THE SCIENCE OF MATH

Common Misconceptions: Growth Mindset Increases Math Achievement

MISCONCEPTION

Many educators believe interventions targeting a growth mindset will improve academic achievement.

Many educators are concerned with fostering a growth mindset (i.e., "I can work hard to improve my success in math each day") rather than a fixed mindset (i.e., "I'm just not good at math") in students to promote math achievement.

TRUTH

Intervention research on stand-alone growth mindset interventions yield minimal gains on GPA in mathematics courses[a] and replication attempts have failed.[b] The most effective way to improve academic achievement is to deliver skill-building intervention.[c]

What is Growth Mindset Theory (GMT)?

Individuals who believe intelligence is malleable will obtain higher attainment than students who view intelligence as fixed.

In GMT, teachers support students to:
(1) believe they can improve their performance;
(2) identify the effort and persistence required;
(3) seek input or feedback to improve performance;
(4) try new strategies or approaches if old ones fail.

ADVICE FOR USING GROWTH MINDSET IN INTERVENTIONS

Use praise statements based on students' effort, understanding, and persistence on challenging math work.[d]

Encourage students to master skills by providing choice of interventions, feedback, and goals on learning, and opportunities to monitor their own progress, reflect on learning goals, and record learning accomplishments.[e]

Establish individual learning goals rather than promoting work exemplars from high achievers.[d]

[a]Yeager et al. (2019)
[b]Li & Bates (2020)
[c]Fuchs et al. (2021)
[d]Park et al. (2016)
[e]Codding et al. (2017)

Citation: Advocates for the Science of Math (2021). *Common misconceptions: Growth mindset increases math achievement.* Authors. https://www.thescienceofmath.com

www.thescienceofmath.com

We provide resources related to effective math instruction. Our goal is to ensure that all students, regardless of background or status, have equitable access to math. To guide the Science of Math, we rely on well-researched instructional strategies and research about how students learn.