

INVESTIGATION OF PRE-SERVICE ELEMENTARY TEACHERS' STRATEGIES IN SOLVING MISSING VALUE PROBLEMS

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Abstract

The purpose of the study was to investigate pre-service elementary teachers' solution strategies in solving missing value problems, which is a type of proportion problems. Data were collected from the pre-service teachers in the spring semester of 2015-2016. Pre-service teachers were junior students enrolled in elementary teaching program at a public university in Turkey. Pre-service teachers were wanted to solve four missing value problems. The results of the study revealed that pre-service teachers had difficulty in solving the problems by using two different strategies. Moreover, pre-service teachers mostly used formal strategies (e.g., cross-multiplication) in which rules and properties of algebra were used, instead of informal strategies (e.g., unit rate, factor of change) highlighting multiplicative relationships. Pre-service teachers used *cross-multiplication*, which was a formal strategy, as a leading strategy to solve these problems. Furthermore, it was found that pre-service teachers' solution strategies might change based on problem context.

Keywords: Pre-service elementary teacher, ratio and proportion, proportional problems, solution strategies.