

Providing Project-Based Learning in the AI Era: A Case Study

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Abstract

This case study explores the integration of artificial intelligence (AI) in project-based learning, focusing on two key issues: (1) whether AI tools reduce students' need for face-to-face participation, and (2) how ethical use of AI can be promoted. Participation and performance data from two project-based university courses over two years were analyzed, assuming increased AI use in the second year due to growing AI literacy. Findings were mixed. In the course involving less complex skills, participation declined and final grades dropped, suggesting students over-relied on AI and underestimated the need for in-person engagement. In contrast, participation and performance improved in the course requiring higher-order skills, likely due to both AI's limited ability to assist in complex tasks and strict course regulations. These results indicate that students are beginning to recognize AI's limitations and the importance of active participation in cognitively demanding contexts. On the ethical side, instructors began implementing policies to guide responsible AI use, including new assessment strategies and monitoring mechanisms. While these approaches support academic integrity, they also risk creating stress and reducing student autonomy if applied too rigidly. The study highlights the need for balanced, human-centered policies that encourage ethical AI integration without damaging the student-instructor relationship. Although limited in scope, these insights offer valuable contributions to discussions on AI literacy and its implications in project-based education. Broader studies are needed for generalization and practical guidance.

Keywords: AI in Education, Higher Education, Participation, Ethics, AI Literacy