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ASSESSMENT OF BUSINESS EDUCATION LECTURERS' KNOWLEDGE OF AI APPLICATION AREAS AND EXTENT OF USAGE IN EDUCATING STUDENTS IN TERTIARY INSTITUTIONS IN RIVERS STATE

Abdulkarim, Adebisi Musa Ph.D.^{1*}, and Onyemakara, Ifeoma H. Ph.D.²

^{1, 2} School of Secondary Education (Business) Departments of Marketing Education and Accounting Education, Federal College of Education (Tech.), Omoku – Rivers State, Nigeria

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***Corresponding author:** Abdulkarim, Adebisi Musa Ph.D.

Abstract

This study assessed Business Education Lecturers' Knowledge of AI application areas and extent of usage in Tertiary institutions in Rivers State. Two research questions and one hypothesis guided the study. Descriptive survey design was adopted for the study. The population of the study was made up of 96 Business Education lecturers from four tertiary institutions in Rivers State. The entire population of 96 lecturers were used as the sample of the study. Researchers' designed structured questionnaire was used for data collection. The questionnaire which was validated by two experts from River State University was tested for reliability using Cronbach Alpha coefficient of 0.72 obtained from computation done with Statistical Package for Social Science (SPSS) version 24.0. Out of the 96 copies of the questionnaire only 72 copies were administered and properly filled, this constitute 75% of the sample size. Data collected were analysed using mean and standard deviation to answer research questions and simple regression to test the hypothesis at 0.05 level of significance. The findings related Business Education lecturers opined to a moderate extent they have knowledge of AI application areas and to a low extent they use the application areas in tertiary institutions in Rivers State. The findings also revealed that Business Education lecturers' knowledge of AI application areas significantly influence their extent of usage in tertiary institutions in Rivers State. Based on the findings, it was recommended among others that Business Education lecturers in tertiary institutions in Rivers State should endeavour to improve their knowledge of AI application areas through workshops and other training paths.

Keywords: Artificial Intelligence, AI application areas, Business Education lecturers.

Introduction

The continuous evolvement of technological tools and the introduction of new enablers have disrupted the processes of doing things across different sector of the economy, education inclusive. Of notice in recent times, is the introduction and integration of Artificial Intelligence (AI) into the process of information gathering, validation, creation and assessment. This new development has seen many educators (Business education lecturers inclusive) transform their approaches to information generation, content development, learning assessment and grading for quality teaching. According to Timms (2016), artificial intelligence refers to the systems and machines that can simulate intelligent human behavior, such as learning, reasoning, and problem-solving. Similarly, Jaysone (2024) noted that Artificial Intelligence (AI) is a tool with the systemic ability to interpret, learn, and achieve specific tasks from a quick analysis of set of inputted data using human-inspired intelligence. This ability makes AI enablers preferred assistants to many educators in the process of generating educational information for creating content and teaching to address students' diverse learning styles and preferences.

There are many AI tools adopted and used by educators across the globe for the purpose of information gathering, content creation and teaching. The available tools include SMS bots, Virtual Reality (VR), predictive technology and Generative AI, typified by ChatGPT (Boltz, 2023). Similarly, Ray (2023) noted also that Virtual Reality (VR), Augmented Reality (AR), and ChatGPT are common AI tools used in education. These AI tools according to Yu (2022) offer multifaceted advantages to both teachers and learners, the advantages include that of remote learning through facilitating peer connectivity and the creation of digital communities for addressing diverse learning needs of students.

According to Whelan et al (2018), the application of AI technologies in educational programme enhances time management, task prioritization, and repositories of supplemental educational resources. This is true when one considers the various application of AI in educational programme. Dimitiadou (2023) noted that AI has diverse application in educational environment such as creating multimedia contents that appeal to different students' learning preferences, automating assessment and feedbacks, editing and validating essays, and engaging students in a more flexible way. Similarly, Sajid (2023) noted that the applications of AI in education include providing learning assistance, personalised education experiences, improved educational programme accessibility, tutoring and automated and improved grading. Koyuturk (2023) also noted that AI can be used in education to access information, facilitate connectivity, and promote active participation in digital communities. Generative AI, such as ChatGPT engenders enhanced academic outcomes through providing educators with personalized assistance, real-time feedback, and a wealth of information (Ray, 2023). Applying AI to automate teaching routine tasks such as grading, quiz, and providing feedbacks enable teachers to have time for developing lessons, and mentoring students one-to-one (Boltz, 2023).

Promoting personalised education through the application of AI according to Jaysone (2024) has to do with tailoring educational content to individual learners' specific needs and preferences. Boltz (2023) also explained that personalised learning experiences can be created to meet specific student's need because AI supports

creating multimedia content to appeal to the different senses and the preferred way individuals want information to be presented to them. A cursory look at the applications of AI in educational programme reveals that it would be significant for every Business Education lecturer to adapt, learn and use AI in the process of teaching. Aguilar et al (2021) posited that the use of AI technology for student's learning assessment saves cost and time because assessment can be take from student's most convenient places and feedback are automatically done to highlight area of weaknesses. Hou et al. (2023) noted that the application of AI for quiz or test is aimed at enabling students to test their comprehension of what has been learnt through remote controlled quiz or test where they get immediate feedback for each of their responses and correction for wrong ones. Sun et al (2020) noted moderate application of AI technology in the area of accessing educational programme simple connotes remotely allowing students to access same learning content and resources as other students irrespective of their distance and environment. Mujiono (2023) also explained that using AI technology to enhance accessibility of education means making it all remotely controlled for those located in hard-to-reach areas or with physical or learning disabilities.

Business Education lecturers are resourceful individuals with the requisite competences for the interpretation of the programme's curriculum, developing and designing instruction and managing the learning processes required for quality outputs. Ile and Utebor (2018) described Business education lecturers as teachers who are more productive in promoting effective teaching of business subjects. Umoru and Yakubu (2018) noted that lecturers or educators in Business Education programme are saddled with the responsibilities of preparing students to be competent in creating own businesses and handle their business affairs intelligently as consumers and citizens in a business economy. Okoye (2021) revealed the need for Business Education lecturers to be innovative in their act of delivery the curriculum content of the programme so as to ensure that graduates understand the general nature of business environment and can be able to survive in the intensity of global competition. Inferring from the above, it would be realised every Business Education lecturer has as responsibilities the effective interpretation, planning and implementing of courses, the guiding students to learn through in and out of the classroom activities, the assessment of learning outcomes, and grading of performance. In addition, to these primary responsibilities is the need to continuously conduct relevant researches and contribute to the development of the immediate communities; hence, the application of AI by Business Education lecturers in discharging their various responsibilities can help significantly in enhancing the level and quality of programme's outputs.

There are extant studies on AI application in educational programme and different results have been reported on its impact. Giunchiglia (2019) reported teachers know how to use AI to enhance students' engagement in learning activities bolster both their ability to create and organize study contents for better understanding. Hou et al (2021) reported that lecturers are using AI applications to increase their productivity in content development, in providing personalised learning experiences to students and in understanding their students' personality. Mircea (2023) reported that the use of AI by educators enabled them to facilitate personalization of learning, providing instant feedback and improving efficiency in the assessment process. The available empirical studies revealed that must work on application has not actually considered Business Education lecturers' Knowledge of

AI application areas and extent of usage in educating students, it is this gap in existing literature that the current study filled.

Statement of the Problem

AI applications in educational programme is meant to has transformed different spheres of the systems in order to allow for flexibility of content delivery, creating multimedia contents that appeal to different students' learning preferences, automating assessment and feedbacks, editing and validating essays, and engaging students among others. However, is situation where most Business Education lecturers still use single media such as text or oral explanation, delay students' assessment feedbacks, are not flexible with student's access to test or quiz, and manually edit and validates students' essay, raises the question to their knowledge and competencies related to AI applications in education. Consequently, the need to find out Business education lecturers' knowledge of AI application areas and extent of use in educating students cannot be underestimated. It is this that inspired this study aimed at assessing Business Education Lecturers' Knowledge of AI application areas and usage in Tertiary institutions in Rivers State.

Research Questions

The following research questions guided the study:

1. To what extent do Business Education lecturers know AI application areas in tertiary institution in Rivers State?
2. To what extent are Business Education lecturers use AI applications in tertiary in River State?

Research Hypothesis

The following research hypothesis was tested at 0.05 level of significance:

1. Business Education lecturers' knowledge of AI application areas does not significantly influence their extent of usage in Tertiary institutions in Rivers State.

Methods

Descriptive survey research design was used for this study. This design is deemed appropriate because it allows research to elicit the opinions of respondents with regards to the variable under investigation.

The population for this study consists of 96 Business Education lecturers during 2023/2024 academic session from the four tertiary institutions offering Business Education programme in Rivers State. The population is break down as shown in the table below:

Table 1: Population Distribution

Name of Institutions	lecturers
Rivers State University, Port-Harcourt	31
Ignatius Ajuru University of Education, Port-Harcourt	17
University of Port-Harcourt, Rivers State	06
Federal College of Education (Tech.), Omoku	42
Total	96

The entire population of 96 Business Education lecturers were used for the study because it was a manageable size. The researchers' developed structured instrument titled "Business Education Lecturers' Knowledge and Usage of Artificial Intelligent

Applications in Educating Students Questionnaire (BELKUAIESQ)" was used for the study. The instrument contained 12 items made up of 6 repeated items. The responses were structured based on 4 points rating scale of Very High Extent (VHE – 4 marks), High Extent (HE – 3marks), Moderate Extent (ME – 2marks) and Low Extent (LE – 1mark). The instrument was subjected to validation by two experts, one expert of Educational Measurement and Evaluation, and one expert of Business Education all from Rivers State University, Port-Harcourt. The experts' corrections were taken into consideration before the final instrument was used.

The reliability of the instrument was ascertained using Cronbach Alpha Coefficients, the computation done using responses from 10 Business Education lecturers from Niger Delta University and ran on Statistical Package for Social Science (SPSS) version 23.0 gave 0.72. Data collected for the study were analysed using descriptive statistics of mean and standard deviation to answer the research questions. Simple regression was used to test the hypothesis at 0.05 level of significance. All computations were done using Statistical Package for Social Science (SPSS) version 24.0. Only 72 copies of the questionnaire were properly administered and retrieved, hence, only 75% of the sample size was used for the study.

Results

Research Question 1: To what extent do Business Education lecturers know AI application areas in tertiary institution in Rivers State?

Table 2: Summary of Mean and Standard Deviation on Business Education lecturers knowledge of AI application areas in tertiary institution in Rivers State n = 72

S/N	AI application in	Mean	SD	Decision
1	Creating multimedia content	3.66	0.51	VHE
2	Editing and Validating Essay	2.14	0.50	ME
3	Automating testing and grading	2.05	0.57	ME
4	Improving student's access to course work	2.03	0.50	ME
5	Engaging students with learning activities	2.41	0.50	ME
6	Tutoring business education students	2.13	0.45	ME
	Cluster mean	2.40	0.51	ME

Source: Field Survey, 2024

Table 2 above shows that Business Education lecturers from tertiary institutions in Rivers State opined that to a very high extent, they have knowledge of AI application in creating multimedia content with mean score of 3.66 and standard deviation score of 0.51. The respondents also opined that to a moderate extent, they have knowledge of AI application in editing and validating essay, improving student's access to course work, engaging students with learning activities, and tutoring business education students with mean scores of 2.14, 2.05, 2.03, 2.41, 2.13 and standard deviation scores of 0.50, 0.57, 0.50, 0.50, and 0.45 respectively. In same vein, when cluster mean score of 2.40 and

standard deviation score of 0.51 are considered, it can be concluded that Business Education lecturers opined that to moderate extent they have knowledge of AI application areas in tertiary institutions in Rivers State.

Research Question 2: To what extent are Business Education lecturers use AI applications in tertiary in River State?

Table 3: Summary of Mean and Standard Deviation on Extent of Business Education Lecturers Usage AI Applications in Tertiary Institution in Rivers State n = 72

S/N	Usage of AI application in	Mean	SD	Decision
1	Creating multimedia content	2.51	0.45	HE
2	Editing and Validating Essay	1.20	0.54	LE
3	Automating testing and grading of learning	1.13	0.63	LE
4	Improving student's access to course work	1.03	0.71	LE
5	Engaging students with learning activities	1.14	0.62	LE
6	Tutoring business education students	1.13	0.63	LE

Table 4: Summary of Simple Linear Regression on the Extent to which Business Education lecturers' knowledge of AI application areas significantly influence their extent of usage in Tertiary institutions in Rivers State

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.175 ^a	.311	.028	1.366	.311	11.802	1	70	.000
a. Predictors: (Constant), Simulations									

Table 4.6 shows simple regression (R) of .175, regression square of (R^2) of .311, adjusted R^2 of 0.028, the standard error estimate is 1.366. The change statistics show R^2 of 0.311. This means that Business Education lecturers' knowledge of AI application areas significantly influence their extent of usage in Tertiary institutions in Rivers State. However, the extent of change statistics shows that only approximately 31% variance in the usage was influenced by Business Education lecturers' knowledge of AI application areas. This result also means that Business Education lecturers' knowledge of AI application areas to a moderate extent translated to their usage in tertiary institutions in Rivers State. This means that Business Education lecturers are not leveraging much on the application areas of AI to enhance the performance of their responsibilities.

Discussion of Major Findings

The results of the study related to the first research question revealed that Business Education lecturers opined that to moderate extent they have knowledge of AI application areas in tertiary institutions in Rivers State. This finding emanated from the fact that they opined to a moderate extent, they have knowledge of AI application in editing and validating essay, improving student's access to course work, engaging students with learning activities, and tutoring business education students. The finding of this study is supported by the finding of Giunchiglia (2019) who reported teachers know how to use AI to enhance students' engagement in learning activities bolster both their ability to create and organize

	Cluster mean	1.36	0.60	LE
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Source: Field Survey, 2024

Table 3 shows that Business Education lecturers opined that to a high extent they are using AI application for creating multimedia content with mean score of 2.51 and standard deviation score of 0.45. The respondents also opined that to a low extent they are using AI application in editing and validating essay, automating testing and grading of learning, improving student's access of course work, engaging students with learning activities and tutoring business education students with mean scores of 1.20, 1.13, 1.03, 1.64, 1.13 and standard deviation scores of 0.54, 0.63, 0.71, 0.62, and 0.63 respectively. Similarly, when the cluster mean score of 1.36 and standard deviation score of 0.60, it can be concluded that Business Education lecturers opined that to a low extent they use AI applications in tertiary institutions in Rivers State.

Test of Hypotheses

Hypothesis 1: Business Education lecturers' knowledge of AI application areas does not significantly influence their extent of usage in Tertiary institutions in Rivers State.

study contents for better understanding. The finding of this study can also be supported with the position of Sun et al (2020) when they noted moderate application of AI technology in the area of accessing educational programme simple connotes remotely allowing students to access same learning content and resources as other students irrespective of their distance and environment.

The results of the study related to the second research question showed that Business Education lecturers opined that to a low extent they use AI applications in tertiary institutions in Rivers State. This finding emanated from the fact that they opined to a low extent they are using AI application in editing and validating essay, automating testing and grading of learning, improving student's access of course work, engaging students with learning activities and tutoring business education students. The finding of this study is contrary to the finding of Hou et al. (2023) when they revealed the application of AI for quiz or test is aimed at enabling students to test their comprehension of what has been learnt through remote controlled quiz or test where they get immediate feedback for each of their responses and correction for wrong ones. The finding of this study is also contrary to the finding of Sun et al (2020) when they affirmed the moderate application of AI technology in the areas of accessing educational programme simple connotes remotely allowing students to access same learning content and resources as other students irrespective of their distance and environment. The variation of the present finding from those of the earlier studies must be informed by the fact that they concentrated on application of AI in the entire educational

sector programmes globally, while this study concentrated in the application by Business Education lecturers in Rivers State, Nigeria. Nevertheless, the low extent application means that Business Education lecturers are not leveraging much on the application areas of AI to enhance the performance of their responsibilities despite their knowledge of it. This fact is confirmed by the results of test hypothesis which revealed that Business Education lecturers' knowledge of AI application areas significantly influenced their extent of usage in Tertiary institutions in Rivers State.

Conclusions

It can be concluded from the findings of the study, that although Business Education lecturers revealed to a moderate extent they have knowledge of AI application areas, they to a low extent use AI application areas in discharging their responsibilities in tertiary institution in Rivers State. It can also be concluded that the extent of their knowledge influence the extent of their usage of the AI application areas in tertiary institution in Rivers State.

Recommendations

The following recommendations were put forward for implementation:

1. Business Education lecturers in tertiary institutions in Rivers State should endeavour to improve their knowledge of AI application areas through workshops and other training paths.
2. Business Education lecturers should endeavour to increase their rate of using AI application in discharging responsibilities related to teaching, research and assessing learning outcomes.

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