Productive Struggle

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Abstract: A compelling goal of school mathematics is that students learn mathematics with proficiency and understanding. Researchers suggest one way for students to deepen conceptual understanding is by engaging students in grappling with problems as they try to make sense of the mathematics. However, research in the area of students’ productive struggle is limited. By students’ productive struggle, I mean students’ effort to make sense of mathematics, to figure something out that is not immediately apparent as opposed to students’ effort made in despair or frustration.

For my dissertation I examine classroom interactions and document the kinds of students’ struggles that occur as students engage in mathematical tasks and the kinds of guidance and structure teachers provide that either facilitate or undermine the productive effects of students’ struggle. In this talk, I will present my rationale, conceptual framework, and methodology for my study along with some results from my gathered data.

Hiroko Warshauer is a doctoral student in Mathematics Education at the University of Texas at Austin, a lecturer at Texas State and one of the Texas Mathworks faculty. She received her BA from the University of Chicago and her MS from Louisiana State University. Her research interests include productive struggle, teacher education and early algebra. As part of her work with Mathworks she is a coauthor of the Math Exploration textbook series based on curriculum she developed for the Junior Summer Math Camp.