


Chapter 12

AI Roles in Lifelong Learning and Professional Development

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ABSTRACT

Artificial intelligence (AI) has changed education and research forever, especially with natural language processing (NLP) and large language models (LLMs) such as GPT-4 and BARD. This research gives a complete overview of AI, NLP, and LLMs while exploring their potential applications in these areas. For scholars, AI can improve text production, data interpretation, literature review, formatting, editing and peer review. In the context of education, AI provides educational assistance; critical feedback; assessment and grading; customized curriculums; personalized career advice; mental wellness support among others. It is important to address challenges like ethical considerations and algorithmic biases so that we can fully exploit the possibilities brought about by these technologies. The main objective of this study is to contribute towards ongoing discussions about the place of AI in education and research by underscoring its ability to enhance outcomes for students, teachers as well as researchers.

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INTRODUCTION

The Impact Artificial Intelligence in Higher Education

AI has had a great impact on higher education because it transformed instruction, education, and administrative activities. AI applications for academics include text generation, data analysis, personalised guidance for careers, and mental well-being support (Alqahtani et al., 2023). Studies have shown that the growing trend of artificial intelligence in higher education is giving more importance to enhancing teaching and learning skills, solving security and privacy issues, and upgrading infrastructure and training (Chan, 2023).

Personalised Learning is Transforming Education

AI have the power to transform higher education by giving highly personalized learning experiences to students. Unlike the traditional model of education, with a typical one-size-fits-all solution, systems in which AI drives analyze data to understand each student's strengths and weaknesses. This enables us to create different learning paths to be built on the fly each time, giving the help and resources that can automatically engage with each student and help them understand things at their own pace. For example, AI suggests doing specific reading, practice activities, or interactives, given their judgement of where their learning stands regarding understanding. Another way AI tutors can do this is by offering help at the time it is most needed, which increases access to learning while reducing reliance on the fixed time slots within classrooms. A personalized approach of this calibre will only help increase student engagement and motivation, thus increasing academic outcomes through more effective solutions to individual challenges. The upcoming AI in higher education will make it a lot more active, responsive and all-in-one learning environment and prepare the students for the better demands of the future.

That is why personalised learning remains an underdeveloped technique in education, according to the research. The adopting of personalised learning plans, competency-based, criterion-referenced assessment of students' progress, task or problem-based instruction and multiple years of mentorship provided within the school in the US outliners outlines some of the critical aspects of personalisation in education (Zdravkova, 2023). One study at the University of East London shows that individualistic educational strategies foster new professional identities and improve student progression and retention (Huh et al., 2022). Adapting the interface shown above, implanting and adapting a personalisation framework in educational significance, including the Ghost Code, enables us to counter the situation according to individual traits for better learning achievements and engagement. The personal-

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