



## THE EFFECT OF METACOGNITION INSTRUCTION ON SOLVING MATHEMATICAL PROBLEMS IN SCIENCE LESSONS

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### Abstract

This study examines the metacognitive instruction's effect on solving mathematical problems in science concepts. Metacognitive skills are the strategies on solving mathematical problems, reading, conceptualizing, and writing. In this study, Mayer's four types of processes that translation, integration, planning-monitoring, and solution execution were administered as an instructional practice to 27 6<sup>th</sup> grade students in a science class. The pre and post test (Speed of Sound Achievement Test) were conducted to control and experimenter groups. The results showed that there was no significant difference between pre-test scores of experimental and control groups, however there was a significant difference between post and pre test scores of experimental group. Additionally, it was seen that students' work were improved and the time spent for each problem was decreased. Some students did not show improvement during the implementation, they were additionally interviewed by the experimenter. They expressed that because of the "Motivational" occasions; they did not show improvement.

**Keywords:** Cognition, Metacognition, Motivation.