Differential Effect of Young Adults' and Students' MetaCognitive Skills in Mathematics Problem Solving Process

Bengi Birgili
MEF University, Istanbul, Turkey

Rumeysa Can
MEF University, Istanbul, Turkey

Tuna Çakar Çakar
MEF University, Istanbul, — Select One —, Turkey

Hanife Akar
Middle East Technical University, Ankara, Turkey

Abstract

The purpose of this study is to examine how young adults and pupils use their metacognitive abilities such as cognitive strategies and self-checking during the mathematics problem-solving process. The study group consisted of 12 young adults selected from three different faculties in a foundation university and 32 pupils from public and privateK-12 schools, Istanbul, Turkey. Multimodal mixed-methods design was employed, where participants were asked to think out loud while solving ten mathematical problems. The experimental process was recorded with the use of eye-tracking, which was utilized to evaluate the active use of metacognitive sub-skills. The findings from the experimental process revealed that there is a significant difference between the amount of reflection of young adults' and pupils' cognitive strategy and self-checking skill levels on their responses to mathematics problem solving process in favor of pupils.

In M. Goldwater, F. K. Anggoro, B. K. Hayes, & D. C. Ong (Eds.), *Proceedings of the 45th Annual Conference of the Cognitive Science Society.*