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EXPLORING NEW HORIZONS IN EDUCATION: SELF-DISCLOSED READINESS AND KEY ELEMENTS IN IMPLEMENTING AI FOR EDUCATIONAL PURPOSES

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Abstract
Modern developments in AI and machine learning have the possible ways to improve both the learning experiences for students and the capacity of educators. Essays with automatic, making personalized student recommendations, and improving instructional resources are all examples of AI approaches in education. In an informal sense, there are three types of AI programmes that aim to improve education: direction, knowledge, and teacher. These broad groups are not equally exclusive, but they do assistance as a basis for further classification and growth. In order to healthier direct imminent research and development of AI applications in education, this study will examine and classify previous AI efforts to improve education. Given that the foundation of the contemporary economy in higher education, the potential advantages of AI-powered education are notable. By automating formerly manual processes, AI can lessen information gaps and save time. This study aims to offers an artificial intelligence (AI) in education by reviewing its historical applications in the hope of better understanding the area and paving the way for its further growth and structure for administration and future advancement. In order to improved direct future research and growth of AI applications in education, this study will examine and classify earlier AI efforts to enhance education. This paper offer a classification system for artificial intelligence (AI) in education by reviewing its historical applications in the hope of bettering our knowledge of the area and paving the way for its further advancement.

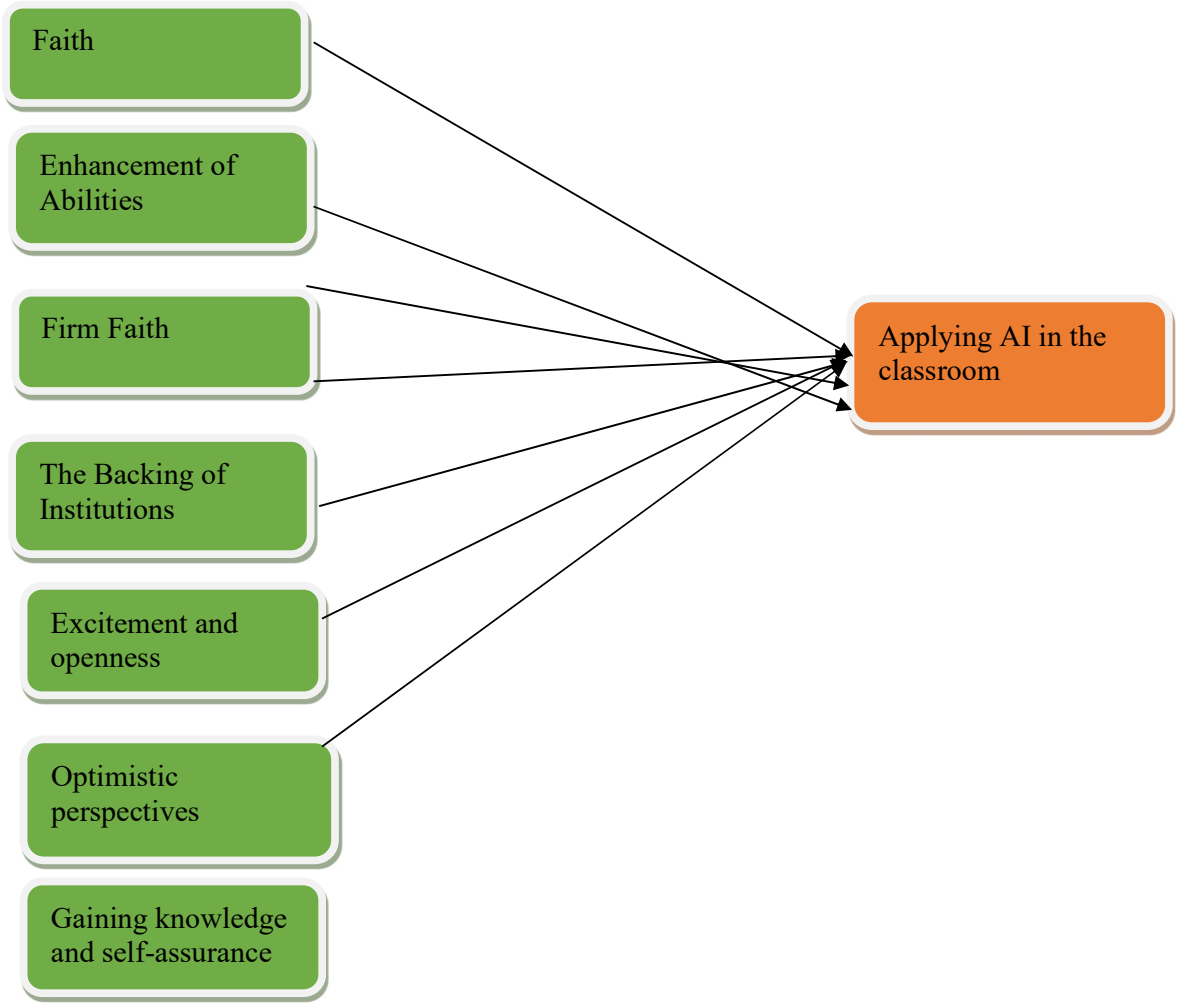
Keywords: Artificial Intelligence, Higher Education, data driven policies, ChatGPT, ITS, ASP, ASE, PP

Introduction

Computers to learn and solve problems in ways that humans can is known as artificial intelligence (AI) (Artificial Intelligence vs. Machine Learning: Microsoft Azure, 2020). ML is also based on data used to teach computers. The importance of thinking about how AI might influence and enhance education is growing as more and more accessible AI tools like ChatGPT become available. "Guidance," "Teacher," and "Student" are three broad categories that might help us think about the ways AI will affect schools and classrooms. The growth of new AI teaching initiatives can be facilitated by classifying existing ones. With the rapid progression and extensive use of AI, it is helpful to have a system in place to make well-informed decisions regarding its integration and how it will influence education going forward.

AI enables the preparation of data-driven policies, authorizing institutions to make well-informed choices and familiarize to the emerging needs of students and the workforce. The merging of AI and higher education, it becomes clear that the assistances go beyond mere efficacy improvements. AI has the thinkable to level the playing field in terms of access to education, close attainment disparities, and foster a growth attitude.

Conceptual Model of the Study



Source: Developed by Author

Review of Literature

Academics have begun to look into studies that have examined the practice of AI in the classroom as an outcome of the increasing popularity of AIEd. A number of researchers have chosen to narrow their emphasis by conducting systematic reviews. One example is the systematic review and bibliographic investigation of AI teaching that Liang et al. (2021) carried out. Thirty years of artificial intelligence (AI) use in engineering were the subject of Shukla et al.'s (2019) longitudinal bibliometric study. In a bibliometric mapping study, Hwang and Tu (2021) looked at how AI is being used in maths classes, and WinklerSchwartz et al. (2019) looked at how AI is being used in medical schools, specifically how to use machine learning

to evaluate surgical skills. However, these studies do not explain AI in HE generally; they only address AI in IEd. Investigative (AI) in HE from a broader viewpoint, Ouyang et al. (2022) conducted a thorough review of AI's part in online HE between 2011 and 2020. Their study highlighted how AI in online higher education is mainly utilized for predicting performance, providing resources, automating assessments, and enriching learning experiences. Delving into the realm of Latin American universities, Salas-Pilco and Yang (2022) explored the various AI in this educational setting. While shedding light on the online and Latin American landscapes, these studies fall short of delivering a comprehensive analysis of AI in higher education. Research efforts have been dedicated to investigating the impact of AI in higher education. Hinojo-Lucena et al. (2019) conducted to examine how AI in education influences higher education. Their analysis of AI in HE papers indexed in Scopus and the WOS databases from 2007- 2017 exposed that proceedings papers constituted the majority of available document types. Notably, articles focusing on virtual tutoring for enhancing learning garnered the most mentions, with the United States leading in overall publications. Addressing the most discussed topics in the highest 50 most quoted articles on AI in higher education from 1996 to 2020, Chu et al. (2022) highlighted predictions of students' learning status as a prominent theme. AI was most prominently utilized in the engineering curriculum, playing a significant role in problem-solving and forecasting. Lastly, Zawacki-Richter et al. (2019) analyzed AI in higher education from 2007 to 2018, identifying four main applications: ITS, ASP, ASE, and PP. Rapid advancements of AI and AI in HE limited research has been conducted on AI in HE over the past two years.

Research Question

How can the incorporation of Artificial Intelligence (AI) elevate the higher education procedure, and what are the consequences for student educational achievements, institutional efficiency, and the advancement of teaching and academic research?

Research Objective

- Examining the Eagerness of Teacher Training Program Graduates to Incorporate AI Tools in Educational Settings
- Uncovering Crucial Factors Affecting Successful Lesson Planning and Delivery with AI Incorporation
- Delving into the Connection between Educators' Backgrounds and Their View of AI in Education
- Evaluating the Influence of Institutional Support on the Acceptance of AI Technologies in Teaching Methods
- Assessing the Efficacy of AI Tools in Improving Teaching and Learning Results

Research Methodology

The methodology of the study delineates a systematic investigation the students to utilize AI tools in educational settings. The primary aim is to assess their willingness in integrating AI technology into teaching practices and to identify the key variables crucial for effective lesson planning and delivery. The study adopted quantitative method.

Research Design

The study involved evaluating the readiness of students in a particular institution identified for adopting teacher training programs. Focusing on essentials that form the quality and efficiency of teaching and curriculum development are the major aim of the evaluation. Various factors used in this research included gender, age, educational background, experience, and responsibilities.

Population and Sampling

The study adopted a purposive sampling strategy, and astutely select study respondents based on exact criteria and features within the population. The research involves students from a specific organization that offers programs for teacher training. **125** individuals were considerately selected for the study and various factors such as age, gender, educational history, experience, and job responsibilities considered for this study

Respondents of the Study

The study includes 125 individuals who are all learners from a specific teacher training establishment, carefully chosen for this research. Factors like gender, age, academic background, work history, and responsibilities are among the various distinctive elements considered during the selection phase. These criteria ensure engagement in educational endeavors and the ability to integrate AI technologies into instructional methods.

Analysis and Discussion

Table 1 Reliability Test

Component	Cronbach's Alpha	No.of Statements	KMO test	Significance Level
Faith	0.856	5	0.776	0
Enhancement of Abilities	0.871	5	0.860	0
Firm Faith	0.823	5	0.751	0
The Backing of Institutions	0.867	5	0.885	0
Excitement and openness	0.869	4	0.720	0
Optimistic perspectives	0.853	5	0.845	0
gaining knowledge and self-assurance	0.829	5	0.882	0
Applying AI in the classroom	0.875	22	0.671	0

Faith (The Alpha of Cronbach: 0.856) signifies a strong level of inner harmony among the 5 affirmations concerning faith in incorporating AI into educational settings. This hints that the elements gauging faith are consistently capturing a unified concept. KMO Examination: 0.776 with a significance level of 0, signifies that the sampling is sufficient for factor analysis, and the possibility of the outcome being coincidental is exceedingly low. Enhancement of Abilities (Cronbach's Alpha: 0.871) reveals an exceptionally high internal consistency for the 5 assertions regarding the trust in AI's capacity to amplify teaching skills, indicating that the elements harmoniously evaluate this concept. KMO Analysis: 0.860, indicating outstanding

sufficiency in sampling for analysis, with a significance level of 0 pointing towards robust statistical importance. Firm Faith (Cronbach's Alpha: 0.823) demonstrating commendable internal consistency among the affirmations connected to a firm conviction in the efficacy of AI integration, guaranteeing dependability in assessing this concept. KMO Evaluation: 0.751, signaling good sufficiency in sampling, and a significance level of 0 attests to the credibility of these findings. The Backing of Institutions: (Cronbach's Alpha: 0.867) illustrating a high degree of uniformity in responses regarding institutional endorsement for AI integration, affirming that the elements efficiently gauge this facet. KMO Test: 0.885, proposing very good adequacy of sample size for a trustworthy factor analysis, with a significance level of 0. Excitement and Openness: (Cronbach's Alpha: 0.869) for 4 affirmations denotes an extremely high internal consistency, implying that the enthusiasm and receptiveness towards AI in education are being measured reliably. KMO Analysis: 0.720, which is satisfactory for factor analysis, signaling that the sample is adequate, with a significance level of 0. Optimistic Perspectives (Cronbach's Alpha: 0.853) indicates high dependability in the evaluation of hopeful viewpoints towards AI in education across 5 affirmations. KMO Test: 0.845, displaying very good sufficiency in sampling for the analysis, with a significance level of 0. Gaining Knowledge and Self-Assurance (Cronbach's Alpha: 0.829) mirrors good internal consistency in the affirmations related to the function of AI in acquiring knowledge and self-confidence, guaranteeing reliable measurement. KMO Examination: 0.882, suggesting exceptional sample sufficiency for factor analysis, with a significance level of 0**.** Applying AI in the Classroom (Cronbach's Alpha: 0.875 demonstrating very high dependability across 22 affirmations linked to the utilization of AI in educational settings, suggesting a coherent set of elements. KMO Test: 0.671, which is the lowest among the components but still indicates a moderate sufficiency for sampling, with a significance level of 0 implying statistical importance.

Table 2 Descriptive Statistics

Component	Mean	SD
Faith	3.81	1.44
Enhancement of Abilities	2.23	1.46
Firm Faith	2.59	1.61
The Backing of Institutions	2.87	1.56
excitement and openness	2.98	1.37
optimistic perspectives	3.16	2.87
gaining knowledge and self-assurance	3.17	3.16
Applying AI in the classroom	3.00	1.29

Table 2 displays descriptive data regarding various aspects concerning attitudes and perceptions of integrating AI within educational environments. Belief (3.81, SD = 1.44). This particular score signifies a relatively elevated level of belief among participants regarding the integration of AI in educational settings, accompanied by a moderate dispersion in responses. It indicates an overarching optimism, yet reveals varying degrees of certainty among individuals. Boosting Skills (2.23, SD = 1.46). The lower mean score presented here indicates a more careful or doubtful stance towards AI's role in enhancing teaching skills.

Firm faith with the (M= 2.59, SD = 1.61) that suggests that participants are walking a fine line between being hopeful and being cautious about embracing the possibilities of AI in the field of education. Institutional Support with the (M=2.87, SD = 1.56) reflects a moderate degree of faith in institutional support for incorporating AI. The wide range of replies hints at diverse experiences or expectations of institutional backing among the involved individuals. Enthusiasm and Acceptance (2.98, SD = 1.37). Located near the midpoint point of the range, this mean score suggests a well-adjusted openness towards the integration of AI in the realm of education by the respondents. Positive Outlooks category with (M=3.16, SD = 2.87) indicates a wide spectrum of perspectives on optimistic views towards AI in the field of education. The extensive range of responses might mirror significantly diverse individual experiences or expectations. Acquiring Knowledge and Confidence (3.17, SD = 3.16). Likewise, this score underlines a moderate to high average level of consensus on the notion that AI can aid in acquiring knowledge and confidence. Nevertheless, the exceedingly high standard deviation hints at greatly contrasting opinions, implying a division among respondents in their levels of agreement. Integration in the Classroom (3.00, SD = 1.29). This average score mirrors a moderate consensus regarding the implementation of AI in the classroom, with a relatively lower standard deviation signaling a bit more unity among respondents compared to most other elements.

Table 3 Inter-correlation of variables

S.No	Variables	1	2	3	4	5	6	7	8
1	Faith	1	0.091	0.149	0.221*	-0.007	0.153	0.162	0.281
2	Enhancement of Abilities		1	0.012	0.231*	-0.027	-0.112	0.083	0.048
3	Firm Faith			1	-0.098	0.243*	0.041	0.075	0.321
4	The Backing of Institutions				1	-0.081	0.221*	0.003	0.278
5	excitement and openness					1	0.192	0.238	0.167
6	optimistic perspectives						1	0.254*	0.118
7	gaining knowledge and self-assurance							1	0.139
8	Applying AI in the classroom								1

Table 3 displays Belief and Institutional Support (0.221)** This noteworthy positive correlation implies that individuals with strong faith in AI also tend to perceive solid institutional support for its incorporation. It hints at the idea that trust in AI's educational potential may be somewhat shaped by perceived institutional endorsement. *Skill Enhancement and Institutional Support **(0.231)**** Similar to the first correlation, this positive link suggests that the belief in AI's ability to enhance teaching or skills is tied to the level of support from institutions. It indicates that institutional backing could boost confidence in AI's efficacy for improving abilities. *Strong Belief and Enthusiasm and Openness (0.243)**: This

correlation reveals that individuals with a resolute belief in AI's effectiveness are also more inclined to be enthusiastic and receptive to its incorporation. It underscores a connection between deep-rooted trust in AI's advantages and a favorable stance towards adopting AI technologies. Strong Belief and Classroom Implementation (0.321): The robust positive correlation here indicates that a stronger conviction in AI directly correlates with a higher inclination or endorsement for implementing AI in classroom settings. This suggests that belief serves as the foundation for intentions of practical application. *Positive Outlook and Knowledge Acquisition and Confidence Boost (0.254)**. This notable positive correlation suggests that individuals with a more positive outlook on AI in education also tend to harbor stronger beliefs in AI's role in acquiring knowledge and boosting self-assurance. It indicates a relationship between overall optimism and specific anticipations of AI's benefits for personal growth.

Table 4 Independent sample t-test for 8 variables with the gender

Sex	N	Mean	Std.Deviation	t-value	Significance level
Male	**52**	**11.00**	**0.000**	**1.956**	**0.056**
Female	**73**	**10.98**	**1.423**		

The sample size (N) consisted of 52 male participants and 73 female participants, showcasing a more substantial representation of females. The mean score for males (11.00) whereas females had a slightly lower average of 10.98. These averages suggested that, at first glance, both genders share quite similar perspectives on AI in education. The standard deviation for males was documented as 0.000, which appears inaccurate or a typographical mistake, suggesting no variance in male responses. Conversely, females displayed a standard deviation of 1.423, indicating some diversity in their responses. The t-value of 1.956 implies a disparity in the mean scores of males and females, though not of significant magnitude. The stated significance level (p-value) is 0.056. In the realm of social science research, a p-value below 0.05 holds statistical importance. So, the higher p-value, the difference in means among males and females fails to reach statistical significance at the conventional 5% level.

Table 5 Mean, standard deviation and one way ANOVA results for age differences in AI applying in the classroom

Age	N	Mean	Std. Deviation
25-34	12	11.21	0.231
35-44	30	11.67	0.198
45 and Above	83	12.00	0.221
Total	125	11.27	0.227

ANOVA					
Sources of variations	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig**
Between Groups	0.052	2	0.023	0.529	0.572
Within Groups	3.762	123	0.049		
Total	3.971	125			

The study encompassed a total of 125 individuals. From the above table, 12 participants in the age group of 25-34 30 in the age group of 35-44 and 83 in the age group of 45+ The mean value, reflecting individuals' sentiments towards utilizing AI within educational settings, escalates as individual's age. Precisely, the mean value for (25–34 years old) age group (Mean=11.21), for the middle age category (35–44 years) age group (Mean=11.67), and for the eldest (45 and above) at (Mean=12.00.) The deviations from the mean are minor, ranging from 0.198 to 0.231, indicating a considerable consistency in responses within each age category. The ANOVA table indicates the overall variance (both within and among groups) is quantified by the Sum of Squares. While the sum of squares amounts to 0.052 for inter-group data, it reaches 3.762 for intra-group data, implying that the predominant variability resides within the age categories themselves rather than across them. The total sum of squares divided by the degrees of freedom gives rise to the mean square. The mean square within groups equals 0.049, whereas it is 0.023 between groups. An F-value significance level of 0.529 indicates that the variance among groups is in proportion to the variance within groups. A lower F-value suggests that there is no statistically meaningful difference in variance among age groups compared to the variance within each group. A p-value of 0.572 significantly surpasses the commonly accepted alpha level of 0.05, implying an absence of noticeable shifts in opinions or attitudes towards AI integration in educational settings across diverse age categories.

Table 6 Independent Sample t-test for location differences in AI applying in the classroom

Location	N	Mean	SD	t value	Sig
Rural	42	11.77	0.353	0.522	-0.061
Urban	83	11.56	0.341		

The p-value stands at 0.061, the disparity in mindsets or perspectives regarding the integration of AI in the educational environment between rural and urban participants lacks statistical importance at the 0.05 threshold. Yet, it hovers remarkably near significance, hinting at a potential pattern wherein rural participants may harbor marginally more favorable attitudes or perceptions towards the implementation of AI in academic settings compared to their urban counterparts. Nevertheless, in the absence of statistical weight, we are unable to definitively declare that the noted contrast is not merely a product of chance. It becomes imperative for forthcoming research to shed light on this matter, perhaps delving into additional variables that could impact these perspectives or considering larger sample sizes to more precisely unearth any existing distinctions.

Conclusion

Proponents of the idea that AI may greatly benefit education point to its potential to automate classroom interactions and allow students access to more interesting and applicable learning opportunities as reasons for its growing popularity in this field. The study show that self-reported readiness in a particular teacher training institution plays a crucial role in the integration of AI tools in teaching environments. This investigation intended to evaluate the historical research on AI in educational settings to shed light on its practical oriented

application, identify new developments, and recognize challenges that obstruct its advancement. The use of AI is attractive progressively essential in educational situations. An AI could improve remote learning is through the use of chatbots, which are progressively prevalent in flipped teaching space. (Abbas et al.,; Baskara, Citation2023; Hew et al.,), chatbots that replicate human discussions can boost student engagement and learning outcomes. Diwanji et al. (2018) and Gonda and Chu (2019), chatbots enable students in actively contributing in classroom discussions and receiving personalized response in flipped learning situations. While chatbots advises that students more independence, they should not substitute human interactions; instructors must own expertise in utilizing them.

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