



AN ANALYSIS OF MATHEMATICS TEACHER CANDIDATES' LOGICAL THINKING LEVELS: CASE OF TURKEY

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Abstract

The aim of this study was to investigate whether the logical thinking level of mathematics teacher candidates were being affected by the variables of grade level, graduated high school type, and gender. The study was conducted as survey study and included 99 mathematics teacher candidates who were students in a state college placed in the northern part of Turkey. The data were collected through the group assessment of logical thinking (GALT) instrument developed for measuring logical thinking level. The GALT instrument included six sub-scales; conservational reasoning (4 items), proportional reasoning (6 items), controlling variables (4 items), combinational reasoning (3 items), probabilistic reasoning (2 items), and correlational reasoning (2 items). The instrument included 18 double multiple-choice items (items 1 through 18) and three constructed-response items (items 19-21). In responding the items 1 through 18, students were posed with a problem supported with pictorial presentation and asked to choose the best answer (from 2 to 5 possible answers available) for each stated problem. Then, students were required to choose the best justification for the chosen answer from a list of 2 to 5 possible justification. The results of the study indicated that the logical thinking level of mathematics teacher candidates was significantly affected by the variables of grade level and high school type, but not by the gender.

Key Words: Mathematics Education, Mathematics Teacher Candidates, Logical Thinking.