Challenges of Using Artificial Intelligence at the University Level

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A R T I C L E I N F O	**A B S T R A C T**
	The capacity of robots to mimic human thinking processes, especially in huge data systems for certain kinds of tasks, is known as artificial intelligence. The purpose of the study was to identify the barriers to artificial intelligence adoption at the university level. Research was quantitative in nature and a survey method was used to collect data. The population of this research is limited to all students enrolled in two public and two private universities located in the Lahore district. The 487 students were selected using a convenient sampling technique from two public and two private Universities in Lahore. Data was gathered by using a self-developed instrument. The data were analyzed through SPSS (Statistical Packages for Social Sciences). inferential statistics were used to calculate the data. Regarding the challenges posed by AI in higher education, male and female students' opinions did not significantly vary from one another. Universities should employ artificial intelligence, with explicit ethical principles for AI development that cover bias mitigation, student data protection, and responsible development.

Introduction

Artificial Intelligence (AI) has been established as a front-line knowledge in the field of knowledge, skilled in fully changing a wide variety of businesses, together with the higher sector of education. The habit of using Machine learning in settled countries and organizations deals with vast governmental and learning tasks. The objectives of this research are to collect complete knowledge from earlier studies about machine learning, this study also focuses on the higher education sector, and to know about the advantages and disadvantages of machines in education with its practice (Chen, Chen,. & Lin. 2020).

Machine learning (AI) promotes an amount of activities as content writing, video making & editing, writing through essays, and more. Likewise, machines convert the old ways of learning and add quick techniques in the higher education sector (Crompton & Burke, 2023). Machine learning AI affected many things in the higher education sector industry. For advancement and improvements in outcome results, it could give the chance of self-learning ways where students can get different material with different methods as they need (Crompton & Burke, 2023). According to Hié and Thouary (2023), artificial intelligence (AI) has the potential to automate administrative activities, freeing up time for educators and students to concentrate on research and instruction. But in order for students to succeed, AI-powered learning can provide perceptions into their performance and engagement (Tubino & Adach .2022).

In comparison to the last five years, there has been a major shift in higher education (Crompton & Burke, 2023). AI has many advantages for higher education, including teaching all kinds of students, offering them timely, personalized feedback, enhancing assessment, and supporting academic achievement

(Cheng et al., 2022).

China is surpassing the US in the number of publications, indicating that the research landscape in this sector has improved (Popenici & Kerr. 2017). Furthermore, compared to other years, therein a notable rise in number of studies printed in last two years (Crompton & Burke, 2023). This shows that interest in and funding for AI applications in the field of higher education is growing.

However, there are several issues and concerns with using AI tools in schooling sector. Even if machine learning (AI) has the power towards completely convert higher education, it is crucial to highlight the challenges that might undermine its widespread use in business. Technical difficulties, moral dilemmas, and the need for modifications to institutional and practice structures are a few examples of these obstacles and issues.

Numerous sectors have ethical issues about the exploitation of AI technology and data protection (Crompton & Burke, 2023). The digital gap is a problem that many pupils who have restricted access to technology must deal with (Hié & Thoury, 2023). Additionally, some organizations may find it upsetting to learn that using AI would need a significant investment in infrastructure and training (Roll & Wylie. 2016).

In this study, the researchers looked at the state of AI application in higher education today, assessing both the opportunities and possible barriers.

Objective of Study

Keeping in mind the importance of artificial intelligence application in higher education the following objective was formulated for the study:

To identify the barriers to artificial intelligence adoption at the university level.

Methodology

Research Design

The study was quantitative and the Survey method was used to collect the data. The exploratory method was used by the researcher taking quantitative information and refining the quantitative findings. The survey method assists in obtaining the opinions of the respondents. By purpose, the study was of the descriptive type that according to Abuhamda and Basharat (2021), described the targeted phenomenon and characteristics of the population of the research study and mainly eyes on the 'what' aspect of the research subject. A particular group of specific interest is called the population of the study. The population of this research was all students enrolled in two public and two private universities in the Lahore district. Since it is sometimes impossible to investigate the complete population, sampling entails choosing a sample for data gathering. The 487 students were selected using a convenient sampling technique from two public and two private Universities in Lahore.

Research Instrument

Data was gathered by using a self-developed instrument based on literature reviews. The researcher constructed an online Google form for the collection of data. The questionnaire was divided into two sections. "Prospects of AI in Universities" made up the first section, while "Obstacles of AI in Universities" made up the second.

All pupils received an online Google form with instructions to complete and submit. Every responder was made fully aware that the objective of the data-gathering activity was only for research. A pilot study was conducted to measure the validity and reliability of the instrument. The opinions of five experts validated the instrument. The reliability of the instruments was calculated by Cronbach Alpha (Yilmaz, 2018). Necessary changes were made in the questionnaire based on suggestions and comments from the experts and the respondents. However, 50 students of from two public and two private Universities in Lahore were taken for a pilot study. the reliability of two public and two private university students' questionnaires. The number of items in the questionnaire was 22 and Cronbach's Alpha value of the instrument was .902

Data Analysis

The data were analyzed through SPSS (Statistical Packages for Social Sciences). inferential statistics were used to calculate the data. One-way ANOVA was utilized in inferential statistics to determine whether there was a significant difference between the demographic variables.

Table 1

Analysis of students' opinions varying according to the study program about the prospects for AI in higher education

Study Programme	N	M	SD	df Between groups	df Within groups	F	p-value
				ANOVA			
BS	435	26.86	8.146				
MPhil	40	24.18	8.587	2	484	1.939	0.145
PHD	12	27.00	7.141				

Table 1 indicates that One-way ANOVA was applied to identify the difference in student opinions varying according to the study program about the prospects for AI in higher education. There was no significant difference between BS (M= 26.86, SD = 8.146), MPhil (M= 24.18, SD = 8.587), F=1.939, P=0.145 and = .823 and PHD (M= 27.00, SD = 7.141), Therefore, it was determined that no significant difference exists between BS, MPhil and PhD students regarding their about the prospects for AI in higher education.

Table 2

Examination of student opinions as they relate to the research program about AI barriers in higher education

Study Programme	N	M	SD	df Between groups	df Within groups	F	p-value
BS	435	29.33	8.046				
MPhil	40	28.38	7.010	2	484	0.768	0.464
PHD	12	31.73	8.486				

Table 2 indicates that One-Way ANOVA was applied to examine the difference in student opinions varying about AI barriers in higher education. There was no significant difference between BS (M= 29.38, SD = 8.046), MPhil (M= 28.38, SD = 7.010), F=0.768, P=0.464 and PHD (M= 31.73, SD = 8.486), Therefore, it was determined that no significant difference exists between BS, MPhil and PhD students regarding their opinion about AI barriers in higher education.

Table 4

Investigation of student opinions varying according to the University1,2,3and 4 about the prospects for AI in higher education

Institutions	N	M	SD	df Between groups	df Within groups	F	p-value
University 1	140	26.56	8.974				
University 2	204	26.96	7.947				
University 3	80	25.63	8.215	3	483	0.570	0.635
University 4	63	27.09	7.041				

Table 3 indicates that One-Way ANOVA was applied to examine the difference in student opinions according to the University1,2,3and 4 about the prospects for AI in higher education.

. There was no significant difference between University 1 (M= 26.56, SD = 8.974), University 2 (M= 26.96, SD = 7.947), University 3 (M= 27.09, SD = 7.0471), F=0.570, P=0.635 and University 4 (M 27.09, SD = 7.041) Therefore, it was determined that no significant difference exists between University 1, University 2, University 3 and University 4 regarding their opinion about the prospects for AI in higher education.

Table 5

Comparing the average views of gender-based students around the future of artificial intelligence in higher education

Gender	*N*	Mean	Std. deviation	*df*	t-value	*Sign.*
Male	166	27.31	8.229	485	1.296	.687
Female	321	26.30	8.142			

Table 5 shows that the T-test was used to determine the male and female University students' views, on the future of artificial intelligence in higher education. There was no significant difference among Males (*M*= 27.31, *SD*=8.229) and females (*M*= 26.30, *SD*= 8.142) had no significant difference (*t*= -1.296, *p*=.687). Males (M= 1.0951, SD 6.34012) and females (M= 1.1010, SD 5.45342) had no significant difference (t= -1.208, p=.008). Therefore, it concluded that there were gender-based differences in views of the potential for AI in higher education (*t*value=1.297, *p*-value=.686).

Table 6

Assessment in the views of gander based scholars near the barriers to AI in higher education

Gender	*N*	Mean	Std. deviation	*df*	t-value	*Sign.*
Male	166	29.36	8.001	485	.119	.487
Female	321	29.29	7.974			

Table 5 shows that the T-test was used to determine the male and female University students' views, on the barriers of artificial intelligence in higher education. There was no significant difference among Males (*M*= 29.36, *SD*=8.001) and females (*M*= 29.29, *SD*= 7.974) had no significant difference (*t*= .119, *p*=.487). Males (M= 1.0951, SD 6.34012) and females (M= 1.1010, SD 5.45342) had no significant difference (t= -1.208, p=.008). Therefore, it concluded that there were gender-based differences in views of the potential for AI in higher education (*t*value=1.297, *p*-value=.686).

Discussion

Academic writing instruction and learning have intriguing new opportunities as artificial intelligence (AI) revolutionizes education. Through carefully analyzing these obstacles and possibilities, we can fully appreciate how artificial intelligence will influence academic writing instruction going forward (Tang et al., 2020).

AI has the potential to transform academic writing by personalizing the educational process. By analyzing student data, AI can provide resources and individualized feedback, improving the efficacy of learning. However, using AI to engage with kids goes beyond just technology; doing so fosters the development of critical thinking, problem-solving, and analytical abilities that are vital for success in the classroom and in life at large (Yufei et al., 2020).

These findings demonstrate how this tool emphasizes student agency in the feedback process and places it in a student-centered, as opposed to a teacher-centered, role. This suggests that students' enjoyment of feedback for enhancing their writing skills has a greater impact on their usage of the tool—or lack thereof—than their capacity to interpret feedback information. With choices to score the input, remark on its usefulness, and indicate any errors or inaccurate feedback, students could and were encouraged to interact with the tool for each occurrence of feedback. Students used all of these options, giving them the chance to comment on how helpful they thought the AI-powered feedback was. This suggests that some students see feedback as a two-way process(Alajmi et al., 2020).

AI may be thought of as a useful research helper! You may concentrate on the concepts and analysis that really matter by delegating formatting, referencing, and even proofreading to it (Tubino, & Adachi, 2022). Similar to a dedicated instructor, AI can provide you immediate, tailored criticism on your work. You may study at your own speed and acquire the critical thinking abilities necessary to be successful in any area with this individualized method (Chen et al., 2022).

Although AI is a useful tool, there are several difficulties with it. Policymakers and educators must collaborate to ensure that AI is used morally and sensibly. This entails creating precise policies, educating educators, and guaranteeing that AI supports learning for all kids, regardless of background. Additionally, it's critical to keep in mind that AI is only a tool and that excellent instruction and a robust curriculum are still the best ways for students to learn (Tubino & Adach , 2022).

The information in the previous part led to the conclusion that most university students were ignorant about the possible advantages and difficulties of using AI in higher education since they remained unsure when responding to the questions.

Recommendations

• According to the findings of this study, the study recommends familiarizing students with the application of artificial intelligence for academic objectives, artificial intelligence should be offered as a topic in classes IX through XII.

• Universities should employ artificial intelligence, with explicit ethical principles for AI development that cover bias mitigation, student data protection, and responsible development.

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