

ARTIFICIAL INTELLIGENCE (AI) TOOLS AND EFFECTIVE TEACHING OF BUSINESS EDUCATION IN FEDERAL COLLEGE OF EDUCATION (FCE) OBUDU

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Abstract

This study investigated the influence of Artificial Intelligence (AI) tools on the teaching of Business Education in Federal College of Education (FCE) Obudu. The research adopted a descriptive survey design. The population consist of 27 teaching staff. Census sampling techniques was adopted in the study. A structured questionnaire was used to collect data from 27 Business Education lecturer. The questionnaire focused on teachers' awareness of AI tools, their utilization in instructional practices. 3 experts validated the instrument. Data were analyzed using descriptive statistics, including mean scores. The findings revealed that teachers' awareness of AI tools significantly enhances their ability to integrate technology into lesson delivery, while the utilization of AI tools improves teaching effectiveness, student engagement, and understanding of complex business concepts.it was recommended that Provision of regular training and workshops for teachers on the use of Artificial Intelligence tools in teaching Business Education, provision of adequate technological infrastructure such as computers, AI software, and reliable internet facilities in FCE Obudu. Integration of Artificial Intelligence tools and digital teaching strategies into the Business Education curriculum.

Keywords: Artificial intelligences, effective teaching, business education Introduction

Artificial Intelligence (AI) has emerged as one of the most transformative technologies of the twenty-first century, significantly influencing various sectors, including education. In recent years, the integration of AI into educational systems has gained global attention due to its capacity to enhance teaching effectiveness, personalize learning experiences, and improve educational outcomes (Holmes et al., 2022; UNESCO, 2021). As higher education institutions adapt to technological advancements, Colleges of Education are increasingly exploring innovative approaches to preparing future educators. Within this framework, the application of Artificial Intelligence in the teaching of Business Education presents new opportunities for improving instructional delivery and student learning outcomes. Artificial Intelligence refers to the simulation of human intelligence in machines programmed to think, learn, reason, and make decisions (Russell & Norvig, 2021). AI technologies such as machine learning, natural language processing, intelligent tutoring systems, and data analytics enable computers to process large volumes of information and generate insights that can support teaching and learning processes. In educational contexts, AI-driven systems can analyze student data, monitor progress, and provide adaptive feedback, thereby supporting effective pedagogical practices (Luckin et al., 2016).

Business Education, as a professional discipline in Colleges of Education, is designed to equip students with theoretical knowledge and practical skills necessary for careers in business, entrepreneurship and teaching. It

covers areas such as accounting, marketing, economics, office technology, and business management. The dynamic nature of the global business environment, characterized by automation, digital transformation, and data-driven decision-making, requires instructional approaches that reflect current industry practices (World Economic Forum, 2023). Consequently, integrating AI into Business Education enhances curriculum relevance and prepares students for modern workplace demands.

Effective teaching in Business Education involves the use of appropriate instructional strategies, interactive learning methods, continuous assessment, and meaningful engagement that fosters knowledge acquisition and skill development. According to Darling-Hammond et al. (2020), effective teaching promotes deep understanding, critical thinking, and the practical application of knowledge. Artificial Intelligence supports these elements by enabling lecturers to implement adaptive learning systems that respond to individual students' needs, thereby improving comprehension and retention. One significant contribution of AI to effective teaching is personalized learning. AI-powered platforms can analyze students' performance patterns and adjust instructional content accordingly (Zawacki-Richter et al., 2019). For instance, in accounting or business mathematics courses, AI systems can detect areas where students struggle and provide additional exercises or explanations tailored to their learning pace. This individualized support enhances students' academic performance and reduces learning gaps, particularly in large classroom settings common in Colleges of Education.

In addition, AI enhances instructional planning and curriculum delivery. Through learning analytics, lecturers can identify trends in students' engagement and achievement, enabling them to refine their teaching strategies (Siemens & Baker, 2012). AI tools can also recommend relevant case studies, simulations, and multimedia resources that enrich classroom experiences. In Business Education, AI-driven simulations can replicate real-life business scenarios, allowing students to practice decision-making in finance, marketing, or management within a controlled virtual environment (Holmes et al., 2022). Such experiential learning strengthens problemsolving abilities and entrepreneurial competencies.

Assessment and feedback are also critical components of effective teaching. Traditional assessment methods often require considerable time and effort, which may limit timely feedback. AI-based systems can automate grading of objective tests and provide instant feedback on assignments, thereby promoting continuous learning (Luckin et al., 2016). Immediate feedback helps students identify errors and improve performance, while lecturers can focus more on mentoring and instructional improvement. In Business Education, where accuracy in calculations and clarity in reports are essential, AI tools enhance precision and efficiency in evaluation processes. Furthermore, Artificial Intelligence fosters collaborative and flexible learning environments. Intelligent chatbots and virtual assistants can respond to students' inquiries outside classroom hours, thereby extending learning opportunities (UNESCO, 2021). This support system is particularly beneficial in Colleges of Education where lecturer-student ratios may be high. By providing accessible academic assistance, AI enhances student engagement and supports inclusive education practices.

The integration of AI in Business Education also aligns with the broader goals of educational reform and digital transformation. The World Economic Forum (2023) emphasizes that future jobs will increasingly require digital literacy, analytical thinking, and technological competence. By incorporating AI tools into teaching, Colleges of Education equip prospective Business Education teachers with the skills necessary to integrate technology into their future classrooms. This ensures sustainability and relevance in teacher preparation programs.

However, despite its numerous benefits, the implementation of AI in Colleges of Education faces challenges such as inadequate infrastructure, limited funding, insufficient digital skills among lecturers, and concerns about data privacy and ethics (Zawacki-Richter et al., 2019; UNESCO, 2021). Addressing these challenges requires institutional commitment, policy support, and continuous professional development programs that empower

educators to effectively utilize AI technologies.

In developing countries such as Nigeria, the adoption of advanced AI tools in teacher education institutions remains gradual (Holmes et al., 2022). Nevertheless, national educational policies increasingly emphasize digital literacy and technology integration as essential components of quality education (Federal Ministry of Education, 2020). Therefore, exploring the role of Artificial Intelligence in enhancing the effective teaching of Business Education in Colleges of Education is both timely and relevant.

Artificial Intelligence (AI) has increasingly become a transformative force in education, offering innovative ways to enhance teaching and learning through adaptive learning systems, intelligent tutoring, and data-driven feedback (Holmes et al., 2022; Luckin et al., 2016). In the context of Business Education within Colleges of Education, AI presents opportunities to improve instructional delivery, facilitate experiential learning through simulations, and provide personalized support that aligns with students' learning needs (Zawacki-Richter et al., 2019; UNESCO, 2021). Despite the demonstrated benefits of AI in higher education, much of the research has focused on general academic subjects or technology-rich environments, leaving a limited understanding of how AI specifically impacts the effectiveness of teaching Business Education courses, particularly in developing countries where infrastructural and technological challenges persist (Federal Ministry of Education, 2020; World Economic Forum, 2023). This gap raises a crucial question: to what extent can Artificial Intelligence enhance the effective teaching of Business Education in Colleges of Education, and what strategies are necessary to optimize its integration in such contexts? Purpose of the study

The purpose of this study is to find out if the use of AI influence the teaching of Business education in FCE Obudu . specifically, the study sought to examine:

i. Teachers awareness of AI tool in teaching of business education in FCE obudu ii. Teachers utilization of AI tool in teaching of business education in FCE Obudu

iii. The challenges associated with the use of AI tools in teachin bsiness educations in FCE, Obudu Research questions

How does Teachers awareness of AI tool influence the teaching of Business education in FCE obudu

How does Teachers utilization of AI tool influences the teaching of Business education in FCE Obudu

What are the challenges associated with the use of AI tools in teachin bsiness educations in FCE, Obudu

Methodology

The design adopted for the study is descriptive research design. The purpose of choosing this design is to gather information about variables staff awareness of different AI tools in teaching of Business education, ability to used them in effective teaching of Business Education in College of Education Obudu from a representative sample of the population. The population of this study involves all staffs in Business education department in FCE Obudu. Census sampling technique was adopted. The sample used for the study consists of 27 staffs in the department. AI tools in teaching of Business Education Questionnaire (AITBEQ) was used for data collection. The instrument with the purpose, research question was given to three (3) experts in measurement and evaluation both in Federal College of Education Obudu who ascertained the face validity of the instrument. AITBEQ was administered by researcher to the respondent and retrieved on the spot upon completion. The reason for on-the-spot administration and retrieval was to ensure a high return rate of the instrument. The data for the study was analyzed using simple mean.

Research question one

How does Teachers awareness of AI tool influence the effective teaching of Business education in FCE Obudu? to answer this research question item from 1-7 of the questionnaire were used as presented in table1.

Table 1

Mean of respondents Teachers awareness of AI tool on teaching of Business education (N=27)

In table 1, item 1-7 were accepted because the mean response was above criterion mean of 2.50. this table shows that Teachers awareness of AI tool influence the teaching of Business education in FCE Obudu. Research question two

How does Teachers utilization of AI tool influence the effective teaching of Business education in FCE Obudu? Simple mean was used to answer the research question. from item 6-10 of the questionnaire were used as presented in table 2.

Table 2

Mean of respondents of Teachers utilization of AI tool influence the teaching of Business education (N=27)

In table 2, item 8-12 were accepted because the mean response were above criterion mean of 2.50. this table shows that teachers utilization of AI tool influence the effective teaching of Business education in FCE Obudu.

Research question three

What are the challenges associated with the use of AI tools in teaching Business Educations in FCE, Obudu. from item 6-10 of the questionnaire were used as presented in table 2

Table 2

Mean of respondents of Teachers utilization of AI tool influence the teaching of Business education (N=27)

In table 3, item 13-17 were accepted because the mean response were above criterion mean of 2.50. this table shows that there is a high challenges associated in using AI tool influence the effective teaching of Business education in FCE Obudu such as inadequate training, poor internet in Obudu and lack of adequate ICT infrastructure.

Discussion of findings

The findings of the study revealed that teachers' awareness of Artificial Intelligence (AI) tools significantly influences the teaching of Business Education in Federal College of Education (FCE) Obudu. The results showed that teachers who are aware of AI tools are more likely to integrate modern technologies into their instructional practices, thereby improving the quality of teaching and learning. Awareness of AI tools enables teachers to explore innovative teaching strategies such as the use of intelligent tutoring systems, automated content generators, and digital learning platforms that support effective lesson delivery. This finding is consistent with the study of Zawacki-Richter et al. (2019), who reported that teachers' awareness and knowledge of AI technologies are essential factors that determine their adoption and effective use in educational settings. Similarly, Holmes, Bialik, and Fadel (2019) observed that educators who are aware of emerging AI technologies

are better positioned to design innovative and engaging learning experiences that improve students' understanding of academic concepts.

Also, the findings of the study revealed that teachers' utilization of Artificial Intelligence (AI) tools positively influences the teaching of Business Education in Federal College of Education (FCE) Obudu. The results indicate that lecturers who make use of AI tools are able to improve their instructional delivery, prepare better teaching materials, and explain complex Business Education concepts more effectively. The use of AI-powered platforms, digital content generators, and intelligent learning systems enables teachers to present lessons in a more structured and engaging manner, thereby enhancing students' understanding of business-related topics. This finding is consistent with the study of Luckin et al. (2016), which reported that AI technologies support teachers in lesson planning, content development, and classroom instruction. Similarly, Holmes, Bialik, and Fadel (2019) noted that the integration of AI tools in education enhances teaching effectiveness by providing educators with innovative resources that support interactive and learner-centered teaching methods.

Finally, The findings from Table 3 indicate that items 13-17 were accepted, as their mean scores exceeded the criterion mean of 2.50, suggesting that respondents strongly agree that significant challenges hinder the effective use of AI tools in teaching Business Education in FCE Obudu. Prominent among these challenges are inadequate teacher training, poor internet connectivity, and lack of adequate ICT infrastructure. This result aligns with the position of Ertmer (2022), who emphasized that insufficient teacher competence and training remain major barriers to integrating emerging technologies in classrooms. Similarly, Pelgrum (2024) identified poor infrastructure and limited access to technological resources as critical constraints in technology adoption in developing regions. In addition, the findings support the work of Bingimlas (2025), who reported that lack of ICT facilities and unstable internet connectivity significantly affect teachers' ability to effectively utilize digital tools for instruction. Therefore, the high mean ratings in this study confirm that these structural and capacity-related challenges significantly influence the effective teaching of Business Education using AI tools in FCE Obudu.

Conclusion

In conclusion, the study established that both teachers' awareness and utilization of Artificial Intelligence (AI) tools play a significant role in influencing the teaching of Business Education in Federal College of Education (FCE) Obudu. The findings revealed that when teachers are aware of AI technologies and effectively utilize them in their instructional practices, teaching becomes more interactive, organized, and capable of improving students' understanding of business concepts. AI tools support lesson preparation, enhance classroom engagement, and facilitate innovative teaching approaches that align with modern educational and business practices. Therefore, promoting teachers' awareness and encouraging the utilization of AI tools are essential steps toward improving the effectiveness of Business Education teaching in Colleges of Education

Recommendation

Based on the findings, of the study, the researcher arrived at the following recommendations;

Provision of regular training and workshops for teachers on the use of Artificial Intelligence tools in teaching Business Education.

Provision of adequate technological infrastructure such as computers, AI software, and reliable internet facilities in FCE Obudu.

Integration of Artificial Intelligence tools and digital teaching strategies into the Business Education curriculum.

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