AI-SUPPORTED PROBLEM SOLVING AS A CATALYST FOR INNOVATION IN PHYSICS EDUCATION

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Artificial intelligence (AI) offers a wide range of possibilities in contemporary education. When confronted with challenging problems, many students consult AI systems, pose a question, and simply read the generated response. They often assume that the provided solution is correct. However, an important question arises: do students critically evaluate the validity of these answers? My experience as a physics teacher indicates that although AI systems can generate solutions to physics problems rapidly—often instantaneously—their responses are not always accurate.

This presenation examines the responses produced by several AI systems to a question posed by students to AI during a physics lesson: "*What is the average power of a cat that jumps 1 meter high, assuming the cat has a mass of 4 kg?*" Different AI tools provided different numerical results, highlighting inconsistencies and suggesting that not all AI-generated solutions were reliable. Poster presentation will allow comparison of individual AI models.

To verify the correctness of these responses, students conducted a video analysis of a cat's jump using the Tracker software. This analysis confirmed the accuracy of one AI-generated solution while disproving the correctness of another. Video analysis in Tracker represents an interactive, inquiry-based approach that aligns with the "analysis" level of Bloom's taxonomy [1-3]. Through mathematical and graphical examination of motion data, students determined the relevant physical parameters and independently derived the correct answer to the problem.

The findings presented in this article underscore the importance of critically evaluating AI-generated solutions. Particularly in physics and mathematics, where correctness depends on conceptual understanding, appropriate modeling, and precise numerical reasoning, students must verify and analyze AI outputs rather than accept them uncritically. When doubts arise, the problem can be reformulated or specified more precisely for the AI tool; however, final verification remains essential. Ultimately, it is the student's responsibility to assess whether the AI's solution is valid or whether an alternative reasoning path is required.

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Acknowledgments
This work was supported by the Slovak grant agency KEGA through projects no. 006ŽU-4/2024, 003TU Z-4/2024.