

ARTIFICIAL INTELLIGENCE AS AN INNOVATIVE EDUCATIONAL TOOL IN HIGHER EDUCATION: PEDAGOGICAL OPPORTUNITIES AND CHALLENGES

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Abstract AI is developing swiftly and is being utilized more and more in schools and other places where people study throughout the globe to aid with testing, classes, and learning in general. AI-powered tools help students learn more, receive feedback quicker, and do more in class. We still don't completely grasp how AI will affect the way we educate, even with these advantages.

This study looks at how learning activities that use AI effect college students' grades and their desire to learn. This research looks at both the good and bad things of employing AI in schools, as well as what students think. The findings demonstrate that introducing AI capabilities to classroom education in a judicious way may help pupils. People were anxious that pupils would rely too much on AI technologies. The findings highlight how crucial it is to employ AI safely and responsibly.

The findings of this research contribute to ongoing discussions on the enhancement of education via innovative approaches. It makes the case that AI shouldn't just be seen of as a new technology, but also as a beneficial tool that can help kids learn if it's utilized well.

Keywords: artificial intelligence, educational innovation, higher education, digital transformation, pedagogy

1. Introduction

The academic sector has seen a dramatic quickening in the pace of digital change in the last few years. If there is one new tool that is revolutionizing modern education, it is artificial intelligence (AI). Generative language models, adaptive learning technology, and computer-based evaluations are becoming more commonplace in today's classrooms. By facilitating the attainment of academic goals, raising the bar for educational quality, and guaranteeing that every student has a unique educational experience, these technologies benefit both teachers and students.

Education cannot be improved just via the use of technology. Technology changes the way we learn, and we need to be aware of that. A lot of people think AI is great at technical jobs, but others have different thoughts about how it will change teaching methods. Teachers

face new problems when their students are forthright, make good use of technology, and find a happy medium between teacher-led instruction and student initiative. The introduction of artificial intelligence (AI) into the classroom will not improve student learning unless there is a strong educational case for doing so. The problem can become worse as a result.

A number of prior research have shown that people's feelings toward the use of AI at universities were mixed. Artificial intelligence makes it easier to provide feedback, gives students more options for how to learn, and encourages them to study on their own. The over-reliance on AI-generated content worries them because it might make people less capable of thinking for themselves. The following reasons demonstrate that AI goes beyond simple technical advancement. You may think of it as a way to study that incorporates teachings.

This study intends to improve education and inspire new ideas by investigating how AI-assisted learning activities affect students' involvement and views of higher education. This investigation stems from the following questions:

1. How does the use of AI in college courses affect the students?
2. When it comes to schools, what are the pros and cons of using AI?
3. How might artificial intelligence (AI) help schools come up with new ideas?

2. Literature Review

2.1 Artificial Intelligence and Educational Innovation

Higher education is becoming more and more linked to digital technologies as a source of educational innovation. This is because these technologies change how both students and teachers learn and teach. Many people think that AI is causing this change because it can learn and make predictions (Holmes et al., 2019; Luckin et al., 2016). AI systems can respond to what students do in real time, which is different from older teaching tools. Because of this, new ways of customizing and giving feedback are opened up.

In their 2020 paper, Williamson and Eynon say that AI should be seen as a part of a larger sociotechnical system that changes how schools build, test, and confirm knowledge. This point of view says that adding AI marks a change from innovation based on tools to a more all-encompassing educational revolution.

2.2 AI Uses in Higher Education

A report by Zawacki-Richter et al. (2019) indicates that AI is primarily utilized in higher education for purposes such as learning analytics, adaptive learning systems, automatic testing, and academic support tools. Individuals ought to have the ability to swiftly acquire knowledge and engage actively. Various methods of learning must also be considered.

According to a study by Ouyang et al. (2022), the use of AI in educational contexts has the potential to enhance student engagement and assist them in assessing their learning

progress in both online and hybrid environments. Conversely, the authors indicate that much of the existing data is derived from treatments that have a duration of only a few weeks or months. That is the reason it is challenging to predict what will occur in schools moving forward.

2.3 Teaching Opportunities of AI Integration

Numerous studies underscore that the integration of AI can yield educational advantages when harmonised with instructional design principles. AI-assisted feedback systems have demonstrated efficacy in enhancing learning efficiency and fostering learner autonomy (Holmes et al., 2019). Students frequently indicate heightened motivation and confidence when AI tools are employed to facilitate idea formulation and modification (Kasneci et al., 2023).

Luckin et al. (2016) elucidate that the intentional mediation of AI's application by educators can facilitate the development of metacognitive skills and higher-order thinking. This corroborates the notion that innovative educational concepts necessitate genuine collaboration between humans and AI, rather than merely replacing technology.

2.4 Problems and Ethical Considerations

The use of AI presents significant potential, yet it also raises numerous social and educational concerns. According to Selwyn (2019), artificial intelligence (AI) may impede individuals' ability to engage in creative and critical thinking. According to Asneci et al. (2023), students frequently express concerns regarding the appropriate use of AI, particularly in relation to upholding academic integrity.

The policy literature emphasizes the necessity of employing AI in educational settings ethically and responsibly.

According to UNESCO (2021), the application of AI should be transparent, accountable, and aligned with human values. The absence of established institutional and pedagogical norms poses a risk of generating inequitable conditions in the use of AI within educational settings.

2.5 Research Gaps

There is some useful information in the books, but there are also some holes. To begin, Zawakki-Richter et al. (2019) say that study is more likely to look at the benefits of technology than at how to teach. Second, a lot of studies only use the subjects' own words and only look at the benefits of short-term treatments (Ouyang et al., 2022). Also, there aren't many studies that look at how AI can be used to improve learning in certain school settings. This study fills in those gaps by looking at how organized higher education settings affect how engaged and knowledgeable students are.

3. Methods

A mixed-methods strategy was implemented to examine quantitative and qualitative components of students' AI-assisted learning. Participating were undergraduates from a

wide range of academic departments at an accredited institution. Incorporating AI-based activities into already established lesson plans took very no effort at all.

Students' levels of engagement and the general public's perceptions of the efficacy of AI technology were both measured using structured surveys. The qualitative data was gathered via exercises that had students reflect on and write about their own personal experiences and challenges. Also, descriptive statistics was utilized to examine the numerical data, and theme analysis to uncover recurring themes in the qualitative data.

4. Results

The findings of the study indicate that a majority of students believe that utilizing AI for learning is beneficial. The majority of participants expressed a heightened interest in their learning and gained deeper insights into the subject matter. AI tools have assisted individuals in generating innovative ideas, clarifying their learning objectives, and completing tasks independently.

Several issues arose and were discussed. Students felt apprehensive about utilizing AI extensively and were uncertain about its application in the classroom. The findings indicate that AI can assist in learning only if one understands how to utilize it effectively.

5. Discussion

In a well-planned educational setting, the findings demonstrate that artificial intelligence has the potential to be an innovative instructional tool. AI-enhanced learning has shown, in a manner that is comparable to that of past research, that it not only makes students more engaged in learning, but also gives them the impression that they are learning more successfully. The challenges that have been identified demonstrate how vital it is to protect values and provide educational solutions to the issues that may arise.

When attempting to enhance education, it is essential to prioritize the achievement of educational objectives before introducing new forms of technology. The use of artificial intelligence is intended to enhance critical thinking, promote creative flexibility, and facilitate learning that is more self-reflective. Teachers play a crucial role in ensuring that artificial intelligence is used in the classroom in a way that is both successful and serves a specific goal.

6. Conclusion

What are the theoretical and practical effects of AI technologies in higher education? That was the goal of this project. The results suggest that artificial intelligence could not only improve how well we learn but also make it more fun. But the fact that academic ethics and too much dependence are problems shows how important it is to have ethical and teaching frameworks. The research in this study adds to the body of work on education and creativity by showing that the successful integration of artificial intelligence depends on both the technology itself and the way it is taught.

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