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Chan Turrou, Angela; Henriquez Fernandez, Cecilia

Mathematical proficiency and perseverance in action: the case of Maria and Andrew.

J. Math. Educ. Teach. Coll. 3, No. 2, 67-73 (2012).

Summary: In response to an expanding definition of mathematical proficiency, educators must attend to what mathematically proficient students should know as well as what they should do. As students are asked to struggle and wrestle with mathematics, educators should expect that students demonstrate perseverance through engagement with difficult mathematics. This has significant implications for seeing one's self as a learner and doer of mathematics, particularly for those with historically limited access to mathematics-related opportunities. A case study analysis of a pair of students in a second grade classroom engaged in algebraic reasoning revealed a striking example of perseverance in action that supports mathematical learning. Analysis of classroom discourse across the classroom revealed the social and sociomathematical norms of the classroom that supported such perseverance. Developing mathematically proficient students who persevere has widespread implications as it is those who see themselves as doers of mathematics who have the most access to future educational and economic opportunities.

Classification: C70 C20 C30 D30

Keywords: educational research; case study; classroom observation; grade 2; learning; mathematical ability; common core state standards for mathematics; mathematical ability; knowledge; gifted; mathematical proficiency; equity; classroom discourse; student attitudes; perseverance; academic careers; student characteristics; student-student interaction; teacher-student interaction; learning environment; learning environment
<http://journals.tc-library.org/index.php/matheducation/article/view/874>