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ARTIFICIAL INTELLIGENCE: A PRODIGY FOR SUCCESSFUL BUSINESS EDUCATION TEACHING AND LEARNING IN THE CONTEMPORARY GLOBAL SETTING

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Abstract

Due to the impact of manual functions, business education is confronted with previously unheard-of opportunities and challenges. Additionally, graduates of business education are under more pressure to find employment. The labour market has tightened its standards for workers as because of the development of artificial intelligence, and graduates with a high level of professionalism and comprehensiveness will be chosen. Consequently, as a department of business education It should accurately comprehend the artificial intelligence trend, place a high value on its impact and role in the advancement of business education, link AI to the innovation and reform of vocational education, and employ AI teaching strategies in a way that is both logical and scientific. In keeping with the advancement of the times, it is employed in everyday education to develop exceptional abilities for the nation and society. In an effort to raise the caliber of instruction and standard of business education, this article will examine how artificial intelligence is affecting vocational education and potential solutions. This study concludes that AI holds significant potential to improve the quality of business education and align it with global standards, but its benefits can only be maximized through balanced integration with traditional teaching methods. It is recommended that Institutions should encourage continuous professional development in AI applications for business educators. Also, policies that emphasize ethical and responsible AI use should also be implemented. By addressing these gaps, AI can serve as a catalyst for innovative reforms in business education and produce globally competitive graduates.

Keywords: Artificial Intelligence, Business Education, Teaching and Learning

Introduction

Artificial intelligence, one of the three most advanced technologies in the world, has the potential to transform traditional society's occupational patterns and employment structure while also replacing simple repetitive mental labor. Vocational education should therefore fully comprehend and adjust to the social development trends and changes brought about by artificial intelligence, develop innovative teaching strategies and concepts, and assist students in better understanding the new social employment system and accurately determining their own positioning. The advent of artificial intelligence has altered the conventional dynamic between educators and learners, allowing educators to better address each student's unique needs by offering career and employment guidance and serving as advisors for their development. AI has also begun to appear in the field of education in recent years, especially in educational management (Igbokwe, 2023). Investigating AI's potential can help to improve student results, instructor effectiveness, the teaching and learning process, and administrative work automatio (Veletsianos, 2019). Despite being in its infancy, artificial intelligence (AI) in education has already showed encouraging outcomes in Nigeria (Gupta, 2020). AI in education has several opportunities for Business educators, students, and school administrators. For instance, ChatGPT's most recent version, GPT-4, optimizes educational duties by being incorporated into programmes like Microsoft Office, Edge, and Bing (Forero-Corba, & Negre Bennasar, 2024).

In the upcoming decades, artificial intelligence (AI) in education is anticipated to expand dramatically, bringing with it both new potential and difficulties (Surugiu, Grădinaru, & Surugiu, 2024; Khosravi, 2022). By incorporating Artificial Intelligence Education (AIE) to enhance teaching, individualized learning, assessments, and administrative services, scholars, decision-makers, and practitioners are

investigating the potential of AI (Zhang & Aslan, 2021; Chiu et al., 2023). Despite occasional organizational challenges, artificial intelligence (AI) represents advancement in education, offering benefits on many levels and stimulating the evolution of teaching and learning through technologies such as robots, automated assessment, digitized artifacts, chatbots, Mavis Beacon Teaches Typing (MBTT), market research and intelligent tutoring systems amidst occasional organizational challenges. (Ukata & Agburuga 2024; Valetsianos, 2019).

Meaning of Artificial Intelligence

Artificial intelligence (AI) is the theory and development of computer systems that can carry out tasks that need human intelligence, including teaching, visual perception, speech recognition, decision-making, and language translation (Pattam, 2021). The study of creating machines with human-like thought and behaviour is known as artificial intelligence. A sophisticated subset of information and communication technology (ICT), artificial intelligence (AI) uses hardware and software to mimic human capabilities.

Meaning of Business Education and its contents

National Universities Commission (2022) posited that Business Education is a specialized profession designed to provide students with knowledge, skills and competence leading to employability and advancement in office occupations, pedagogical skills in teaching business subjects at different levels of educational system as well as self-employment or being an employer of labour. As an aspect of Vocational Education and Training, Business Education is designed to fill the gap between knowledge and practice by exposing students to General Education as well as specialized areas in Accounting, Entrepreneurship, Marketing and Office Technology and Management. Business Education contents are all encompassing programmes in which courses contents are in the areas of Business Management, Business Administration, Office Information Management System, Office Technology and Management, (Information and Communication Technology or Information Management System, Purchase/Supply Education. Others are Accountancy Education, Marketing Education, Communication Skills, English Language, Distributive Education, Entrepreneurship Education, Management/Marketing, Education Psychology, Philosophy and Sociology of Education, Business Law, Research Methodology etc, these require exploring the power of Artificial Intelligence (AI) (Ukata & Sila-Dikibo, 2020: Ukata, 2019). Lynch lists the following current areas of AI exploration in education that apply to business education programs: Classroom/Behavior Management, Lesson Planning, Classroom Audio-Visual, Parents-Teacher Communication, Language Learning, Test Prep, Assessment, Learning Management Systems, Gamification for Enhanced Student Engagement, Staff Scheduling and Substitute Management, Instructor Development, Transportation, Maintenance, Finance, Cybersecurity, Academic Fraud Detection, Safety and Security (Onlinedegrees, 2024; Smith, 2021; Singh & Singh, 2021).

AI-related topics that can be investigated and applied to business education courses

These days, AI is utilized in a variety of fields, including academic research, online teaching and learning, chatbots for enrollment and retention, learning management systems, faculty lecture transcription, improved online discussion boards, analysis of student success metrics, connected campuses, and plagiarism detection (Eagle Scan, Turnitin, etc.) (Online Degrees, 2024; Smith, 2022). Rose (2023), claims that the ability to interpret enormous volumes of data about students, instructors, and teaching and learning interactions is where artificial intelligence truly shines in the field of education. In the end, AI can "assist teachers in better and more accurate understanding their students" (Online Degrees, 2024). Regretfully, despite the many advantages AI offers for the teaching and learning process, nothing about AI in business education programs or teacher exploration was covered in the National Universities Commission's 2022 Core Curriculum and Minimum Academic Standard for Nigerian University System (CCMAS). Given the demands of the modern global workplace and Nigeria's need to create graduates that meet high international standards, these are issues of great importance.

Benefits of AI to both Business Educational Learners and Students

Building on earlier learning theories, artificial intelligence education (AIE) helps teachers adopt educational tools and integrates best practices to improve learning (Cope, Kalantzis, & Searsmith, 2021). AIE benefits teachers and the teaching process by providing personalized educational resources, learning predictive models, tailored content for individual learners, at-risk or gifted students, improved classroom management, enhanced teaching across a variety of subjects, academic progress facilitation, and qualified development in pedagogical skills, human behavior, and interactions (Zhang & Aslan, 2021; Chiu et al., 2023).

AIE can open up new research opportunities at universities and other postsecondary institutions by increasing experimental and investigative activities and sharing study findings. Since AIE offers students assistance and solutions, teachers can experiment with AI in challenging activities (Southworth et al., 2023). According to Khosravi et al. (2022), explainable AI should be incorporated into education, human-centered design should be given priority when creating educational tools, AI implementation should be evaluated, and AIE systems should be improved for dependability and knowledge transfer support during teaching and learning.

Investigating AI's potential in education greatly improves student engagement and performance (Zhang and Aslan, 2021). Chiu et al. (2023) determined that competency-based task assignments, learner-machine dialogues, feedback, and adaptable digital environments are all crucial AI functions for learners. Zhang and Aslan (2021) included intellectual stimulation, richer learning materials, and participation as further AI facilitations. According to Southworth et al. (2023), one advantage of AIE is that it helps students develop their technical skills, creativity, critical thinking, and problem-solving ability experiences encourage skill development and maintain student progress in virtual worlds.

Impact of Artificial Intelligence Usage on the Academic Performance of Students

Artificial Intelligence (AI) has become a transformative force in education, significantly influencing the academic performance of students across different levels of learning. AI-driven educational tools provide personalized learning experiences, allowing students to learn at their own pace while receiving tailored feedback and recommendations (Zhang & Aslan, 2021). This individualized approach helps bridge knowledge gaps and improves comprehension, resulting in better academic outcomes.

One of AI's most notable contributions to student performance is its ability to offer adaptive learning environments. AI-powered platforms, such as intelligent tutoring systems, assess students' strengths and weaknesses and modify the curriculum accordingly (Chiu et al., 2023). These systems provide students with targeted learning resources, ensuring that they master fundamental concepts before progressing to more complex topics. Research has shown that students using AI-based adaptive learning platforms achieve higher test scores compared to those following traditional learning methods (Hopcan et al., 2022).

AI enhances student engagement by creating interactive and immersive learning experiences. Virtual reality (VR) and augmented reality (AR), powered by AI, simulate real-world scenarios, making abstract concepts easier to understand (Southworth et al., 2023). In STEM (Science, Technology, Engineering, and Mathematics) education, AI-based simulations allow students to conduct virtual experiments, which improve practical knowledge and problem-solving skills. This increased engagement often leads to improved academic performance (Asakura et al., 2020).

Another significant impact of AI on academic performance is its role in automating administrative tasks, allowing educators to focus more on teaching. AI tools assist in grading assignments, tracking student progress, and generating reports, which helps teachers provide timely feedback (Khosravi et al., 2022). When students receive prompt feedback, they can identify areas for improvement and make necessary adjustments, leading to better learning outcomes.

AI-powered chatbots and virtual assistants have also contributed to student success by offering instant academic support. These AI systems provide 24/7 assistance, answering questions, explaining concepts, and guiding students through difficult topics (Ouyang & Jiao, 2021). Such accessibility to learning resources reduces students' dependency on traditional classroom instruction and encourages independent learning, which positively impacts their performance.

AI's role in assessment and evaluation is another importan factor influencing academic achievement. AI-driven analytics tools analyze student responses and predict learning patterns, helping educators develop customized teaching strategies (Cope, Kalantzis & Searsmith, 2021). By identifying struggling students early, interventions can be put in place to prevent academic failure and improve performance levels.

For remote and online learners, AI provides essential learning support, especially in cases where traditional classroom instruction is unavailable. AI-driven platforms facilitate virtual discussions, peer collaboration, and self-paced learning (Li & Wang, 2023). In underprivileged areas, AI-powered mobile learning applications have helped bridge the digital divide, ensuring students receive quality education despite geographical or financial constraints.

However, despite AI's advantages, some concerns exist regarding its over-reliance in education. Critics argue that AI-based learning may lead to reduced human interaction and critical thinking skills, as students might become too dependent on AI for answers (Yang et al., 2022). Moreover, the ethical implications of AI in education, such as data privacy and potential biases in AI algorithms, need to be addressed to ensure fairness in academic assessment (Han, Park & Lee, 2022). Studies have also shown that AI's impact on academic performance varies depending on students' access to technology and digital literacy. While AI enhances learning for tech-savvy students, those lacking access to AI-powered tools may face educational disparities (Das et al., 2015). Governments and educational institutions must implement policies to ensure equal access to AI-driven education, preventing digital inequality from affecting student performance.

Another limitation of AI in education is its inability to fully replace human teachers. While AI can provide vast amounts of information, human educators play a crucial role in motivating students, fostering creativity, and addressing emotional and psychological aspects of learning (al-Zyoud, 2020). A balanced approach that integrates AI with traditional teaching methods is essential for maximizing academic benefits.

Looking ahead, the integration of AI in education is expected to continue evolving, with innovations in machine learning, natural language processing, and data analytics further enhancing learning experiences (Ley et al., 2023). As AI technology advances, its potential to improve academic performance will expand, provided ethical considerations and access disparities are effectively managed.

Challenges facing students in adopting Artificial Intelligence for learning

Artificial intelligence (AI) is broadly defined as a collection of systems that exhibit intelligent behaviour, involving environmental analysis and autonomous decision-making to achieve predefined goals (Boucher, 2020). AI is a branch of computer science attributed to machines and computers (Pan, 2016) and is designed to solve specific tasks across various fields, including education (Makridakis, 2017). Essentially, AI represents an automated form of human intelligence (Fenwick & Molnar, 2022). As digital transformation advances, AI has become an essential component of modern education, facilitating dynamic learning environments that leverage digital and information systems for knowledge dissemination (Escotet, 2023).

Despite the numerous opportunities AI presents in education, students face significant challenges in adopting AI-driven learning technologies. Although AI-powered tools such as Grammarly, ChatGPT, Brainly, Mendeley, and DeepL Write offer customized learning experiences, they also introduce barriers that impact students' ability to effectively integrate AI into their educational routines. One major challenge is accessibility and affordability. AI-driven learning tools often require high-performance devices and stable internet connections, which may not be available to all students, particularly those in underprivileged communities. This digital divide creates

disparities in learning experiences, limiting the benefits of AI for students with fewer resources (Escotet, 2023).

Another challenge is the dependency on AI for learning and critical thinking. As AI applications automate tasks such as summarizing texts, generating responses, and problem-solving, students may develop an over-reliance on technology rather than cultivating analytical and problem-solving skills independently. This could reduce their ability to think critically, engage in deep learning, and retain information in the long term (Pan, 2016).

Moreover, ethical and privacy concerns arise from the widespread adoption of AI in education. Many AI tools collect and store users' personal data, sometimes without explicit consent. This raises concerns about data security, privacy violations, and the potential misuse of students' information. Ensuring transparency and ethical AI usage remains a significant hurdle in educational settings (Gînguță et al., 2023).

Additionally, AI can sometimes limit human interaction and social engagement. Traditional learning environments emphasize direct interaction between students and educators, fostering discussions and collaborative learning. However, excessive reliance on AI-driven platforms may result in social isolation, reducing students' communication skills and teamwork abilities (Saghiri et al., 2022).

Another major issue is the adaptation of AI technologies to diverse educational needs. AI systems are often trained on datasets that may not fully represent all student demographics, leading to biases in learning recommendations and assessments. This lack of inclusivity may disadvantage certain students, particularly those from minority backgrounds or those with special learning needs. Furthermore, integrating AI into learning requires adequate digital literacy. Many students lack the technical skills necessary to effectively use AI tools, limiting their ability to maximize AI's potential. Without proper training and guidance, students may struggle to adapt to AI-driven learning environments, hindering their overall educational progress (Escotet, 2023).

Artificial Intelligence (AI) is increasingly being integrated into education to enhance learning experiences, but students face numerous challenges in adopting AI-driven tools. One major challenge is lack of technical skills and digital literacy. Many students, particularly in developing regions, struggle with understanding and using AI applications due to inadequate exposure to digital tools (Zawacki-Richter et al., 2019). AI-based learning systems often require students to have basic programming, data analysis, or algorithmic knowledge, which can be overwhelming for those without prior experience (Holmes et al., 2021). This skill gap can lead to inefficiencies and frustration, limiting the full potential of AI in education.

Another significant challenge is limited access to AI technology and infrastructure. AI-powered learning requires high-speed internet, advanced computing devices, and reliable electricity, which are not readily available to all students, especially those from low-income backgrounds (Selwyn, 2022). The digital divide creates inequality in education, as students with better resources can utilize AI for personalized learning, while others are left behind (Luckin, 2018). Furthermore, educational institutions may lack the necessary funding to implement AI systems at a large scale, preventing widespread adoption.

Privacy and data security concerns also pose a major obstacle to AI adoption in learning. Many AI tools collect and analyze students' personal data to provide tailored learning experiences, but this raises concerns about data breaches and misuse of information (Slade & Prinsloo, 2019). Students may feel uncomfortable sharing their personal learning patterns, especially if AI algorithms are used to assess their performance and progress (González & Muñoz-Merino, 2021). The ethical implications of AI in education require stronger regulations and policies to protect students' rights.

Additionally, over-reliance on AI tools may reduce critical thinking and creativity. While AI-based platforms offer personalized recommendations and automated feedback, excessive dependence on these tools can discourage students from developing problem-solving skills independently (Wang et al., 2020). For example, AI-driven essay generators or automated tutoring systems can make

students less inclined to engage in deep learning processes, thereby limiting their analytical abilities (Popenici & Kerr, 2017). It is crucial to maintain a balance between AI assistance and traditional learning methods to ensure holistic academic development.

Lastly, resistance to change and lack of proper training for AI integration hinder students' adoption of AI in learning. Many students and even educators are hesitant to embrace AI due to fears of replacing traditional teaching methods and skepticism about AI's effectiveness (Chatterjee & Bhattacharjee, 2020). Without adequate training programs to help students and teachers adapt to AI tools, their acceptance remains low (Zhai et al., 2021). Institutions need to implement structured AI literacy programs to ensure that students can use AI confidently and effectively in their learning processes.

Conclusion

Artificial Intelligence (AI) has emerged as a transformative force in education, reshaping the delivery, management, and outcomes of teaching and learning in business education. Its integration enables personalized learning, adaptive assessments, and administrative efficiency, while also equipping students with relevant 21st-century skills such as critical thinking, creativity, and problem-solving. By bridging gaps in traditional methods, AI enhances student engagement, promotes inclusivity, and prepares learners for the dynamic global workforce.

However, despite its numerous benefits, challenges persist. Issues such as affordability, accessibility, ethical concerns, digital literacy, and resistance to change continue to hinder its full adoption in business education. Furthermore, AI cannot completely replace the role of human educators, who remain vital in nurturing creativity, empathy, and moral development among students. A balanced, inclusive, and ethical integration of AI into business education is therefore essential.

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