

Growing Over Showing in Math Education

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In case you missed it, the cameras were rolling at the APS 23rd Annual Convention in Washington, DC. Watch Matthew G. Mandelbaum from Fordham University present his poster session research on “Mastery, Need for Cognition, and Self-Efficacy Promote Long-Term Math Achievement in Adolescent Females.”

Mandelbaum’s research shows that “growing” is better than “showing” when it comes to learning math. To figure out how students learn math effectively, he looked at high school girls’ learning progress over the course of one semester to determine how the girls’ cumulative math exam grades were related to various factors, including previous grades, confidence, whether the girls wanted to engage in complex thinking processes, and whether the girls were interested in mastery (growing their math knowledge) versus performance (showing their skills).

Students who were interested in “growing” their math skills were more likely to engage in complex thinking processes, improve their confidence, and raise their grades. In contrast, the desire to show off math knowledge was not related to complex thinking, improved confidence, or higher grades.

“There are some important implications for teaching and learning,” Mandelbaum says. “When learning mathematics, students might improve by being open to growing their knowledge instead of showing their knowledge. Teachers can encourage such behavior. Furthermore, psychologists and educators can develop interventions that increase students’ abilities to understand the subject, engage in complex thinking skills, and elevate their confidence for math in order to raise achievement.”

Mandelbaum’s enthusiasm for math education led to [Jumping Joey’s Number Line](#), which he co-designed. The number line is an intervention that allows younger students to combine physical movement and math.