Abstract

The purpose of our study was to investigate how a group of students entering third grade made sense of multiple types of word problems and to design an instructional sequence to help them develop an array of problem-solving strategies. The research questions guiding our study were: Which strategies do students use to solve word problems before, during, and after the instructional sequence? To what extent, and how, do the students' strategies change and develop over the course of instruction? The four study participants had completed second grade and were entering third. Each student participated in a 30-minute individual pre- and post-interview; seven weekly lessons took place between these assessments. Each interaction with the children was video recorded and transcribed, and we retained students' written work for analysis. While analyzing each week's lesson, we made conjectures about tasks that would build our students' abilities to make sense of word problems. In the initial interviews, three of the four students had only basic understandings of one-step word problems. The other student demonstrated procedural fluency but was unable to consistently justify his answers. Therefore, during group instruction, students were encouraged to act out problems with manipulatives, puppets, and other materials in order to help them comprehend and work within problem contexts. At the conclusion of the study, all students demonstrated growth in making sense of word problems. Our research suggests that students can benefit from acting out word problems, and that doing so will provide them with opportunities to bring mathematics to life.