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Artificial Intelligence in Business Education and Employability Opportunities for Undergraduate Students in Rivers State Public Universities

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Abstract

This study investigated the relationship between artificial intelligence in business education and employability opportunities for undergraduate students in Rivers State Public Universities. The study was guided by two research questions and two null hypotheses. The study adopted the correlational research design. The sample for this study was 384 undergraduate students, representing a sample size drawn from a population of 2,559 business education undergraduate students across all four years (Y1 to Y4) of their program, enrolled during the 2021/2022 academic session. The instruments for data collection were self-developed by the researcher, titled "Artificial Intelligence Questionnaire (AIQ)" and Employability Opportunities Questionnaire (EOQ)". The instruments were validated by my supervisor and other experts and their reliability was tested using the Cronbach alpha correlational analysis technique and the result yielded .977 and .888 respectively. Data gathered were analysed using Pearson Product-Moment Correlation to answer the research questions and test the hypotheses. The study's findings revealed that integrating AI-related dimensions, such as data analysis and AI, in finance has been shown to significantly enhance students' practical skills, technical expertise, and readiness for the evolving job market. The study concluded that the adoption of artificial intelligence in classroom settings enhances employability opportunities for undergraduate business education students in Rivers State. Based on the findings, the study recommended, among others, that Institutions should develop comprehensive training programs on data analytics, ensuring students can interpret large datasets and make data-driven decisions a skill set in high demand across sectors.

Keywords: Artificial Intelligence, Employability Opportunities, Undergraduate Business Education Students.

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INTRODUCTION

Artificial intelligence (AI) represents a transformative technological paradigm that is rapidly reshaping the global business landscape, with profound implications for educational systems and

workforce development. The integration of AI into business education has emerged as a critical strategy for preparing undergraduate students to navigate and excel in an increasingly complex and technology-driven professional environment (Huang et al., 2024). The significance of AI in business education extends far beyond technological novelty. It represents a fundamental reimagining of learning methodologies, skill development, and workforce preparation. Key AI applications in business education include computer vision, cybersecurity, digital marketing, data analytics and financial technologies that offer unprecedented opportunities for enhanced learning experiences and practical skill development.

For developing economies like Nigeria, the stakes are particularly high. The nation's ambitious vision to become one of the top 20 global economies by 2030 is intrinsically linked to the quality and adaptability of its workforce, especially within the business and entrepreneurship sectors (Ezeji & Okoro, 2019). This goal demands a radical transformation of educational approaches that prioritize innovation, technological literacy, and strategic thinking. The evolving business ecosystem requires professionals who can seamlessly integrate technological capabilities with strategic insight. AI-driven education provides a comprehensive framework for developing these multidimensional skills to advanced technological tools and methodologies, business education can cultivate a generation of professionals capable of driving economic growth and technological innovation.

Computer vision technologies, for instance, offer students practical insights into machine learning applications across multiple business domains. From retail inventory management to security systems, these technologies demonstrate the potential of AI to solve complex business challenges. Similarly, cybersecurity applications showcase how AI can detect and prevent sophisticated digital threats, a critical skill in an increasingly interconnected global business environment. Digital marketing represents another crucial domain where AI integration can dramatically enhance student learning (Abulibdeh et al., 2024). AI-powered analytics tools enable students to understand complex consumer behavior patterns, develop targeted marketing strategies, and make data-driven decisions. These practical experiences bridge the gap between theoretical knowledge and real-world application.

Data analytics and visualization technologies provide students with powerful tools to transform raw information into strategic insights that students can use to learn and identify trends, predict market behaviors, and develop innovative business solutions (Adigwe et al., 2023). This skill set is particularly valuable in a data-driven global economy where information represents a critical competitive advantage. Financial technologies powered by AI offer students' sophisticated tools for understanding complex market dynamics, risk management, and investment strategies. These technologies demonstrate how machine learning algorithms can process vast amounts of financial data, providing insights that would be impossible through traditional analytical methods.

The integration of AI in business education goes beyond technical skill development. It fosters critical thinking, adaptability, and a forward-looking perspective. Students learn to view technological disruption not as a threat but as an opportunity for innovation and growth (Al Fraidan, 2024). For Nigeria, this approach is particularly crucial. The country's economic development depends on creating a workforce that can leverage technological innovations to drive productivity, efficiency, and competitiveness. Business education must therefore evolve from traditional knowledge transmission models to dynamic, technology-integrated learning ecosystems.

However, with AI integration, educational institutions can prepare students to become architects of technological transformation. This approach ensures that graduates are not merely passive recipients of technological change but active agents capable of driving innovation across various business sectors. The future of business education lies in its ability to anticipate and adapt to technological disruptions to position itself at the forefront of global educational innovation, creating a workforce capable of competing on the international stage.

Artificial Intelligence (AI) refers to the development of computer systems that can perform tasks that typically require human intelligence. This includes learning, problem-solving, decision-making, perception, and language understanding. AI systems utilize algorithms, data, and machine learning techniques to enable machines to simulate intelligent behavior and make decisions autonomously (Jarek & Mazurek, 2019). Thus, Artificial Intelligence (AI) is referred to as systems and machines that imitate human behaviors to perform certain given tasks. It includes machine simulation of human intelligence which is programmed to think and mimic human actions (Nwachukwu & Affen, 2023). Marketing adopting AI to better serve customers is called Artificial Intelligent Marketing.

Cognizant (n.d.) defined Artificial intelligence marketing as the leveraging of AI tools and methods such as data models, algorithms, and machine learning to generate customer insights that can be used by marketers in optimizing spending, customizing content, and personalizing the customer journey. The importance of AI to marketing is enormous mostly in the digital marketing space where marketers can study consumer habits, customize products and services to soothe their tastes, and develop fast and quality advertising content to appeal to the customers' emotions (Nwachukwu & Affen, 2023).

Data gathering, analysis, storing and utilization for designing better customer experiences is very tasking, but with the aid of new technological break-through such as Artificial intelligence (AI) applications and robotics, marketing even in the Nigerian context can now adopt the use of these sophisticated applications to efficiently generate and manage customers experience data to a maximum extent, whereby staying competitive in this dynamic global business environment. These sophisticated AI techniques according to Nwachukwu and Affen (2023) consist of automated email, chatbots, and several kinds of analytical tools that aid the customer in their shopping journey while enhancing their shopping experience. Also, Artificial Intelligence tools can help online marketers develop unique quality digital content that is profitable and efficient in offering customers value and standing competitive.

Employers expect university graduates seeking entry-level marketing jobs to be well-versed in contemporary topics, such as sustainable development, digital marketing, big data, analytics, and artificial intelligence (AI) roles in traditional and modern marketing. Because many of today's cutting-edge technological advances are deeply relevant to marketing, marketing educators must reconsider how they prepare marketing students to enter the technology-enabled world and workforce (Grewal et al., 2024). AI is a transformative technology and as such, provides numerous opportunities and challenges for several disciplines and departments, not only within a school of business but the university as a whole. When taken in the context of business education and a business school, AI is about understanding and interpretation, strategizing, and ultimately carrying out actions necessary to further the organization's interests and intents.

Also, business leaders around the globe agree that big data and advanced technologies are influencing how companies create competitive advantage and how they apply day-to-day business processes (Ufondu & Obi, 2024). However, the growing need for data analysts is such

that new positions are opening within organizations and employers are having to pursue external analytic specialists to fill needs. Employment growth in the big data field is increasing at accelerated rates and thus, a significant risk to any organization is the inability to recruit skilled, knowledgeable workers. With demand for data-driven cultures expected to increase, more and more companies within both public and private sectors will focus on recruiting adept personnel for their big data needs (Davenport & Bean, 2017). As a result of this demand, business education must examine its curriculums to understand what institutions can prepare students for careers in the data analytics industry (Ufondu & Obi, 2024).

Data Analytics and Visualisation as a Classroom Setting Tool and Employability Opportunities

In the marketing domain, AI has profoundly reshaped marketers' traditional tasks, including copywriting, ideation, developing scripts for video presentations, and conducting competitive analyses. Generative AI (gen AI) can replace or complement marketing research efforts and produce first drafts of sales proposals, which salespeople can then edit to fit the specific needs of, and relational nuances related to, their clients (Davenport et al., 2024). Noting the substantial impacts of these technological advancements in marketing domains marketing educators have little choice but to prepare future marketers for a new technology-enabled era or else risk obsolescence of their students and themselves (Guha et al., 2024).

Data analytics and visualization are essential tools in an artificial intelligence (AI) classroom setting, enabling students to extract insights and meaning from complex data sets. Data analytics refers to the process of examining data to draw conclusions and identify patterns, while data visualization is the graphical representation of this data to facilitate understanding. In an AI classroom setting, data analytics and visualization tools, such as Tableau, Power BI, or D3.js, are used to help students develop critical thinking and problem-solving skills (Mohammed et al., 2024).

AI in Finance as a Classroom Setting Tool Enhances Employability Opportunities

The concept of AI in finance, also known as Fintech, was first introduced by a group of researchers at the Massachusetts Institute of Technology (MIT) in the 1980s. They proposed the idea of using artificial intelligence to analyze financial data and make predictions about market trends. This innovative approach aimed to revolutionize the financial industry by leveraging the power of AI to make more accurate predictions, reduce risks, and improve investment decisions (Sharbek, 2024).

With AI-powered platforms, individuals and small businesses can access financial services that were previously reserved for large corporations and wealthy individuals. This has opened up new opportunities for economic growth and development, particularly in emerging markets. However, Fintech also raises important regulatory and ethical considerations. As AI systems become more pervasive in finance, there is a growing need for transparency, accountability, and oversight. Regulators must balance the need to encourage innovation with the need to protect consumers and prevent fraud (Sharbek, 2024).

Statement of the Problem

The rapid advancement of artificial intelligence (AI) technologies presents a critical challenge for business education in Rivers State, specifically concerning the enhancement of employability opportunities for undergraduate students. Despite the transformative potential of AI across various business domains, there remains a significant research gap in understanding how AI integration can effectively prepare students for the contemporary workforce. The problem is multidimensional, encompassing educational, economic, and technological dimensions. Businesses are increasingly adopting AI-powered solutions across sectors, creating a demand for professionals with advanced technological skills. However, the current business education ecosystem may not be adequately equipped to prepare students for this technological transition. The potential consequences include reduced employability, limited career progression, and diminished capacity to drive innovative business solutions.

Rivers State's economic landscape, traditionally dependent on sectors like oil and gas, requires a workforce capable of leveraging AI technologies to drive diversification and growth. The lack of comprehensive AI integration in business education could potentially hinder the region's economic competitiveness and innovation potential. Students without exposure to AI technologies may find themselves at a significant disadvantage in a job market that increasingly values technological literacy and adaptive skills. Furthermore, the absence of structured AI education could create significant disparities in workforce preparedness. Students without access to AI resources and training may face increased challenges in securing meaningful employment, potentially perpetuating existing socioeconomic inequalities and limiting individual and regional economic development.

Research Questions

The following questions were raised to guide the study:

- How do data analytics and visualisation as a classroom setting tool enhance employability opportunities for undergraduate business education students in Rivers State?
- How does AI in finance as a classroom setting tool enhance employability opportunities for undergraduate business education students in Rivers State?

Hypotheses

The following hypotheses were formulated and statistically tested at a .05 level of significance:

- There is no significant relationship between data analytics and visualisation classroom setting tools and employability opportunities for undergraduate business education students in Rivers State.
- There is no significant relationship between AI in finance classroom setting tools and employability opportunities for undergraduate business education students in Rivers State

METHODS

The study employed a descriptive and correlation survey design to systematically collect and analyze data with a study population consisting of 2,559 business education undergraduate students across four academic years (100-400 levels) in the 2021/2022 academic session. The study selected a sample of 384 students using stratified random sampling, which ensured representation from all four years of study and across different departments including Accounting, Management, Marketing, and Secretarial studies. Data was collected through two self-developed questionnaires: the "Adoption of Artificial Intelligence Classroom Settings Questionnaire" (AAICRSQ) and the "Employability Opportunities Questionnaire" (EOQ). The questionnaires were structured in three parts, covering demographic information, AI adoption assessment, and employability opportunities. They used a four-point Likert scale for responses, ranging from Strongly Agree (4 points) to Strongly Disagree (1 point). The instrument's validity was established through expert review by three senior lecturers from the Department of Educational Psychology, IAUE, Nigeria. Reliability was tested using the test-retest method with a separate group of 30 respondents, yielding high Cronbach alpha reliability coefficients of .977 and .888. Data analysis was conducted using SPSS version 26., employing both descriptive statistics (mean and standard deviation) and inferential statistics (Pearson's Product Moment Correlation Coefficient). A criterion mean of 2.50 was used to interpret agreement or disagreement with statements.

RESULTS

Research Question 1: How do Data analytics and visualization as an artificial intelligence classroom setting tool enhance employability opportunities for undergraduate business education students in Rivers State?

Table 1: Correlations for Data analytics and visualization as an Artificial Intelligence Classroom setting tool and Employability opportunities for Undergraduate Business Education students

		Data Analytics	Employability Opportunities
Data Analytics	Pearson Correlation	1	.827**
	Sig. (2-tailed)		.000
	N	357	357
Employability	Pearson Correlation	.827**	1
Opportunities	Sig. (2-tailed)	.000	
	N	357	357

**. Correlation is significant at the .01 level (2-tailed).

Table 1 shows the relationship between Data analytics and visualization as an artificial intelligence classroom setting tool to enhance employability opportunities for undergraduate business education students in Rivers State using Pearson Product Moment correlation coefficient (r) techniques. From the analysis, the result showed a correlation coefficient of r =0.827 which shows the direction and strength of this relationship. This value implies that a strong relationship exists between the variables. The direction of the relationship indicates that the relationship is positive, implying that an increase in Data analytics and visualization as an artificial intelligence will employability opportunities for undergraduate business education students in Rivers State. Therefore, Data analytics and visualization as an artificial intelligence

classroom setting tool enhances employability opportunities for undergraduate business education students in Rivers State.

Ho_1: There is no significant relationship between Data analytics and visualization as an artificial intelligence classroom setting tool and employability opportunities for undergraduate business education students in Rivers State**.**

Similarly displayed in Table 1 is the statistical test of significance (p-value), which makes possible the generalization of our findings to the study population. From the result obtained, the tests of significance show that the relationship between Data analytics and visualization as an artificial intelligence classroom setting tool enhances employability opportunities for undergraduate business education students in Rivers State is significant ($p=0.000<0.05$). Therefore, based on observed findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between Data analytics and visualisation as an artificial intelligence classroom setting tool that enhances employability opportunities for undergraduate business education students in Rivers State.

Research Question 2: How does AI in finance as an artificial intelligence classroom setting tool enhance employability opportunities for undergraduate business education students in Rivers State?

Table 2: Correlations for AI in finance as an artificial intelligence classroom setting tool and employability opportunities for undergraduate business education students

		AI in Finance	**Employability Opportunities**
AI in Finance	Pearson Correlation	1	.845**
	Sig. (2-tailed)		.000
	N	357	357
Employability Opportunities	Pearson Correlation	.845**	1
	Sig. (2-tailed)	.000	
	N	357	357

**. Correlation is significant at the .01 level (2-tailed).

Table 2 shows the relationship between AI in finance as an artificial intelligence classroom setting tool to enhance employability opportunities for undergraduate business education students in Rivers State using Pearson Product Moment correlation coefficient (r) techniques. From the analysis, the result showed the correlation coefficient of r =0.845 which shows the direction and strength of this relationship. This value implies that a strong relationship exists between the variables. The direction of the relationship indicates that the relationship is positive, implying that an increase in AI in finance as an artificial intelligence will employability opportunities for undergraduate business education students in Rivers State. Therefore, AI in finance as an artificial intelligence classroom setting tool enhances employability opportunities for undergraduate business education students in Rivers State.

Ho_2: There is no significant relationship between AI in finance as an artificial intelligence classroom setting tool and employability opportunities for undergraduate business education students in Rivers State.

Similarly displayed in Table 2 is the statistical test of significance (p-value), which makes possible the generalization of our findings to the study population. From the result obtained, the tests of significance show that the relationship between AI in finance as an artificial intelligence classroom setting tool enhances employability opportunities for undergraduate business education students in Rivers State is significant ($p=0.000<0.05$). Therefore, based on observed findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between AI in finance as an artificial intelligence classroom setting tool and enhanced employability opportunities for undergraduate business education students in Rivers State.

DISCUSSION OF FINDINGS

Data Analytics as an artificial intelligence classroom setting tool enhance employability opportunities for undergraduate business education students in Rivers State

The outcome of the analysis on how data analytics as an artificial intelligence classroom setting tool enhances employability opportunities for undergraduate business education students in Rivers State revealed that data analytics as an artificial intelligence classroom setting tool enhances employability opportunities for undergraduate business education students in Rivers State. The Findings show that the ability to analyze large datasets and extract actionable insights is a key competency in the modern business world.

The findings agree with the study by Zouhaier (2023), who carried out a study to explore the impact of AI on higher education by examining its effects on teaching and learning, assessment, ethics, required skills, and future careers. This study aims to analyze the influence of AI on higher education, investigate its impact on the teaching and learning process, examine its effect on assessment and grading, and predict its influence on graduates' future careers. To accomplish this, the study employs a qualitative approach based on a survey of the higher education audience. The results of this study demonstrated the crucial role of AI in the future of higher education. They also emphasized the importance of considering the ethical implications of AI. The study reveals that higher education institutions need to integrate AI more extensively in their programs to prepare graduates for the future workforce has the potential to revolutionize education by personalizing teaching methods to suit individual student needs, providing prompt feedback, and automating administrative tasks. It can also assist in grading and assessment, freeing educators to focus on developing curriculum and providing quality instruction.

AI in Finance as an artificial intelligence classroom setting tool enhances employability opportunities for undergraduate business education students in Rivers State

The outcome of the analysis on how AI in finance as an artificial intelligence classroom setting tool enhance employability opportunities for undergraduate business education students in Rivers State revealed that AI in finance as an artificial intelligence classroom setting tool enhance employability opportunities for undergraduate business education students in Rivers State. The Findings show that AI applications in finance, such as automated trading, fraud detection, and financial forecasting, showed a strong correlation with improved employability outcomes for students specializing in business education.

The finding is in line with the study by Vate-U-Lan anf Takahashi (2019) study on AI's impact on education in Japan and the study on AI adoption in classroom settings and employability opportunities for undergraduate business education students in Rivers State share a common interest in AI's role in education. Both studies explore AI's potential to enhance learning experiences and outcomes, as well as concerns about unequal access and teacher replacement, while Vate-U-Lan and Takahashi (2019) study focuses on Japan, the other study examines AI's impact in a specific region in Nigeria. Despite differing contexts, both studies recognize AI's transformative potential and emphasize the need for balanced integration, equitable access, and teacher training to ensure AI complements human teaching and supports diverse student populations.

CONCLUSION

This study demonstrates a strong and positive relationship between the adoption of artificial intelligence (AI) in classroom settings and the enhancement of employability opportunities for undergraduate business education students in Rivers State. The integration of AI-related dimensions such as data analytics, and AI in finance has been shown to significantly boost students' practical skills, technical expertise, and readiness for the evolving job market. The findings revealed that exposing students to AI tools and technologies within these dimensions equips them with competencies that are in high demand across industries. Specifically, data analytics provides them with essential skills for the modern business environment, where data-driven decision-making is crucial. Finally, AI in finance prepares them for roles in the increasingly AI-powered financial sector.

Recommendations

Based on the findings of the study, the following recommendations were made:

- Institutions should develop comprehensive training programs on data analytics, ensuring students can interpret large datasets and make data-driven decisions, which is a skill set in high demand across sectors. Provide students with access to cutting-edge analytics software such as Python, R, or Tableau.
- Institutions should ensure that AI in finance is a major focus of the curriculum, preparing students for careers in financial analysis, risk management, and algorithmic trading where AI is heavily utilized. As well as collaborate with financial institutions to offer specialized courses on AI-driven financial tools, robo-advisors, and automated financial reporting systems.

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