

ZMATH 06675838

Booth, Julie L.; McGinn, Kelly M.; Barbieri, Christina; Young, Laura K.

Misconceptions and learning algebra.

Stewart, Sepideh (ed.), And the rest is just algebra. Cham: Springer (ISBN 978-3-319-45052-0/hbk; 978-3-319-45053-7/ebook). 63-78 (2017).

Summary: Rather than exclusively focus on mastery of procedural skills, mathematics educators are encouraged to cultivate conceptual understanding in their classrooms. However, mathematics learners hold many faulty conceptual ideas – or misconceptions – at various points in the learning process. In the present chapter, we first describe the common misconceptions that students hold when learning algebra. We then explain why these misconceptions are problematic and detail a potential solution with the capability to help students build correct conceptual knowledge while they are learning new procedural skills. Finally, we discuss other potential implications from the existence of algebraic misconceptions which require further study. In general, preventing and remediating algebraic misconceptions may be necessary for increasing student success in algebra and, subsequently, more advanced mathematics classes.

Classification: D70 C30 H20 H30

Keywords: misconceptions; worked examples; learning from errors; conceptual knowledge; self-explanation
doi:10.1007/978-3-319-45053-7_4