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Analysis of Tasks and Pupils' Solutions at the International Junior Science Olympiad from the Perspective of Cognitive Processes

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The paper presents the results of an analysis of the performance of pupils who participated in the international rounds of the International Junior Science Olympiad (IJSO) in 2023 and 2024 (six pupils each year). The aim of the analysis was to find out how the selected sample of Slovak pupils performed in standardized tests, more precisely –to what extent the pupils lacked the ability to use certain cognitive processes when solving physics problems.

The analysis also aimed to examine the kinds of physics tasks to which the pupils were exposed. Therefore, the paper provides a comprehensive summary of the nature of the tasks given to pupils at the IJSO and how the selected Slovak pupils approached these tasks in 2023 and 2024.

Based on the analysis, Slovak pupils showed relatively consistent performance in tasks requiring the Applying level of cognitive processes; however, they had difficulties with tasks involving higher cognitive processes, such as Analyzing.

Pracovisko fakulty (katedra)/ Department of Faculty

Katedra didaktiky matematiky, fyziky a informatiky

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