Educators' Awareness and Adoption of Artificial Intelligence for Edupreneurship in University of Ilorin, Kwara State

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Abstract

The rapid advancements in Artificial Intelligence (AI) offer transformative potential for edupreneurship in higher education. However, the extent to which educators at the University of Ilorin are aware of and adopt these technologies remains unclear. This study assessed the educators' awareness and adoption of AI for edupreneurship in University of Ilorin. Using a descriptive survey technique, 100 educators were randomly sampled. Data analysis involved frequency, mean, and t-test. Results indicated that educators had moderate level of awareness (2.8>2.5), low level of adoption (2.2<2.5) and positive attitude towards AI for edupreneurship (3.3>2.5). There were no significant gender differences in the level of awareness and level of adoption. Also, there were no significant differences in the level of awareness and level of adoption based on department. The study concluded that educators' level of awareness and level of adoption of AI for edupreneurship is low, hence, it was recommended that Stakeholders in education should be trained and sensitized on AI's potentials for edupreneurship.

Keywords: Artificial Intelligence, Edupreneurship, Awareness, Adoption.

Introduction

In the 21st century, the integration of technology in education has become increasingly significant, transforming traditional teaching and learning paradigms into more dynamic and

interactive experiences. Among the most promising technological advancements is Artificial Intelligence (AI), which has the potential to revolutionize the educational landscape by offering innovative solutions for edupreneurship (Olatunde-Aiyedun et al., 2024)

Edupreneurship, a portmanteau of "education" and "entrepreneurship", which refers to the application of entrepreneurial principles and practices within the education sector. It encompasses the development of novel educational products, services, and business models that cater to the evolving needs of learners, educators, and educational institutions. AI, with its ability to personalize learning, automate administrative tasks, and generate customized content, can significantly enhance the edupreneurial capabilities of educators. (Davis et al., 2024)

The transformative potential of Artificial Intelligence (AI) has become increasingly evident across diverse fields, with education and entrepreneurship standing out as domains ripe for innovation. AI is revolutionising how educators deliver instruction, design curricula, and assess learning. Tools like adaptive learning platforms, intelligent tutoring systems, and automated grading software empower educators to personalize learning experiences (Chen et al., 2020). Similarly, AI in entrepreneurship accelerates market research, refines customer targeting, and optimizes business operations, paving the way for innovative business models and growth opportunities (Razak et al., 2024).

However, the successful integration of AI in these fields depends largely on the awareness, readiness, and proactive engagement of educators. Educators occupy a dual role in this transformation: they are not only end-users of AI technologies but also facilitators of AI literacy among students and aspiring entrepreneurs (Slattery, 2024). By embedding AI concepts and tools into teaching, educators can bridge the gap between traditional practices and the demands of an AI-driven world. This dual responsibility underscores the importance of their awareness of AI capabilities, ethical considerations, and practical applications in educational and entrepreneurial contexts (Abulibdeh et al., 2024).

Statement of the problem

Despite the potential of AI to transform edupreneurship, there is a lack of awareness among educators regarding the available AI-driven tools and their applications. This lack of awareness can hinder the adoption and implementation of AI, which can result in missed opportunities for innovation and the development of sustainable educational enterprises. Furthermore, to the best

knowledge of the researchers, there is limited research on the level of awareness and adoption among educators regarding AI and its potential applications in edupreneurship in Nigeria, specifically at the University of Ilorin. This presents a gap in knowledge and understanding of the extent to which educators are prepared to utilize AI for entrepreneurial activities within the education sector.

Therefore, the problem that this study addressed and assessed is the level of awareness and adoption among educators regarding AI and its applications for edupreneurship at the University of Ilorin, Kwara State, Nigeria. This study sought to identify the challenges that affect their awareness and assess their willingness to adopt AI in their teaching and entrepreneurial practices, which can inform the development of appropriate interventions and strategies to promote the adoption of AI in education.

Purpose of the Study

The primary purpose of this study was to investigate the level of awareness and adoption among educators regarding artificial intelligence (AI) and its potential applications in edupreneurship at the University of Ilorin, Kwara State, Nigeria. This study:

1. determined the level of awareness of AI and its potential applications for edupreneurship among educators in the University of Ilorin.
2. assessed educators' level of adoption of AI for edupreneurship.
3. determined the attitudes of educators towards the adoption of AI for edupreneurship.
4. examined the challenges face by edcators in using AI for edupreneurship

Overall, the purpose of this study is to contribute to the body of knowledge on the use of AI in education and to inform educational policy and practice in Nigeria and beyond.

Research Questions

The following research questions were raised to guide the study:

1. What is the level of awareness of AI and its potential applications for edupreneurship among educators in the University of Ilorin?
2. What is educators' level of adoption of AI for edupreneurship?
3. What is the attitude of educators toward the adoption of AI for edupreneurship?
4. What are the challenges faced by educators in using AI for edupreneurship?

Research Hypotheses

H0$_1$: There is no significant difference in the level of awareness of artificial intelligence and its potential applications for edupreneurship among educators based on gender.

H0$_2$: There is no significant difference in educators' level of adoption of AI for edupreneurship based on field of study.

H0$_3$: There is no significant difference in the attitude of educators towards the adoption of AI for edupreneurship based on gender.

H0$_4$: There is no significant difference in challenges faced by educators in using AI for edupreneurship based on field of study

Methodology

This study is descriptive research of the survey type. It involved the preparation of a questionnaire and the collection of data to assess educators' awareness and adoption of artificial Intelligence for edupreneurship in the selected University in Kwara state. The population of this study comprised all educators in the selected University in Kwara State. The target population consisted of all departments in the university of Ilorin. Random sampling technique was used to select the 100 educators for the study. The research adopted a researcher-designed questionnaire titled: "Educators' awareness and adoption of artificial intelligence for edupreneurship in a selected university in Kwara State". The instrument was divided into five sections; Section A, B, C, D and E. Section A contained information on the demographic characteristics of the respondents such as gender and department. Section B contained educators' awareness of artificial intelligence in edupreneurship. Section C also contained information on educators' level of adoption of artificial intelligence in edupreneurship. Section D elicited information on the challenges facing educators in the use of artificial intelligence for edupreneurship. Finally, Section E contained the attitude of educators regarding the adoption of AI for edupreneurship. The instrument was validated by three educational technology experts and three computer science experts for both face and content validity respectively. While Cronbach alpha was used to determine the reliability of the instrument with 0.87 coefficient indicating that the instrument if reliable

Results

Table 1: Distribution of Respondents Based on Gender

Gender	Frequency	Percentage
Male	57	57.0
Female	43	43.0
Total	100	100.0

Table 1 indicates that 57 (57.0%) of the respondents were males while 43 (43.0%) of the respondents were female. This implies that there most of the respondents that participated in the study were male.

Table 2: Distribution of Respondents Based on Field of Study

Field of Study	Frequency	Percentage
Sciences	54	54.0
Arts	20	20.0
Social Sciences	26	26.0
Total	100	100.0

Table 2 indicates that 54 (54%) of the respondents were in Educational Technology, 20 (20%) of the respondents were in Computer Science Education while 26 (26%) were in technology education.

Research Question One: What is the level of awareness of artificial intelligence and its potential applications for edupreneurship among educators regarding?

Table 3: Level of awareness of artificial intelligence and its potential applications for edupreneurship among educators

S/N	Items	Highly Aware	Moderately Aware	Not Aware
1.	I am aware of the concept of adaptive learning platforms that tailor educational content to learner needs and progress	14 (14%)	28 (28%)	58 (58%)
2.	I am aware of the intelligent tutoring systems (ITS) that provide personalized instruction and feedback.	10 (10%)	25 (25%)	65 (65%)
3.	I am aware of recommendation engines that suggest personalized learning materials and courses based on learner preferences.	15 (15%)	33 (33%)	52 (52%)

4.	I am aware of chatbots and virtual assistants used in educational contexts to provide support and assistance	64 (64%)	34 (44%)	2 (2%)
5.	I am aware of language processing and speech recognition tools used for reading, writing, and language learning support	90 (90%)	5 (5%)	5 (5%)
6.	I recognize the role of data analysis in edupreneurship.	62 (62%)	38 (38%)	-
7.	I know of AI-generated personalized content creation tools, such as customized quizzes and study guides	64 (64%)	30 (30%)	6 (6%)
8	I am aware of systems that track learners' progress in real-time.	10 (10%)	23 (23%)	67 (67%)
9	I know about educational tools that adjust difficulty levels based on performance.	22 (22%)	67 (67%)	11 (11%)
10	I am aware of adaptive assessment tools that adjust the difficulty of questions based on learner performance	13 (13%)	21 (21%)	66 (66%)
11	I am aware of the concept of adaptive learning platforms that tailor educational content to individual needs and progress	23 (23%)	36 (36%)	41 (41%)
12	I am aware of the intelligent tutoring systems (ITS) that provide personalized instruction and feedback.	32 (32%)	30 (30%)	38 (38%)

Table 3 shows that the level of awareness among educators regarding artificial intelligence (AI) and its potential applications for edupreneurship is low. It was indicated that 58 (58%) of the respondents were not aware of the concept of adaptive learning platforms that tailor educational content to learner needs and progress, 65 (65%) of the respondents were not aware of the intelligent tutoring systems (ITS) that provide personalized instruction and feedback, 67 (67%) revealed that they don't know about educational tools that adjust difficulty levels based on performance, 41 (41%) revealed that aware of the concept of adaptive learning platforms that tailor educational content to learner needs and progress while 38 (38%) of the respondents admitted that they were not aware of the intelligent tutoring systems (ITS) that provide personalized instruction and feedback.

Research Question Two: What is educators' level of adoption of AI for edupreneurship?

Table 4: Educators' level of adoption of AI for edupreneurship

S/N	Items	V O	O	S	N
1.	I use adaptive learning platforms (e.g., Knewton, DreamBox) to enhance personalized learning experience.	14 (14%)	20 (20%)	36 (36%)	30 (30%)
2.	Learning analytics tools help me make informed decisions about my learners	20 (20%)	23 (23%)	30 (30%)	27 (27%)
3.	I interact with AI-driven chatbots or virtual assistants for learning support.	40 (40%)	40 (40%)	10 (10%)	10 (10%)
4.	I use Content recommendation systems (e.g., Coursera, edX) to suggest courses or materials that match learners interests and needs.	34 (34%)	30 (30%)	22 (22%)	14 (14%)
5.	AI-enhanced language learning tools (e.g., Rosetta Stone, Babbel) provide personalized feedback on learners' language skills.	30 (30%)	23 (23%)	30 (30%)	17 (17%)
6.	AI-driven assistive technologies help me access and understand course content more effectively.	49 (49%)	30 (30%)	11 (11%)	-
7.	Peer and social learning platforms (e.g., Edmodo, Schoology) with AI recommendations enhance students' collaborative learning experience.	33 (33%)	20 (20%)	44 (44%)	3 (3%)
8.	Peer and social learning platforms (e.g., Edmodo, Schoology) with AI recommendations enhance my collaborative learning experience.	50 (50%)	40 (40%)	5 (5%)	5 (5%)
9.	I use Adaptive testing platforms (e.g., Smart Sparrow) with AI adjustments to provide a fair assessment of learner knowledge.	40 (40%)	30 (30%)	25 (25%)	5 (5%)
10.	How often do you receive timely and constructive feedback on your academic or professional work through digital means?	15 15%)	30 (30%)	40 (40%)	15 (15%)

Table 4 shows that the educators' level of adoption of AI for edupreneurship is moderate as 30 (30%) of the respondents admitted to never use adaptive learning platforms (e.g., Knewton, DreamBox) to enhance personalized learning experience, 27 (27%) never adopt Learning analytics tools that help make informed decisions about my learners, 17 (17%) never utilize AI-enhanced language learning tools (e.g., Rosetta Stone, Babbel) provide personalized feedback on students' language skills.

Research Question Three: What is the attitude of educators toward the adoption of AI for edupreneurship?

Table 5: Attitude of educators toward the adoption of AI for edupreneurship

S/N	Items	V O	O	S	N
1.	I actively incorporate technology into my teaching.	24 (24%)	10 (10%)	29 (29%)	37 (37%)
2.	I frequently use digital tools and resources for academic purposes.	24 (24%)	19 (19%)	37 (37%)	20 (20%)
3.	I rely on digital devices for note-taking, research, and studying.	40 (40%)	40 (40%)	10 (10%)	10 (10%)
4.	I find online textbooks and e-resources convenient for my students.	34 (34%)	30 (30%)	22 (22%)	14 (14%)
5.	Multimedia content (Videos, animations, etc.) often aids students understanding of course material.	30 (30%)	23 (23%)	30 (30%)	17 (17%)
6.	I frequently engage in online discussions and collaborative projects with peers.	49 (49%)	30 (30%)	11 (11%)	-
7.	I often take online quizzes or exams as part of my courses assessment.	33 (33%)	20 (20%)	44 (44%)	3 (3%)
8.	I receive prompt and valuable feedback on students' academic performance through digital means.	50 (50%)	40 (40%)	5 (5%)	5 (5%)
9.	Digital learning tools adapt to my students' strengths and weaknesses, helping them learn effectively.	40 (40%)	30 (30%)	25 (25%)	5 (5%)
10.	My educational institution provides training on effectively using technology for teaching.	15 15%)	30 (30%)	40 (40%)	15 (15%)

Table 5 shows that the attitude of educators toward the adoption of AI for edupreneurship was moderate. 29 (29%) of the respondents never actively incorporate technology into my teaching, 24 (24%) frequently use digital tools and resources for academic purposes, 40 (40%) rely on digital devices for note-taking, research, and studying, 30 (30%) find online textbooks and e-resources convenient for my students and 40 (40%) indicated that Digital learning tools adapt to students' strengths and weaknesses, helping them learn effectively.

Research Question Four: What are the challenges faced by educators in using AI for edupreneurship?

Table 6: Challenges of using AI for edupreneurship

S/N	Item	Mean	Rank
1.	I Lack of access to AI technologies or tools hinders the implementation of edupreneurship	3.05	1st
2.	I have Insufficient training or knowledge on how to effectively utilize AI technologies for edupreneurship	3.00	2nd
3.	I find it difficult to teach without human verbal interaction.	2.96	3rd
5.	I feel overwhelmed by the amount of data generated by Al edupreneurship tools	2.89	4th
4.	I believe that AI technologies may lead to a loss of the human element in edupreneurship	2.80	5th

Table 6 challenges of using AI for edupreneurship and as shown on the table, items 1, 2 and 3 tagged 'I Lack of access to AI technologies or tools hinders the implementation of edupreneurship, I have Insufficient training or knowledge on how to effectively utilize AI technologies for edupreneurship and I find it difficult to teach without human verbal interaction with mean 3.05, 3.00 and 2.96 ranked 1st, 2nd, and 3rd . Also, item 4, tagged 'I believe that AI technologies may lead to a loss of the human element in edupreneurship' with mean 2.80 ranked 5th. Since all the items possess mean above the 2.50 benchmark, it can be concluded that all the items and results represent the challenges of using AI for edupreneurship.

Research Hypotheses

H_{01}: There is no significant difference in the level of awareness of artificial intelligence and its potential applications for edupreneurship among educators based on gender.

Table 7: t-test analysis of the difference in the level of awareness of artificial intelligence and its potential applications for edupreneurship among educators based on gender.

Variable	N	Mean	Std. Deviation	t	df	Sig	Remark
Male	57	64.38	5.62	.301	98	.330	Not rejected
Female	43	59.30	3.10				

Table 7 shows the t-value of .301 and a p-value of .330 which is greater than the 0.05 level of significance. This provide indications that the null hypothesis is not rejected, hence, there was

no significant difference in the level of awareness among educators regarding artificial intelligence

(AI) and its potential applications for edupreneurship based on gender

H02: There is no significant difference in educators' level of adoption of AI for edupreneurship

   based on field of study

Table 8: ANOVA Analysis of the difference in educators' level of adoption of AI for edupreneurship based on field of study.

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	80.399	3	26.799	.872	.009
Within Groups	2947.154	96	30.699		
Total	3027.553	99			

Table 8 shows that the calculated f-value is .872 and the p-value of .009 which is greater

than the .005 level of significance. This provide indications that there was no significant difference

in educators' level of adoption of AI for edupreneurship based on field of study.

H03: There is no significant difference in the attitude of educators towards the adoption of AI for

edupreneurship based on gender.

Table 9: t-test analysis of the difference in the attitude of educators towards the adoption of AI for edupreneurship based on gender

Variable	N	Mean	Std. Deviation	T	Df	Sig	Remark
Male	57	60.55	5.45				Not
Female	43	58.77	3.33	.319	98	.301	rejected

Table 9 shows the t-value of .319 and a p-value of .301 which is greater than the 0.05 level

of significance. This provide indications that the null hypothesis is not rejected, hence, there was

no significant difference in the attitude of educators towards the adoption of AI for edupreneurship

based on gender

H04: There is no significant difference in the challenges faced by educators in using AI for

   edupreneurship based on field of study

Table 10: ANOVA Analysis of the difference in the challenges faced by educators in using AI for edupreneurship based on field of study

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	78.466	3	26.155	.795	.010
Within Groups	3155.225	96	32.866		
Total	3234.019	99			

Table 10 shows that the calculated f-value is .795 and the p-value of .010 which is greater than the .005 level of significance. This provide indications that there was no significant the difference in the challenges faced by educators in using AI for edupreneurship based on field of study

Discussion of Findings

The findings indicate a low level of awareness among educators regarding artificial intelligence (AI) and its potential applications for edupreneurship. A significant proportion of respondents are not aware of key concepts related to AI-driven personalized learning, including adaptive learning platforms and intelligent tutoring systems. This low level of awareness suggests that educators may not be fully informed about the benefits of AI in edupreneurship and may not be able to make informed choices regarding its adoption in their learning.

The findings also reveal a moderate level of adoption of AI for edupreneurship among educators. A noteworthy percentage of respondents have not yet adopted AI-enhanced tools for edupreneurship, including adaptive learning platforms, learning analytics tools, and AI-enhanced language learning tools. The moderate level of adoption may indicate that while educators are open to these technologies, they may not have fully integrated them into their teaching routines.

Also, the findings reveal that the attitude of educators toward AI for edupreneurship is moderate. While some educators actively incorporate technology into their teaching and find digital tools beneficial, others do not actively use technology for edupreneurship purposes.

The results indicate mixed attitudes toward AI-driven personalized learning, with room for improvement in fostering more positive attitudes.

The findings highlight significant challenges in using AI for edupreneurship, with the top three challenges being the lack of access to AI technologies or tools, insufficient training or knowledge, and the difficulty of teaching without human verbal interaction.

The findings indicated that there was no significant difference in the level of awareness among educators regarding artificial intelligence (AI) and its potential applications for edupreneurship based on gender as the p-value $.330 > 0.05$ level of significance. Also, there was no significant difference in educators' level of adoption of AI for edupreneurship based on field of study as the p-value $.009 > 0.05$ level of significance.

In the same vein, there was no significant difference in the attitude of educators towards the adoption of AI for edupreneurship based on gender as p-value $.301 > 0.05$ level of significance.

Also, there was no significant difference in the challenges faced by educators in using AI for edupreneurship based on field of study as the p-value .010 > 0.05 level of significance.

Conclusion

The study found that educators at the University of Ilorin have a moderate level of awareness and a low level of adoption of AI for edupreneurship. While their attitude towards the integration of AI is positive, they face various challenges, such as limited access to AI technologies and insufficient training, which hinder the widespread adoption of these technologies in their entrepreneurial activities within the education sector.

Recommendation

To address these gaps, it is recommended that the university should provide more training and sensitization programs to enhance educators' knowledge and skills in utilizing AI-driven solutions for edupreneurship. Additionally, the university should explore ways to improve access to AI technologies and resources, enabling educators to fully leverage the benefits of these advancements in their entrepreneurial endeavors.

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