

Strategies and Precise Vocabulary Knowledge: Exploring the Relationships Among Mathematics Vocabulary, Problem Solving, and Confidence

Abstract

In this action research study I focused on my eighth grade pre-algebra students' abilities to attack problems with enthusiasm and self confidence whether they completely understand the concepts or not. I wanted to teach them specific strategies and introduce and use precise vocabulary as a part of the problem solving process in hopes that I would see students' confidence improve as they worked with mathematics. I used non-routine problems and concept-related open-ended problems to teach and model problem solving strategies. I introduced and practiced communication with specific and precise vocabulary with the goal of increasing student confidence and lowering student anxiety when they were faced with mathematics problem solving. I discovered that although students were working more willingly on problem solving and more inclined to attempt word problems using the strategies introduced in class, they were still reluctant to use specific vocabulary as they communicated to solve problems. As a result of this research, my style of teaching problem solving will evolve so that I focus more specifically on strategies and use precise vocabulary. I will spend more time introducing strategies and necessary vocabulary at the beginning of the year and continue to focus on strategies and process in order to lower my students' anxiety and thus increase their self confidence when it comes to doing mathematics, especially problem solving.