

AI Support for Online/Distance Teaching/Learning in Higher Education

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Abstract:

Artificial intelligence is transforming pedagogy and teaching in higher education by reshaping content delivery, assessments, course design, and institutional (administrative) operations. Different AI systems, generative tools and intelligent assistants enable personalized learning, flexible platforms help adapting content to individual needs and learning styles.

We compared reported use of AI-based learning support systems and made recommendations how and where they can be used. But their application also comes with some conditions and requirements regarding how they can be used.

Research demonstrates that AI can dramatically compress learning timeframes by handling repetitive cognitive tasks, so educators can focus on deeper learning experiences. The most notable evidence comes from Harvard University and EDUCAUSE studies where students using AI and AI tutors learned more than twice as much in less time compared to traditional active learning classrooms, while at the same time reporting higher engagement and motivation levels.

Research results also show that AI-based tutoring assistants can support learning and help with assessment results by an average of ~25–27%, significantly improving effectiveness and efficiency in online and distance education.

Educators – who are using AI for smarter course material development – can convert raw presentations and lecture notes into structured lessons, quizzes, tests and multimedia content, and with the help of automated tools decrease preparation from weeks to days. AI-powered feedback and grading systems can further reduce faculty workload, and enable instructors to focus on research, mentoring and skill-based instruction.

This shift requires a justified classroom model, where AI is handling content delivery while faculty concentrate on such competencies as analysis, synthesis, and application.

Keywords:

AI support, higher education, online learning, online teaching.