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The centrality of learning in mathematics educational research: Attending to the complexities of cognition, epistemology, and identity in mathematics class

Currently in mathematics education research, student learning is too often reduced to achievement scores, a dependent variable for assessing other factors. We believe that progress in mathematics education toward success for all students needs research which attends to the complexities of how individual students see themselves as learners of mathematics and how they engage in the tasks of classroom learning. In this presentation, we will propose a particular focus for educational research in mathematics: research that brings students learning more clearly into view. Such a focus would prioritize coming to understand the processes students could use in learning mathematics and learning to learn mathematics. We will suggest that the goals of mathematics education could be brought within reach of more teachers and students, if research described more extensively the learning processes of successful students and the reasons for misdirected efforts of less-than-successful students. Using data from a five-year longitudinal study of high school students' engagement in mathematics, participants in the presentation will explore the context of daily homework as a site for strategic coaching by mathematics teachers to support the co-emergence of learning to learn and learning mathematics as a important goal of mathematics education.