

Strategies Used by Eighth Grade Students in Solving Problems Requiring Proportional Reasoning*

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Abstract

One of the most important skills in mathematics education is proportional reasoning. The aim of the study is to determine the strategies used by 8th grade students in solving problem types that require proportional reasoning. The study was carried out with a cross-sectional scanning model. The study group consists of 88 eighth grade students studying at a public school in the 2022-2023 academic year. In order to determine the strategies used by the students, the Proportional Reasoning Test (OAYT), which consists of 15 different types of open-ended problems, was used. The answers given by the students to the problems in the test were analyzed with descriptive analysis methods. The data obtained as a result of the analysis were coded depending on the definitions of proportional reasoning strategies in the literature. The results of the research showed that the students used various strategies while solving the problems and the use of this strategy changed according to the problem types and forms. According to the data obtained, it was determined that the students mostly used cross multiplication strategy in missing value problems, equivalent fractions strategy most in numerical comparison problems and qualitative multiplicative comparison strategy most in qualitative comparison problems. Students generally used incorrect proportional strategies in solving non-proportional problem and inverse proportionality problem.

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