

MATHEMATICAL KNOWLEDGE AND THE COGNITIVE AND METACOGNITIVE PROCESSES EMERGED IN MODEL-ELICITING ACTIVITIES

Dr. Juhaina Awawdeh SHAHBARI
Al-Qasemi Academic College of Education
The College of Sakhnin
Cana- ISRAEL

Assoc. Prof. Dr. Wajeeh DAHER
Al-Qasemi Academic College of Education
Nazareth- ISRAEL

Dr. Shaker Rasslan
Al-Qasemi Academic College of Education
Ibilline- ISRAEL

ABSTRACT

The study investigates the relationship between mathematical knowledge and cognitive and metacognitive processes exhibited by 83 students from Grades 6, 7, and 8 who engaged in a set of model-eliciting activities in groups of 4-5 students each. The data sources include audiotapes of their group work, worksheets, and notes. The findings indicate that the groups in each grade use different mathematical concepts. While they employed cognitive and metacognitive processes, these differed in number and distribution. The highest percent of cognitive processes and lowest percent of metacognitive processes occurred amongst the Grade 6 students. The lowest percent of cognitive processes and highest percent of metacognitive processes occurred amongst the Grade 8 students. The Grade 6 students' metacognitive processes indicate that they exhibited greater awareness than regulation and evaluation skills. Conversely, the Grade 7 and 8 students employed more regulation and evaluation processes.

Key Words: Cognitive processes, metacognitive processes, model-eliciting activities.