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From Trash to LIT: Problem Solving in a 7th Grade Classroom

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ABSTRACT

This qualitative research study examined the effects of creating and building a classroom environment that is conducive to math problem solving as well as a step-by-step approach to solving word-based math problems. The participants were seventh grade students in the general education classroom who receive mathematics instructions on a daily basis for fifty minutes. During the time, students learned problem-solving strategies to help them when solving word based math problems. Students were provided with daily warm-up word problems that activated students' prior knowledge, built on students' current computation levels and understandings and became more complex over the span of the action research project. Each warm-up provided a step-by-step approach through the use of a questioning organizer to slow down the problem-solving process and to encourage students to consider all of their options for solving a math-based word problem. Students began solving the problem presented to them on their own before collaborating with others on their strategies and solutions. Teacher scaffolding was only provided during the time when students worked collaboratively and not when individual students were reading, processing, completing the organizer and designing a strategy for solving. Students enjoyed the daily routine of being presented with word problems and being challenged to discuss their reasoning behind their answers and strategies for solving. At the end

of this action research project, it was clear from the triangulation of data, that students felt more confident in their ability to begin solve word-based math problems as a result of the guided question organizer and the ability to engage in discourse with their peers on their strategies for solving.