

Use of AI Tools for Enhancing Student Engagement and Peer Assessment in Higher Education: Empirical Evidence and Challenges

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Abstract: Artificial Intelligence (AI) turned out to become one of the main trends in the world of higher education since it is altering the way students get involved in the educational process and how feedback and peer review can be organized. Based on a comparative literature review presented in this paper, there were 16 empirical and conceptual studies published in 2021-2025 addressing AI-based chatbots or adaptive learning systems, and generative AI tools. As has been determined, these technologies are very useful in increasing student interactions in the form of personalization, immediacy, and adaptive feedback as well as enhancing efficiency and consistency of peer assessment. Chatbots lead to the desire to request assistance, and continuous engagement can be supported, adaptive learning systems lead to behavioral and cognitive engagement, and generative AI technologies like large language models generate feedback on an extensive scale and tied to the specific context. Nonetheless, the tools are introduced along with the issues of trust, equity, academic integrity, and data ethics. There is some evidence to suggest that engagement benefits are the greatest when AI is applied as a scaffold combined with human teachers and overreliance may result in passive cognitive interaction and a decreased willingness to engage in peer interaction. The opposing synthesis has highlighted the two-sided truth of AI in the field of higher education: the information technology democratizes learning and feedback, but it brings serious pedagogical and ethical issues. The conclusion of the paper is that the successful incorporation of AI into human centred learning communities must rely on the premise of approachable incorporation characterized by transparency, fairness, and internet aptitude.

Keywords: Artificial Intelligence in Education, Student Engagement, Peer Assessment, Chatbots, Adaptive Learning Systems, Generative AI, Higher Education, Ethics, Digital Pedagogy

