when it's time to try harder.

The researchers took these responses and categorized the belief structures of mathematics teachers with analyses that interpret patterns of self-reports in data as being generated by distinct underlying beliefs (while taking into account the ways that those beliefs may manifest differently across different schools).[8,9] By categorizing the ways that teachers thought about their own growth mindsets and the ways that they provided feedback and support to hypothetical struggling or excelling students, the researchers identified three different latent classes, or patterns of belief across teachers: those who generally had fixed mindsets about ability; those who generally had growth mindsets about ability; and those who held beliefs corresponding to the false growth mindset.

Key Findings

23% of teachers endorsed beliefs that students' abilities are fixed and unlikely to change (fixed mindset), and 77% of teachers endorsed beliefs that students' abilities are malleable and can improve (growth mindset).

One group (approximately 23% of the sample) tended to believe that one's intelligence is fixed, that being a top mathematics student is the sort of thing that cannot be taught, and that success in mathematics requires talent, not just hard work. These teachers were also more likely to believe that teaching itself is something that requires talent, and that really great teachers are born, not made. In short, these teachers reported beliefs that ability is fixed both for students and for themselves and their fellow teachers. Perhaps interestingly, these teachers did not differ from more growth-mindset-oriented teachers in their self-reported classroom practices. These teachers also provided a wide range of free responses to both the struggling and succeeding students, underlining the heterogeneity that can underlie the fixed mindset.

The other two groups held beliefs that ability can improve, reporting that intelligence is not fixed, and that being a top mathematics student and a successful teacher could be taught, and could be achieved with effort. These two groups, however, differed in how they thought about the growth mindset.

Among those that endorsed growth mindset beliefs, roughly half (38%) of teachers seemed to be misunderstanding growth mindset, showing a tendency towards believing that effort is overly-important for success, minimizing the value of finding the right strategies for each student, and not being receptive to students' help-seeking.

One of the two growth-mindset-oriented groups (approximately 38% of the sample), strongly agreed with the statement that people could grow their ability, and that any student had the intellectual potential to do well at the highest level of college mathematics. This group was more likely to praise the efforts of successful students while, at the same time, being less likely to push them to try harder challenges.

Coding of the teachers' free responses about what they would say to the struggling and successful students suggested that these teachers were also more likely to respond in more authoritarian fashion to struggling students: demanding that they do things the way that the teacher wanted and being less likely to acknowledge the student's way of seeing the world or approaching the class problems; while tending towards strong positivity in their messages to the succeeding students. In other words, these teachers showed some variant of a false growth mindset. They believed that students can grow their ability and that anyone had the potential to succeed, but focused more on

students' effort, and less on helping students find strategies that work for them.

The other group (approximately 39% of the sample) was more measured in its growth mindset beliefs, agreeing that people could grow their abilities, but not unreservedly. These teachers were less likely to praise the effort of succeeding students, and provided feedback that was more empathetic and more supportive of each student's individual needs and worldviews. These teachers, in other words, planned on providing the necessary behavioral support for success, not just slogans or good intentions.

Insights and Future Directions

The researchers are currently investigating how these teacher beliefs affect their students' outcomes. Having identified teachers who hold a false growth mindset, the researchers are exploring the relationship between that mindset and the beliefs of students in those teachers' classrooms – both students' perceptions of their teachers' beliefs about the importance of ability and effort, and students' own mindsets about ability and effort. The researchers will examine whether those beliefs help explain students' actual performance in the class. They are especially interested in whether these relationships are stronger for students who came into the class with lower mathematics grades from the previous year.

This project and future, related lines of work on beliefs about the relationship between effort, strategies, and success have significant implications for researchers, translators of research, teacher preparation stakeholders, and educators seeking to apply research on growth mindset in the classroom. Future research may benefit from quantifying a growth mindset based on what people do, not just what they say, as evidenced by the wide range of self-reported classroom behaviors in the group of teachers who seemed to hold a fixed mindset based on their self-reported beliefs.

While these results are based on a purely self-reported measure, they suggest that those teachers who view the growth mindset as a simple optimistic slogan – "anyone can grow if they simply try" – may, in their misunderstanding, be setting themselves up for attributing students' struggles to a lack of effort rather than being flexible in response to students. When applying the growth mindset to teaching, therefore, researchers and educators should take care to communicate the full panoply of the growth mindset, making sure to strongly emphasize the importance of moving beyond one-size-fits-all approaches to instruction, towards finding strategies that work for each student, including help-seeking.

References

[1] Dweck, 2008.
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[3] Wormington, S. (under review). Is Effort Enough or Do I Need Strategies, Too? Assessing the Fidelity and Efficacy of a Growth Mindset Intervention in Developmental Mathematics.
[4] Dweck, 2015.
[5] Amemiya & Wang, 2018.
[6] Haimovitz & Dweck, 2017.
[7] Ryazanov & Christenfeld, 2018.
[8] Finch & French, 2014.
[9] Henry & Muthén, 2010.

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