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THE USE OF ARTIFICIAL INTELLIGENCE AS A SUPPORT TOOL IN PROGRAMMING LEARNING AMONG POLYTECHNIC STUDENTS

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Abstract

The advancement of Artificial Intelligence has significantly impacted programming education by providing support in concept understanding, code generation, and problem-solving. This study aims to investigate the use of this technology as a support tool in

programming learning among polytechnic students, focusing on usage patterns, learning effectiveness, risk perception, and student acceptance. A quantitative research design was employed using a structured questionnaire to collect data related to usage, learning effectiveness, risk perception, and acceptance among students. The findings indicate that the technology is primarily used for understanding programming concepts, followed by generating code examples and debugging support, while its use for completing assignments is relatively lower. Overall, students demonstrate positive perceptions of its effectiveness, particularly in enhancing understanding, improving problem-solving abilities, and increasing learning engagement. Risk perception related to dependency and passive learning is found to be low, indicating controlled and responsible usage of the technology. In addition, instructor guidance is identified as an important factor in ensuring effective integration of the technology in programming learning. The study concludes that Artificial Intelligence serves as an effective support tool in programming education, with important implications for teaching practices in polytechnics.

Keywords:

Artificial Intelligence, Programming Education, Instructor Guidance, Polytechnic Students