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The Students' Representative Processes in Solving Mathematical Word Problems

by

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Abstract

Representation in mathematics is essential as a basis for students to be able to understand and apply mathematical ideas. This study aims to describe how students produce different representations in solving word problems. In solving word problems, students make verbal–written representations, image representations, and symbol representations. This research uses a qualitative descriptive study involving 75 fifth-grade students at one of the private schools in Makassar, Indonesia. Setting and Participants: two subjects were chosen from 75 participants based on the completion of word problems that resulted in different representations, including verbal–written representations, picture representations, and symbol representations. The instruments used were word problems and interview sheets, although some other students only used one or two forms of mathematical representation. The results of this study indicate that, from the different representations produced that include verbal–written representations, image representations, and symbol representations, students carry out the process of translation, integration, solution, and evaluation until finding answers. In addition, other findings were students' 'mathematical literacy which immensely helped the students' representation process in solving word problems. three forms of representation were found to be produced by students: verbal–written, image representation, and symbol representation. Furthermore, the three forms of representation were created through carrying out four representation processes, namely the processes of translation, integration, solution, and evaluation.

Keywords:

different representations; representation; word problems; word problem solving