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GENERATIVE AI AS A TOOL FOR PERSONALIZED LEARNING TRAJECTORIES IN HIGHER EDUCATION: OPPORTUNITIES AND RISKS

Introduction. Generative artificial intelligence (GenAI) tools, including large language models such as ChatGPT, Claude, and Gemini, enable the dynamic generation of educational content, adaptive feedback, and real-time adjustment of learning materials. In higher education this creates opportunities to move beyond standardized “one-size-fits-all” courses toward individualized learning trajectories that take into account students’ prior knowledge, pace, goals, and performance data (Yan et al., 2024).

Aim. The aim of this paper is to analyze the potential of generative AI for designing and supporting personalized learning trajectories in higher education and to identify the main opportunities and risks associated with its pedagogical application.

Results. Generative AI supports personalized learning trajectories through several mechanisms. It can generate explanations, examples, and practice tasks adapted to the learner’s current level; provide continuous formative feedback; and recommend alternative learning paths based on diagnosed knowledge gaps. These capabilities scale personalization in large student groups and support self-regulated learning by offering metacognitive prompts and progress tracking (OECD, 2023; Yan et al., 2024).

At the same time, significant risks accompany these opportunities. Over-reliance on GenAI may reduce students’ independent problem-solving and critical thinking skills. Model hallucinations can introduce factual inaccuracies that learners uncritically accept. Academic integrity issues arise when AI-generated work is submitted without proper acknowledgment. Additional concerns include data privacy, algorithmic bias in recommendations, and the digital divide related to unequal access to tools and prompt-engineering competence (Miao et al., 2021; Yan et al., 2024).

Conclusions. Generative AI can serve as an effective tool for constructing personalized learning trajectories when it is integrated as a pedagogical assistant rather than a substitute for teacher design and human interaction. Successful implementation requires institutional policies on responsible AI use, systematic development of AI literacy among both students and faculty, transparent assessment criteria, and continuous monitoring of learning outcomes and student well-being. Only under these conditions can the benefits of personalization outweigh the associated risks.

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