



ENHANCING BUSINESS EDUCATION PROGRAMME IN TERTIARY INSTITUTIONS IN EBONYI STATE FOR EFFECTIVE SKILL ACQUISITION THROUGH ARTIFICIAL INTELLIGENCE

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Abstract

The study ascertained the ways business education programme in tertiary institutions in Ebonyi State could be enhanced for effective skill acquisition through Artificial Intelligence. These institutions are Alex Ekwueme Federal University, Ndufu-Alike; Ebonyi State University, Abakaliki, and College of Education, Ikwo. Three purposes were raised from which three research questions and two null hypotheses tested at 0.05 level of significance were formulated to guide the study. In carrying out this investigation, a census survey design was used. The population comprised 45 business education lecturers in the three tertiary institutions in Ebonyi State, Nigeria. This population represents the entire target population for this reason, a census was conducted. A four-point scale structured questionnaire entitled „Enhancing Business Education through Artificial Intelligence (EBEDA)“ was used to collect data. The reliability coefficient of the instrument was determined to be 0.85 using test-retest method. The data collected were analysed using mean statistics and standard deviation to answer the research questions and t-test for the hypotheses. The result showed that business educators in tertiary institutions in Ebonyi State agreed that business education as a programme could leverage on the provision of Artificial Intelligence for effective skill acquisition. AI tools enhance students’ engagement and motivation; help to customize learning paths to cater for individual needs; give real-time feedback for targeted improvement and give access to a range of educational resources tailored to students’ interest and these are all basic to effective skill acquisition. Based on the findings of the study, it was concluded that for business education programme to inculcate into its recipients „life skill“ for economic success as targeted, it is vital that Artificial intelligence tools be engaged in the teaching and learning processes. Therefore, the study recommended among others, that business educators should open up to this paradigm shift in teaching and learning and embrace the personalized learning inherent in Artificial Intelligence tools for educational improvement.

Keywords: Artificial Intelligence, Business Education, Effective, Enhancement, Skill Acquisition,

Introduction

In a rapid improving setting of business education, the integration of artificial Intelligence (AI) presents promising opportunities for its goal achievement. It is amazing to note the potential transformative impact AI can have on basic education, skill development and business innovation which are all components of business education. Business education, being a skill-based programme shaped to offer opportunity to our teeming youths to acquire practical and applied skills can leverage on the tools, experiences, and activities offered in AI to achieve effective skill acquisition. Enhancing business education programme with digital tools is essential considering the view of Salami and Kehinde (2023) that skill acquisition is very paramount for effective job performance. It also implies that for a business education student to be relevant in the



contemporary society he must be empowered with relevant skills to operate in the business world or teaching profession.

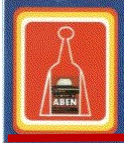
Business education as a programme of study is relatively new in Nigeria. In the opinion of Ibrahim (2022), it prepares individuals to be productive in the economy as employees or self-employed persons by equipping them with practical skills required to enter into the labour force and be productive in the economy. It is an entrepreneurship-based programme which equips students with relevant skills, knowledge and attitude required in the business world. According to Udo in Ariwodo and Emeasoba (2023), business education is a comprehensive activity-based occupational education programme that is concerned with the acquisition of practical skills, work habits, competences, and knowledge, requisite to succeed in any chosen business occupation. Edokpolor and Egberi in Ariwodo and Emeasoba (2023) postulated that the actual goals of business education are to: prepare students for specific career in office occupations; equip students with the requisite skills for job creation and entrepreneurship and expose students with knowledge about business, including a good blend of computer technology, which incorporates information and communication technology. Business education offers recipients who wish to pursue a career the opportunity to develop skills, abilities and understanding that will enable them to enter, perform and progress in teaching and business occupations.

The course content of business education if effectively implemented should enable its recipients acquire managerial, communication, human relations, technological, manipulative and technical skills. Skill acquisition is a process through which one gains mastery of a particular vocation or the basics of a task with the sole purpose of rendering services for financial freedom (Ariwodo&Emeasoba, 2023). In the views of Amesi (2017), it is a deliberate, systematic and sustainable effort which leads to capacity that makes a person to effectively and efficiently carry out complex activities or job functions involving cognitive, technical, and interpersonal dispositions. Skill is acquired through learning and constant practice.

Effective implementation of the curricular of business education as a skill-based programme cannot be achieved without correct teaching staff, appropriate instructional methods/strategies, application of right tools and correct environment. Therefore, the digital era calls for incorporation of new technologies as they emerge in order to inculcate new skills and upgrade existing ones. This is because new technologies give people opportunity to access, manage, integrate and evaluate huge amount of information real-time and accurately. One of such devices that advancement in technology has offered in the recent times is the Artificial Intelligence software/tools.

The global e-learning platform has undergone a profound transformation, marking a departure from traditional methods to embrace innovative approaches. At the heart of this educational revolution lies the concept of personalized learning, a paradigm shifts that tailor educational experiences to the unique needs of individual learners. This departure from the one-size-fits-all model is driven by recognition that students possess distinct learning styles, paces, and preferences.

Facilitating this transformative shift is the integration of Artificial Intelligence (AI) into traditional educational frameworks. AI, with its capacity for data processing and pattern recognition, emerges as a powerful catalyst in creating adaptive and personalized learning experiences. It revolutionizes how educators assess, engage, and respond to the diverse needs of students. Integrating AI into the learning process of business education will cater for individual student needs. In the opinion of Pichai (2019) AI offers personalized learning which recognizes and adapts to the diverse ways in which students learn, thereby fostering increased engagement, deeper understanding, and more meaningful educational outcomes. As students navigate their

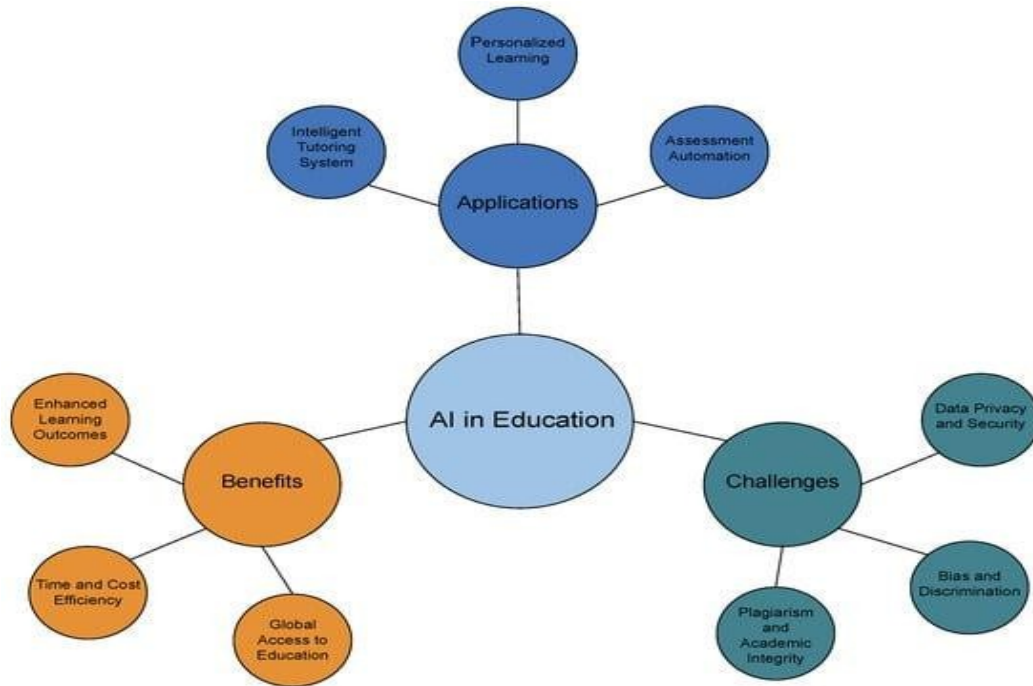
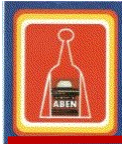


educational journeys, tailored experiences enhance their strengths, address their weaknesses, and empower them to thrive in a personalized learning environment thereby making for effective skill acquisition.

Artificial Intelligence or AI, according to Fishel (2023) refers to the simulation of human intelligence by software-coded heuristics. Artificial Intelligence is a rapidly evolving technology that tries to simulate human intelligence using machines, enabling them to perform a wide range of tasks, from simple to complex. The ideal characteristic of artificial intelligence is its ability to rationalize and take actions that have the best chance of achieving a specific goal. The goals of artificial intelligence include computer-enhanced learning, reasoning, and perception.

AI is continuously evolving to benefit many different industries. Its applications are endless and with varying levels of sophistication. It is being tested and used in the healthcare industry for suggesting drug dosages, identifying treatments, and for aiding in surgical procedures in the operating room. In the view of Kamalov, Calonge and Gurrib (2023) artificial intelligence, in the educational context, refers to the application of machine learning algorithms and data analytics to enhance various aspects of the learning process. It encompasses a range of applications, from intelligent tutoring systems and personalized learning platforms to smart content creation and automated grading systems. AI automates tasks and acts as a catalyst for personalized and adaptive learning experiences. Machine learning algorithms in AI analyse vast datasets to identify patterns in student behaviour, learning styles, and comprehension levels.

Prasad (2023) avers that AI addresses the challenges inherent to lifelong learning and skill development by delivering a dynamic and customizable educational framework. It can play a pivotal role particularly in the context of the rapidly evolving job market and the need for continuous up-skilling. AI-driven learning platforms can help individuals identify skill gaps, access relevant learning resources, and track their progress. One of the key aspects of AI is the potential to harness massive datasets to identify emerging trends, skill gaps, and workforce requirements. The extracted information can be used to design and deliver education and training programs that align with the evolving demands of the global economy. By intelligently identifying and addressing individual skill gaps, AI systems can facilitate efficient up-skilling and re-skilling, enabling individuals to adapt more effectively to shifting job markets and technological advancements (Prasad, 2020). Applications of AI in education are broadly in the areas of intelligent tutoring; personalized learning; and assessment automation. This application has several benefits and challenges as well.



Multifaceted impact of AI in education.

Source: <https://www.mdpi.com/2071-1050/15/16/12451>

However, the invaluable opportunity offered by AI will enable business educators especially to modify their teaching methods; implementing strategies that will address the unique needs of each student in skill acquisition. AI facilitates early identification of learning difficulties and provides timely interventions, ensuring a proactive approach to educational support (Zia, 2023).

The facilities offered by AI are timely interventions in solidifying skill acquisition inherent in business education in order that learners will build capacity for effectiveness and efficiency in carrying out jobs related to the discipline. Udo (2015) asserts that effective acquisition of skills will enable recipients of business education to make positive impact in the world of work in order to boost sustainable national development in Nigeria. Emeasoba, Egbo and Akudolu, (2023) also agreed that effective skill acquisition will aid in repositioning of the Nigerian economy. Therefore, business educators should leverage on the innovations of AI for effective skill acquisition. AI saves time, sparks ideas and offer new angles to skill acquisition (Rebelo, 2024).

Statement of the Problem

Effective skill acquisition is achieved when the learning and practice makes one perform better, meet task-target, and able to contribute to societal growth and development. This however is a far cry from the reality in business education considering that its products are among the unemployed teeming youths causing nuisance in the society, bereft of skills and abilities to be employable or self-employed. This persisting problem could be as a result of students' disengagement. Students' disengagement and disinterest affects learning negatively. To enhance students' learning which is expected to improve skills- acquisition inherent in business education, AI-powered personalized learning as a student-centric approach that



addresses the issue of student disengagement in education could be involved. By tailoring learning experiences to individual needs, interests, and pace, AI offers adaptive content, interactive experiences, and data analysis to optimize learning outcomes.

Purpose of the Study

The major purpose of the study was to find out ways business education could be enhanced for effective skill acquisition through the instrument of Artificial intelligence. Specifically, the paper ascertained:

1. Ways AI-powered tools could enhance business education for effective skill acquisition.
2. Ways personalized learning offered in AI could enhance business education for effective skill acquisition.
3. How analysis of vast amount of data in AI could enhance business education for effective skill acquisition.

Research Questions

The following research questions guided the study:

1. In what ways could AI-powered tools enhance business education for effective skill acquisition?
2. In what ways could personalized learning offered in AI enhance business education for effective skill acquisition?
3. How could analysis of data in AI enhance business education for effective skill acquisition?

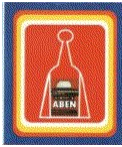
Hypotheses

These null hypotheses were tested at 0.05 level of significance:

- Ho₁: Male and female business educators do not differ significantly in their mean responses on the ways AI-powered tools facilitate experiential learning for effective skill acquisition in business education.
- Ho₂: There is no significant difference in the mean responses of business educators on the enhancement of business education for effective skill acquisition through Artificial Intelligence tools

Method

The study adopted census survey research design. This design was considered appropriate because the study sought the opinions of business education lecturers on the ways business education could be enhanced for effective skill acquisition through Artificial Intelligence. The population of the study consisted of 45 lecturers in business education departments of tertiary institutions in Ebonyi State that are offering business education. These institutions are Alex Ekwueme Federal University, Ndufu-Alike, Ebonyi State University, Abakaliki, and College of Education, Ikwo. A census was conducted because, the small population size of 45 represents the entire target population. The researcher developed a four-point scale structured questionnaire entitled ‘_Enhancing Business Education through Artificial Intelligence (EBEDAI)’ for collection of data. The response categories were strongly Agreed, Agreed, Disagreed and Strongly Disagreed. Part ‘_A’ contained information on demographic data while part ‘_B’ contained information relating to research questions. The questionnaire was subjected to face and contents validity by a business educator and two lecturers in Computer Engineering and Computer Science of Akanulbiam Federal Polytechnic Unwana. The questionnaire had an overall reliability index of 0.86 using Test-retest reliability method and this was established through a Pearson Product-Moment Correlation Coefficient (Pearson’s r).



Forty-five copies of the questionnaire were administered through personal contact by the researcher with the help of three research assistants. The 45 copies were returned and used for the analysis. Data collected were analysed using mean, standard deviation and t-test statistics. The analyses were done with statistical package for social sciences (SPSS). Mean and standard deviation were used to answer the research questions. A cut-off of 2.5 was used as a base line score for accepting or rejecting of each of the items of the questionnaire. Statistical t-test was used to test the null hypothesis. The null hypothesis of no significant difference was rejected where the calculated t-value was equal to or greater than the table t-test value for a given degree of freedom at P=0.05 level of significance. The null hypothesis of no significant difference was upheld where the calculated t-value was less than the table t-value of 0.05 level of significance.

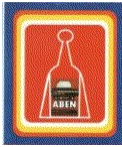
Results

Research Question 1

In what ways could AI-powered tools enhance business education for effective skill acquisition?

Table 1: Mean responses and standard deviation of Business Educators on the ways AI tools enhance business education for effective skill acquisition. N=45

S/N	Variables		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
1	Use of Natural Language Processing(NLP) enhances business education for principles of specific skill	Equal variances assumed	0.008	0.931	0.379	42	0.707	0.09091	0.24011	-0.39366	.57548
		Equal variances not assumed			0.379	41.930	0.707	0.09091	0.24011	-0.39368	.57550
2	Student modelling tools enhances business education by tracking students' skill acquisition progress	Equal variances assumed	0.176	0.677	-0.251	42	0.803	-0.04545	0.18100	-0.41074	.31983
		Equal variances not assumed			-0.251	41.936	0.803	-0.04545	0.18100	-0.41075	.31984
3	Meaningful dialogue in NLP enhances business education for effective acquisition of communication skills	Equal variances assumed	0.339	0.564	0.431	43	0.669	0.10277	0.23860	-0.37841	.58394
		Equal variances not assumed			0.432	42.320	0.668	0.10277	0.23767	-0.37676	.58229
4	Teacher-student collaboration tools offered in AI enhance business education for effective skill acquisition by providing real time feedback	Equal variances assumed	0.417	0.522	1.237	42	0.223	0.27122	0.21928	-0.17131	.71376
		Equal variances not assumed			1.235	41.315	0.224	0.27122	0.21965	-0.17227	.71471
5	Intelligence Tutoring System (ITS) enhances business education by customizing teaching methods for effective manipulative skill	Equal variances assumed	2.094	0.155	0.955	43	0.345	0.19368	0.20282	-0.21535	.60270
		Equal variances not assumed			0.964	37.287	0.341	0.19368	0.20083	-0.21314	.60049

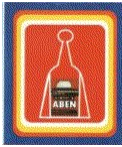


	acquisition	assumed									
6	Voice-activated Technology in AI enhances business education for effective skill acquisition by improving teacher-student collaboration.	Equal variances assumed	0.391	0.535	0.414	42	0.681	0.11180	0.26992	-0.43292	.65652
		Equal variances not assumed			0.412	39.924	0.683	0.11180	0.27163	-0.43722	.66082
7	Student modelling tool tracks students' behavior	Equal variances assumed	0.004	0.951	-1.315	42	0.196	-0.30849	0.23466	-0.78205	.16507
		Equal variances not assumed			-1.310	40.941	0.197	-0.30849	0.23540	-0.78391	.16693
8	Virtual tutors, text to image generation, video generation platforms, and others can be used to supplement traditional business education techniques to align with evolving demands of the global economy.	Equal variances assumed	0.549	0.463	1.080	43	0.286	0.19170	0.17749	-0.16624	.54963
		Equal variances not assumed			1.087	40.721	0.283	0.19170	0.17636	-0.16454	.54794
9	AI tools handle the limitations of traditional one-size-fits-all approaches to ICT skills acquisition in business education.	Equal variances assumed	0.998	0.323	-0.882	43	0.383	-0.21146	0.23982	-0.69510	.27218
		Equal variances not assumed			-0.875	37.066	0.387	-0.21146	0.24178	-0.70132	.27840
10	AI tools offer automated grading system.	Equal variances assumed	0.529	0.471	-0.059	42	0.953	-0.01449	0.24593	-0.51079	.48181
		Equal variances not assumed			-0.059	41.603	0.953	-0.01449	0.24377	-0.50658	.47759

Source: Authors' computation using SPSS version 25, 2024

Data in Table 1 above revealed that items 1, 2, 3, 4, 6, and 7 has a sig value .500 or 50% and above which shows how well artificial intelligence tools contribute to effective skill acquisition. The variables with less than .500 or 50% shows that the variables under review contribute less or nothing and may not be required, like items 5, 8, 9 and 10. Therefore, Intelligence tutoring system (ITS) enhances business education by customizing teaching methods for effective manipulative skill acquisition with sig. value of .155 or 15%, Ai tools handle the limitations of traditional one-size- fit-all approaches to ICT skills acquisition in business education with sig. value of .32 or 32%,Virtual tutors, text to image generation, video generation platforms, and others can be used to supplement traditional business education techniques to align with evolving demands of the global economy with .46 or 46% and Ai tools offer automated grading system with .47 or 47%,shows how well the independent variables explain the dependent variables.

Research Question 2



In what ways could personalized learning offered in AI enhance business education for effective skill acquisition?

Table 2: Mean responses and standard deviation on the ways personalized learning offered in AI could enhance business education for effective skill acquisition. N=45

S/N	Variables		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
1	AI driven learning platforms help individuals identify skill gap	Equal variances assumed	0.101	0.753	0.821	43	0.416	0.14822	0.18050	-0.21579	0.51223
		Equal variances not assumed			0.827	40.270	0.413	0.14822	0.17926	-0.21400	0.51044
2	Personalized learning facilitates up-skilling and re-skilling	Equal variances assumed	0.183	0.671	-1.279	42	0.208	-0.22727	0.17771	-0.58591	0.13137
		Equal variances not assumed			-1.279	39.126	0.208	-0.22727	0.17771	-0.58670	0.13215
3	Personalized learning facilitate re-skilling	Equal variances assumed	0.293	0.592	-0.832	41	0.410	-0.21739	0.26115	-0.74480	0.31002
		Equal variances not assumed			-0.824	37.943	0.415	-0.21739	0.26382	-0.75149	0.31671
4	Personalized learning addresses unique needs of each student in skill acquisition.	Equal variances assumed	1.462	0.234	-1.313	40	0.197	-0.23810	0.18133	-0.60457	0.12838
		Equal variances not assumed			-1.313	37.555	0.197	-0.23810	0.18133	-0.60532	0.12913
5	Personalized learning fosters increased engagement of students for effective skill acquisition	Equal variances assumed	0.018	0.895	-0.581	43	0.564	-0.11462	0.19734	-0.51261	0.28336
		Equal variances not assumed			-0.581	42.949	0.564	-0.11462	0.19729	-0.51252	0.28327
6	It addresses students' weaknesses	Equal variances assumed	2.370	0.132	0.288	39	0.775	0.06459	0.22459	-0.38968	0.51886
		Equal variances not assumed			0.293	38.521	0.771	0.06459	0.22029	-0.38115	0.51034
7	Personalized learning offers tailored experiences which enhance students'	Equal variances assumed	1.545	0.221	-1.651	43	0.106	-0.38538	0.23336	-0.85599	0.08524
		Equal variances not assumed			-1.635	35.150	0.111	-0.38538	0.23566	-0.86371	0.09296



	strengths and address their weaknesses										
8	As an adaptive and student-centric pedagogical approach, personalized learning enhances business education for effective managerial skills acquisition	Equal variances assumed	0.304	0.584	-0.690	43	0.494	-0.16403	0.23780	-0.64360	0.31554
		Equal variances not assumed			-0.687	40.881	0.496	-0.16403	0.23879	-0.64632	0.31826
9	Personalized learning allows students to progress at a rate that aligns with their understanding.	Equal variances assumed	1.030	0.316	0.056	43	0.956	0.01383	0.24760	-0.48550	0.51317
		Equal variances not assumed			0.056	38.738	0.956	0.01383	0.24923	-0.49039	0.51806
10	By addressing individual strengths, business educators create an environment that nurtures a student's passion and aptitude through personalized learning	Equal variances assumed	0.011	0.917	0.090	43	0.929	0.01779	0.19717	-0.37984	0.41541
		Equal variances not assumed			0.090	42.845	0.929	0.01779	0.19723	-0.38001	0.41559
11	Customization of learning in personalized learning AI enhances business education for effective skill acquisition by cultivating love for learning in students	Equal variances assumed	0.399	0.531	-0.941	43	0.352	-0.20751	0.22053	-0.65226	0.23724
		Equal variances not assumed			-0.944	42.629	0.351	-0.20751	0.21984	-0.65097	0.23596
12	AI give access to a wide range of educational resources tailored to student interests.	Equal variances assumed	2.174	0.148	0.513	43	0.611	0.10474	0.20433	-0.30734	0.51682
		Equal variances not assumed			0.516	41.196	0.609	0.10474	0.20316	-0.30549	0.51497



Source: Authors' computation using SPSS version 25, 2024

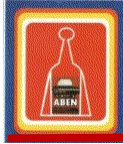
Data in Table 2 above revealed that items 4,6,7,9, and 12 are below the sig value of .500 or 50% and therefore are not necessarily required to enhance business education for effective skill acquisition While items 1, 2, 3, 5, 8, 10 and 11 with sig value of .500 or 50% and above are required and highly required to enhance business education for effective skill acquisition.

Research Question 3

How could analysis of data in AI enhance business education for effective skill acquisition?

Table 3: Mean responses and standard deviation on the ways data analysis in AI enhance business education for effective skill acquisition. N=45

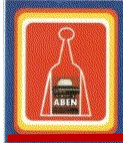
S/N	Variables		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
1	AI's capacity for data processing enhances business education by revolutionizing the way business educators assess students,	Equal variances assumed	4.087	0.049	-0.139	43	0.890	-0.02964	0.21326	- 0.40044 0.45973
		Equal variances not assumed			-0.141	34.094	0.889	-0.02964	0.21061	- 0.39833 0.45761
2	Unlike the traditional approach, AI accommodate the diverse needs of students through its vast data processing capacity.	Equal variances assumed	0.783	0.381	0.910	43	0.368	0.19368	0.21277	- 0.62277 0.23542
		Equal variances not assumed			0.916	40.389	0.365	0.19368	0.21134	- 0.62067 0.23332
3	Business education platforms leverages AI to comprehend students' individual learning style.	Equal variances assumed	0.000	1.000	0.592	42	0.557	0.09091	0.15366	- 0.40102 0.21920
		Equal variances not assumed			0.592	42.000	0.557	0.09091	0.15366	- 0.40102 0.21920
4	It facilitates students' collaboration by promoting teamwork/team effectiveness.	Equal variances assumed	0.108	0.744	0.289	41	0.774	0.06494	0.22466	- 0.51865 0.38878
		Equal variances not assumed			0.290	40.538	0.773	0.06494	0.22384	- 0.51714 0.38727



5	It gives room to periodic personalized assessments.	Equal variances assumed	3.919	0.054	1.634	43	0.110	0.33202	0.20318	-	0.74177
										0.07774	
		Equal variances not assumed			1.652	36.25	0.107	0.33202	0.20101	-	0.73959
						2				0.07556	
6	It facilitates immediate feedback.	Equal variances assumed	6.019	0.018	1.837	43	0.073	0.33399	0.18185	-	0.70074
										0.03275	
		Equal variances not assumed			1.853	38.51	0.072	0.33399	0.18028	-	0.69878
						9				0.03080	
7	It helps in progress tracking.	Equal variances assumed	0.135	0.715	0.398	42	0.693	0.09091	0.22835	-	0.55174
										0.36992	
		Equal variances not assumed			0.398	41.84	0.693	0.09091	0.22835	-	0.55179
						7				0.36997	
8	It enables adaptive learning.	Equal variances assumed	0.162	0.689	0.082	43	0.935	0.01779	0.21714	-	0.45568
										0.42011	
		Equal variances not assumed			0.082	42.43	0.935	0.01779	0.21635	-	0.45426
						9				0.41869	
9	It harnesses massive datasets to identify emerging trends.	Equal variances assumed	0.072	0.790	0.266	43	0.791	0.05929	0.22261	-	0.50822
										0.38965	
		Equal variances not assumed			0.266	41.91	0.792	0.05929	0.22320	-	0.50974
						5				0.39117	
10	It supplies data that help to provide timely intervention to students' skill acquisition difficulty.	Equal variances assumed	0.254	0.617	-1.574	42	0.123	-0.33954	0.21575	-	0.09587
										0.77496	
		Equal variances not assumed			-1.550	35.753	0.130	-0.33954	0.21910	-	0.10491
										0.78400	
11	It ensures a proactive approach to skill acquisition support.	Equal variances assumed	1.133	0.293	0.467	43	0.643	0.09881	0.21169	-	0.52573
										0.32810	
		Equal variances not assumed			0.469	41.910	0.642	0.09881	0.21070	-	0.52406
										0.32643	

Source: Authors' computation using SPSS version 25, 2024

Data in Table 3 above revealed that items 1, 2, 3, 5, 6, and 11 are below the sig value of .500 or 50% and therefore are not necessarily required to enhance business education for effective skill acquisition. While items 4, 7, 8, 9, and 10 with sig value of .500 or 50% and above are required and highly required to enhance business education for effective skill acquisition.



Hypotheses

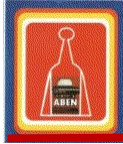
Ho₁: Male and female business educators do not differ significantly in their mean responses on the ways AI-powered tools facilitate experiential learning for effective skill acquisition in business education.

Table 4: Summary of t-test analysis of the mean responses of male and female business educators on the ways AI-powered tools facilitate experiential learning for effective skill acquisition in business education.

S/N	Gender of respondents	N	Mean	Std.	Std. Error	
				Deviation	Mean	
1	Use of Natural Language Processing(NPL) enhances business education for principles of specific skill	Male	22	3.3182	.77989	.16627
	Female	22	3.2273	.81251	.17323	
2	Student modeling tools enhances business education by tracking students' skill acquisition progress	Male	22	3.1818	.58849	.12547
	Female	22	3.2273	.61193	.13046	
3	Meaningful dialogue in NLP enhances business education for effective acquisition of communication skills	Male	22	3.3636	.72673	.15494
	Female	23	3.2609	.86431	.18022	
4	Teacher-student collaboration tools offered in AI enhance business education for effective skill acquisition by providing real time feedback	Male	21	3.6190	.74001	.16148
	Female	23	3.3478	.71406	.14889	
5	Intelligence Tutoring System (ITS) enhances business education by customizing teaching methods for effective manipulative skill acquisition	Male	22	3.4545	.50965	.10866
	Female	23	3.2609	.81002	.16890	
6	Voice-activated Technology in AI enhances business education for effective skill acquisition by improving teacher- student collaboration.	Male	21	3.2857	.95618	.20866
	Female	23	3.1739	.83406	.17391	
7	Student modeling tool tracks students' behavior	Male	21	2.9524	.80475	.17561
	Female	23	3.2609	.75181	.15676	
8	Virtual tutors, text to image generation, video generation platforms, and others can be used to supplement traditional business education techniques to align with evolving demands of the global economy.	Male	22	3.4091	.50324	.10729
	Female	23	3.2174	.67126	.13997	
9	AI tools handle the limitations of traditional one-size-fits-all approaches to ICT skills acquisition in business education.	Male	22	3.1364	.94089	.20060
	Female	23	3.3478	.64728	.13497	
10	AI tools offer automated grading system.	Male	21	3.3333	.73030	.15936
	Female	23	3.3478	.88465	.18446	

Source: SPSS output version 25, 2024.

Given the decision criteria to accept Ho if the Calculated t- value > Critical value (2.50). Table above shows the calculated t- value for the group statistics with an average value of 3.00 for all the variables in the group statistics for male and female. We accept the null hypothesis (Ho) and conclude that Male and female business educators do not differ in their mean responses on the ways Ai-powered tool facilitate experiential learning for effective skill acquisition in business education in tertiary institutions in Ebonyi State that are offering business education in whatever capacity.



Ho₂: There is no significant difference in the mean responses of business educators on the enhancement of business education for effective skill acquisition through Artificial Intelligence tools

Table 5: Summary of t-test analysis of the mean responses of business educators on the ways AI-powered tools facilitate experiential learning for effective skill acquisition in business education.

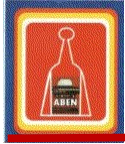
S/ N	Gender of respondents	N	Mean	Std. Deviation	Std. Error Mean	
1	AI's capacity for data processing enhances business education by revolutionizing the way business educators assess students,	Male	22	3.3182	0.47673	0.10164
		Female	23	3.3478	0.88465	0.18446
2	Unlike the traditional approach, AI accommodate the diverse needs of students through its vast data processing capacity.	Male	22	3.4545	0.59580	0.12703
		Female	23	3.2609	0.81002	0.16890
3	Business education platforms leverages AI to comprehend students' individual learning style.	Male	22	3.5455	0.50965	0.10866
		Female	22	3.4545	0.50965	0.10866
4	It facilitates students' collaboration by promoting teamwork/team effectiveness.	Male	21	3.4286	0.67612	0.14754
		Female	22	3.3636	0.78954	0.16833
5	It gives room to periodic personalized assessments.	Male	22	3.6364	0.49237	0.10497
		Female	23	3.3043	0.82212	0.17142
6	It facilitates immediate feedback.	Male	22	3.6818	0.47673	0.10164
		Female	23	3.3478	0.71406	0.14889
7	It helps in progress tracking.	Male	22	3.4091	0.73414	0.15652
		Female	22	3.3182	0.77989	0.16627
8	It enables adaptive learning.	Male	22	3.4091	0.66613	0.14202
		Female	23	3.3913	0.78272	0.16321
9	It harnesses massive datasets to identify emerging trends.	Male	22	3.3636	0.78954	0.16833
		Female	23	3.3043	0.70290	0.14657
10	It supplies data that help to provide timely intervention to students' skill acquisition difficulty.	Male	21	3.0952	0.83095	0.18133
		Female	23	3.4348	0.58977	0.12298
11	It ensures a proactive approach to skill acquisition support.	Male	22	3.2727	0.63109	0.13455
		Female	23	3.1739	0.77765	0.16215

Source: SPSS output version 25, 2024.

Given the decision criteria to accept Ho if the Calculated t- value > Critical value (2.50). Table above shows the calculated t- value for the group statistics with an average value of 3.00 for all the variables in the group statistics. We accept the null hypothesis (Ho) and conclude that there is no significant difference in the mean responses of business educators on the enhancement of business education for effective skill acquisition through Artificial Intelligence tool to facilitate experiential learning for effective skill acquisition in business education in tertiary institutions in Ebonyi State that are offering business education in whatever capacity.

Discussion of Findings

The result of the study shows that AI is a transformative device that could be used to enhance business education programme for effective skill acquisition. Business educators agreed that Natural Language (NLP) tools, modelling tools, teacher-students' collaboration tools,



and voice-activated technology are transformative tools that could enhance business education programme for effective skill acquisition. This finding corroborates the conclusion of Kamalov, Calonge and Gurrib (2023) that AI has quickly established itself as a transformative force in a wide range of industries including education. They further asserted that integration of AI in educational systems is altering the ways in which students learn, teachers educate and institutions function. However, business educators are of the opinion that intelligence tutoring system (ITS) in AI is not necessary for enhancement of business education for effective skill acquisition. This stand is not surprising as there have been contentions on its ability to encourage cheating which is in congruent with the opinion of Prasad (2023) that in as much as ITS delivers intelligent tutoring, it is also a tool for academic dishonesty.

Business educators also agreed that personalized learning offered in AI could be a veritable tool for harvesting effective skill acquisition by students as it boosts identification of skills gap, facilitates re-skilling and up-skilling, fosters increased engagement of students and addresses individual strengths. This finding resonates Lake (2019) view that AI has the potential to positively impact skill acquisition in higher education. He puts it succinctly that adaptive learning systems driven by AI may analyse students' performances, strengths and shortcomings in order to offer tailored learning courses. Mauri (2019) is also in agreement with the findings as he avers that the personalized nature of adaptive learning ensures that students receive tailored content and support, addressing their unique learning needs which, contributes to a more dynamic and effective skill acquisition.

The results also revealed that business educators agreed that AI's capability in analyzing vast amount of data could enhance business education for effective skill acquisition as it enables comprehension of students' individual learning styles; facilitates students' collaboration and helps in progress tracking of students' skills acquisition progress. The finding is in line with the opinion of Meehirr (2023) that AI algorithms' ability to analyze students' data, recognize patterns and suggest personalized content and resources optimize their learning experiences in skill acquisition. In the same vein, Kamalov, Calonge and Gurrib (2023) recognize that AI's potential to analyze massive volumes of data created by students during skill acquisition process reveal patterns and trends that might assist instructors in identifying areas where students require additional support or resources for effective skill acquisition.

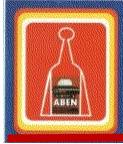
The t-test result for hypotheses revealed that business educators, in their gender and group did not differ significantly in their mean opinion on the ways AI could enhance business education programme for effective skill acquisition. This could be explained by the finding of Naoley (2023) that AI has the power to help improve learning experience by including gamification features such as incentives, challenges and competition. Moreover, engaging and individualized learning environments that increase motivation and active engagement by adapting these components to individual students can be developed.

Conclusion

The impact of AI-powered adaptive learning is profound, redefining the educational landscape for both students and educators. Students not only experience increased engagement but also benefit from higher retention rates and markedly improved academic performance from AI tools. Ultimately, the best way forward is to incorporate AI into the educational system and leverage its capabilities to deliver better learning outcomes for the students. Rather than stopping or preventing the advancement of new AI technology in education, it will be more beneficial, on balance, to integrate it into the curriculum.

Recommendations

The following recommendations were advanced based on the findings of the study:



1. Business educators should open up to this paradigm shift in teaching and learning and embrace the personalized learning inherent in Artificial Intelligence tools for educational improvement.
2. Curriculum planners should review business education curriculum to include basic AI skills to enable students acquire digital skills for use of AI software.
3. The management of institutions offering business education should see the need to procure and install gadgets and software that are necessary for the use of AI in the teaching and learning process.

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