

## Engaging Students in True Problem Solving

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Teaching standard algorithms to solve corresponding types of problems is common practice in the mathematics classroom. True problem solving, where there are no standard algorithms or problem types to match, rarely exists in mathematics classrooms. However, active learning with true problem solving embedded has been gradually accepted and adopted in college mathematics courses over the past two decades. In this article, we explore the essential skills required for true problem solving, and how these essential skills are distorted to memorization of standard algorithms and problem types in the classroom. In addition, we compare the thinking habits commonly taught in the classroom with those required for true problem solving. Finally, we propose a construct to embed true problem-solving essentials into everyday classroom teaching practice.

Keywords: problem solving, active learning



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