

Artificial Intelligence in Online Education: Transforming Teaching and Learning in the Digital Era

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Abstract

The beginning of artificial intelligence (AI) technology in the education sector has largely taken over conventional classrooms and revolutionized the way education is conducted to the admiration of many. In recent years, online exams have risen in popularity, and they provide a number of benefits. One of the advantages of conducting tests online is that there are several balances and checks in place to ensure security in examinations and eliminate the possibility of malpractice. Human mistakes are common in traditional offline tests, where as in online exams, it really isn't a concern. Traditional paper-n-pen tests needs various coordination and physical labor, which was boring, prone to human mistake in various stages. With the help of innovative technologies there is an impact on the methods of teaching and learning as well. With the rapid development of artificial intelligence (AI) technology in recent years, using AI in education has become more and more specious.

Introduction

AI technology is continuously updated and widely used in various fields (Pannu, 2015). It is an indisputable fact that AI has increasingly penetrated into the educational environment and teaching and evaluation process. In the process of development, more and more people pay attention to the importance of this technology in the field of education precisely on online education. AI has been widely used in the education field and has shown substantial advantages, which has a profound impact on the teaching and evaluation process as well as classroom management (Chassignol, Khoroshavin, Klimova, & Bilyatdinova, 2018; Roll & Wylie, 2016). AI can continuously optimize and improve the learning environment, stimulate the enthusiasm, initiative and creativity of students (Colchester, et al, 2017; Yang & Bai, 2020). At the same time, it can significantly improve the classroom management level of teachers and ensure that classroom management is more reasonable and efficient (Tuomi, 2018; Wang, 2020). Recent studies in the area of AI research (Tegmark, 2016; RileyMar, 2017), revealed that computers have acquired certain degrees of intentionality and consciousness, a feature that gives machines the ability and capacity to combine modern algorithms with deep machines learning experiences for the purpose of solving complex

human related issues, a feature never really believed could be possible with machines. Today, advances in these AI innovations have made it possible for certain intelligent machines and devices to be able to process and initiate facial recognition in most devices today.

Literature Review

While exploring the existing literature the research of Stefan & Kerr (2017) investigates educational implications of emerging technologies on the way students learn and how institutions teach and evolve. Recent technological advancements and the increasing speed of adopting new technologies in higher education are explored in order to predict the future nature of higher education in a world where artificial intelligence is part of the fabric of our universities. We pinpoint some challenges for institutions of higher education and student learning in the adoption of these technologies for teaching, learning, student support, and administration. Further, the roles and applicability of AI techniques has been continuously changing. The education community is finding innovative ways to productively implement AI for faculty and learners. AI should be leveraged to create an improved student experience. Elon University used AI in order to help students in tracking previously taken courses and help them apply this information in course-planning (Lee Gardner, 2018). AI is used in Free Application for Federal Student Aid (FAFSA) completion, campus tour and class scheduling. Georgia State University uses a chatbot called Pounce, built by AdmitHub that reaches out students through text to intimate incomplete tasks by set dates (Page & Gehlbacj, 2018). Aljohani et al. used Google Home Mini for interacting with students and anticipated to achieve enhanced degree of student accomplishment in physics. Nagao et al. used e-learning aka intelligent tutoring system (ITS) to create user models for learners to improve learning contents.

Objective of the Study

1. To study the impact of AI on the improvement of efficiency of online classes.
2. To study the impact of AI on the Expansion on Online Education.

Hypothesis of the study

H1- There is no significant impact that AI has expanded online education

H2- There is no significant impact in the improvement of efficiency of online courses through artificial intelligence

Data Analysis-

Correlations				
			increase in the number of people	improvement of efficiency of online courses
Spearman's rho	artificial intelligence	Correlation Coefficient	1.000	.789*
		Sig. (1-tailed)	.	.011
		N	460	460
	improvement of efficiency of online courses	Correlation Coefficient	.789*	1.000
		Sig. (1-tailed)	.011	.
		N	460	460

*. Correlation is significant at the 0.05 level (1-tailed).

Correlations				
			Artificial Intelligence	Expanded Online education
Spearman's rho	Artificial Intelligence	Correlation Coefficient	1.000	.893*
		Sig. (1-tailed)	.	.023
		N	460	460
	Expanded Online education using AI Mode	Correlation Coefficient	.893*	1.000
		Sig. (1-tailed)	.023	.
		N	460	460

*. Correlation is significant at the 0.05 level (1-tailed).

Interpretation

The analysis results show that the Spearman's rho correlation coefficient value is 0.789 artificial intelligence and improvement of efficiency of online courses, with a corresponding p-value of 0.011. The p-value being less than the significance level of 0.05 indicates statistical significance. Therefore, we reject the null hypothesis, which states that there is no significant relationship artificial intelligence and improvement of efficiency of online courses, and accept the alternative hypothesis, suggesting a significant relationship between artificial intelligence and improvement of efficiency of online courses. Hence, we can conclude that there exists a significant relationship between artificial intelligence and artificial intelligence.

The results show that the Spearman's rho correlation coefficient value is 0.893 for artificial intelligence and expanded online education, with a corresponding p-value of 0.023. The p-value being less than the significance level of 0.05 indicates statistical significance. Therefore, we reject the null hypothesis, which states that there is no significant relationship artificial intelligence and expanded online education accept the alternative hypothesis, suggesting a significant relationship between artificial intelligence and expand online education. Hence, we can conclude that there exists a significant relationship between artificial intelligence and expand online education.

Conclusion-

The rise of AI makes it impossible to ignore a serious debate about its future role of teaching and learning in higher education and what type of choices universities will make in regard to this issue. The fast pace of technology innovation and the associated job displacement, acknowledged widely by experts in the field (source), implies that teaching in higher education requires a reconsideration of teachers' role and pedagogies. The current use of technological solutions such as 'learning management systems' or IT solutions to detect plagiarism already raise the question of who sets the agenda for teaching and learning: corporate ventures or institutions of higher education? The rise of techlords and the quasi-monopoly of few tech giants also come with questions regarding the importance of privacy and the possibility of a dystopian future. These issues deserve a special attention as universities should include this set of risks when thinking about a sustainable future (Popenici & Kerr 2017).

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