

Writing in the math Classroom: Does it have an effect on student's mathematical reasoning?

Abstract

In this action research study of my classroom of 5th grade mathematics, I investigate how to improve students' written explanations to and reasoning of math problems. For this, I look at journal writing, dialogue, and collaborative grouping and its effects on students' conceptual understanding of the mathematics. In particular, I look at its effects on students' written explanations to various math problems throughout the semester. Throughout the study students worked on math problems in cooperative groups and then shared their solutions with classmates. Along with this I focus on the dialogue that occurred during these interactions and whether and how it moved students to a deeper level of conceptual understanding. Students also wrote responses about their learning in a weekly math journal. The purpose of this journal is two-fold. One is to have students write out their ideas. Second, is for me to provide the students with feedback on their responses. My research reveals that the integration of collaborative grouping, journaling, and active dialogue between students and teacher helps students develop a deeper understanding of mathematics concepts as well as an increase in their confidence as problem solvers. The use of journaling, dialogue, and collaborative grouping reveals themselves as promising learning tasks that can be integrated in a mathematics curriculum that seeks to cultivate students' thinking and reasoning.