THE EFFECTIVENESS OF CHATGPT 3.5 IN PROBLEM SOLVING SKILLS OF GRADE 12 STEM STUDENTS IN GENERAL PHYSICS 2

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ABSTRACT

The integration of artificial intelligence (AI) in education has become increasingly relevant for struggling students with specific subjects that involve arithmetic problem-solving. Due to the complex nature of physics, the study sought to determine the reasons behind the difficulties and address the challenges it presents. In this search, to test the capabilities of AI as a guide tool for students in solving problems, a quantitative quasi-experimental research design was employed. The researchers utilized a purposive sampling in order to pick the participants suited for the study which were divided into two groups; a controlled group and an experimental group, consisting of 30 participants each. Utilizing a large language model developed by OpenAI, the research aimed to compare the performance of two groups, assessing the efficacy of the integration of the said AI. The researchers executed a three-part experiment, a pre-test assessment, which revealed a significant increase in scores by 34.41%, indicating the superiority of the experimental group over the control group. Despite the use of ChatGPT in the treated group, both of the controlled and experimental groups achieved similar scores in the given activities during discussion. Non-ChatGPT users demonstrated a mean score of 6.8 after the remediation period. In contrast, the experimental group substantially showcased a higher mean score of 9.57 in the post-test assessment. The findings of the study conclude that AI tools such as ChatGPT 3.5 effectively enhances the problem-solving abilities of STEM students.

Keywords: *AI Tool, ChatGPT3.5, Problem Solving, General Physics*