

INVESTIGATION OF FIFTH GRADE STUDENTS' SKILLS OF SOLVING DIFFERENT TYPE OF PROBLEMS

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Abstract

The aim of the study is to examine fifth grade students' skills to solve different (routine and non-routine) problems. Participants of the study were eight fifth grade students attending a public secondary school located in the rural region of Eskişehir province in the 2016-2017 academic year. To collect data in this study which is in case study design, clinical interviews with participants were applied. A total of four problems were used in the clinical interviews: one routine (standard / customary) and three non-routine (standard / unusual) problems. Non-routine problems are in three types: containing excess information, missing information, and no-solution type of problems. The data obtained were tabulated and the thematic analysis method was used in the analysis of the data. The data were analyzed based on understanding the problem, which is the first step of Polya's problem solving model. It was seen that students had the most difficulty in understanding the no-solution problem type and that the students used most of their solving time on this problem type and during the understanding phase. It was found that the students encountered non-routine problems for the first time in this study and this finding was considered the main reason behind their difficulty in understanding. It was also found that the students with lower academic success levels had difficulty in understanding problem types of excess information or missing information.

Keywords: Mathematics education, problem solving, problem types, non-routine problem.