

EXPLORING THE POWER OF ARTIFICIAL INTELLIGENCE (AI) IN STUDYING AND LEARNING BUSINESS EDUCATION FOR NATIONAL DEVELOPMENT

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ABSTRACT

This paper discusses the potential application of Artificial Intelligence (AI) in Business education curriculum to drive Nigeria's economic development, by explaining the intertwining relationship of AI, education, and economic development. This paper identifies opportunities for AI to enhance business education outcomes, develop a skilled workforce and stimulate economic expansion. However, it also highlights significant challenges, including infrastructural gaps, resource constraints, and policy limitations amongst others. It is hoped that, leveraging AI will unlock Nigeria's economic potential. In conclusion, As AI technologies continue to advance, business education will continue to evolve, embracing innovative solutions that foster lifelong learning and workforce empowerment. The study recommends amongst others that there should be adequate and incessant awareness creation of Artificial Intelligence. Awareness of the benefits of embracing AI should be continually highlighted in all Nigeria educational system. Stating fully the skills that would be learnt from the use of AI in the studying and learning of business education and how such skills can be used for national development.

Keywords: Teaching and learning, Artificial intelligence, Business education, Economic development.

Introduction

Nigeria's growing focus on technological innovation and economic diversification creates a fertile ground for adopting Artificial Intelligence (AI) in Business education curriculum. This convergence presents a dual-edged scenario: On one hand, AI offers unprecedented opportunities to cultivate a highly skilled workforce, aligning with the country's economic aspirations (Adeniran, 2023). On the other hand, the integration of AI in Nigerian educational institutions is hindered by significant obstacles, including inadequate infrastructure and insufficient training resources (Okoro & Eze, 2022). To unlock AI's transformative potential and drive Nigeria's economic growth, it is crucial to address these challenges and harness the power of AI in Business education curriculum.

In an age where technology perpetually reshapes the boundaries of teaching and learning process, the intersection of Artificial Intelligence (AI) and business education programme heralds a new era of innovation. The rapid advancement of generative AI technologies presents an unprecedented opportunity to revolutionize how

future business leaders are trained, think, and make decisions. Artificial Intelligence (AI) is rapidly transforming various industries, including education. AI as an aspect of information and communication technology is being used in educational management to enhance teaching and learning process, improve student outcomes, and streamline administrative tasks (Ukata & Agburuga, 2024). In recent years, AI has also made inroads into the education sector, particularly in educational management (Igbokwe, 2023). Exploring the power of AI can help improve the teaching and learning process, enhance teacher`s performances, student outcomes, and automate administrative tasks. Although the use of AI in teaching and learning is still in its early stages, moreover in Nigeria it has already shown promising results (Gupta, 2020). AI in schools offers multiple possibilities for school administrators, teachers, and students. One example is ChatGPT, the latest version, GPT-4, is integrated into software such as Microsoft Office, Edge, and Bing, optimizing educational tasks (Forero-Corba, & Negre Bennasar, 2024). AI and Machine Learning (ML) have been oriented towards educational tasks (Zafari, 2021), which highlights the need to strengthen Teachers' Digital Competence (TDC). AI as a technology in education is expected to grow significantly in the coming decades, presenting new opportunities and challenges (Surugiu, Gr?dinaru, & Surugiu, 2024; Khosravi, 2022). This Artificial Intelligence has also become an integral part of the education process, with materials and software equipped with skills such as abstract thinking, learning, adapting to new situations, interaction and mimicking intelligent beings. However, the use of these features and other active learning methods has found a place in the field of education, leading to an increasing number of studies utilizing artificial intelligence (Fitria, 2021). Artificial Intelligence and education are deeply intertwined, and this technology is impacting social interaction in every aspect. As a result, new teaching and learning approaches are being developed and tested in various contexts (Hasanov, Laine & Chung, 2019). Therefore, the use of technology in education will promote learning and increase success in all fields.

Conceptual Clarifications

Teaching and learning constitute an interconnected, reciprocal process where educators facilitate the acquisition of knowledge, skills, and behavior while learners actively construct understanding. Teaching is an attempt to assist people acquires knowledge, tools, entrepreneurship skills, attitudes, ideas or appreciation (Ukata, Wechie & Nmehielle, 2017). Teaching is also an interaction between teachers and students under the auspices of the teacher in order to bring about the expected change in the students' behavior (Ukata & Silas - Dikibo, 2019). Teaching is a great profession, it is an act of relating information to the learner or assisting in the learning on how to do something in a required manner (Ukata & Nmehielle, 2020). It is a process of assisting the learner to gain useful artificial intelligence skills, attitudes, ideas, values in a designed and undersigned environment that will help the learner become an acceptable person to the society as well as be independent in life. Teaching leads to learning. Teaching is an exchange of ideas between a teacher and students (learners) on what to learn, how to learn, what to use in learning and what to do with the learning (Ukata, 2019).learning is the process of acquiring new, relative, knowledge, behaviors, skills, values or attitude through experience studying or instruction.

Artificial Intelligence is a broad term that describes a range of technologies, machines, computers and methodologies such as language, data processing, neural network, machine language and algorithm. Popenici and Kerr (2017) defined artificial intelligence as a system that can do what human can do in terms of learning, use of data for different tasks, multitasking, synthesizing, analyzing and predictions. Baker and Smith (2019) defined artificial intelligence as computers that can perform mental assignments which relate to what humans do in education. Artificial Intelligence could also be referred to as the ability of a machine to imitate intelligent character or quality that helps a group of persons to function effectively and efficiently. AI is the theory and development of computer systems that are able to perform tasks requiring human intelligence, such as teaching,

visual perception, speech recognition, decision making, and translation between languages (Pattam, 2021).

Artificial intelligence is the science of making machines that can think and act like humans. AI is an advanced part of information and communication technology (ICT) which adopts the application of hardware and software in imitation to demonstrate what human beings can do with those technologies.

Business Education

Business education is a program designed to prepare students for the workforce by providing both theoretical and practical knowledge in business practices and pedagogy (Edeh & Olupayimo, 2023). According to Alabi (2022) business education is part of the total educational programme and also an aspect of vocational education. Business education has been known in the history of education in Nigeria. Business education is significant in the nation's development as it develops vocational skills, attitude and knowledge for employment and advancement in business career. Business education is a course that is offered at the universities, colleges of education and at secondary school level 'Business Studies'. The programme gives the mastery of teaching business courses. It is the acquisition and development of skills and competencies, and attitudes which are essential for effective economic system. This position was backed up by the national policy on education which emphasized the acquisition and development of appropriate skills and the development of the mental, physical and social abilities and competencies as attributes for individuals to live in and contribute to the development of the society (Federal Republic of Nigeria, 2004). The introduction of business education programme in tertiary institute is not just a welcome development but a step towards solving economic problem through imparting skills, knowledge and attitudes into the learners for job creation and employment opportunities. Business education also focuses on the retraining of workers who find their skills outdated as technology changes. This retraining allows workers to have contemporary skills for the jobs and thereby lead to competency in their jobs and the economy of the country at large. The attainment of competencies leads to the achievement of the needed vocational development right from the secondary school level. In all, the recipient will be equipped with the appropriate attitude, knowledge and skills to contribute in the labor market (Koko, 2015). Therefore, the aims of business education programme according to Koko (2015) are the following:

- i. To introduce students to the world of business.
- ii. To expose students with key business topics.

To enlighten students with numerous activities that takes place in the Nigerian business sector.

To provide students with a wide understanding of various business ideas in connection to science and technology.

To strengthen the student's capacity to improve his or her business management skills. Based on the definition of business education and its objectives, artificial intelligence is highly needed in order to perform academic and administrative functions faster and efficiently. Therefore, the adoption of artificial intelligence in business education is long overdue.

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). It is an education that theoretically and practically prepares the learners with the required skills needed at the global workplaces (Ukata, Adejola & Okoye, 2018). Business education programme is offered as a course in universities, colleges of education and as an option in the polytechnics (Ukata & Wechie, 2020; Ukata & Silas-Dikibo, 2020). Accordingly, running his list, Lynch cites current areas AI is explored in education which are applicable to business education programme to include but not limited to: Classroom/Behavior Management, Lesson Planning, Classroom Audio-Visual, Parent-Teacher Communication, Language Learning, Test

Prep, Assessment, Learning Management Systems, Gamification for Enhanced Student Engagement, Staff Scheduling and Substitute Management, Professional Development, Transportation, Maintenance, Finance, Cybersecurity, Academic Fraud Detection, Safety and Security (Onlinedegrees, 2024; Smith, 2021; Singh & Singh, 2021).

In other words, business education students must receive comprehensive, relevant, and up-to-date knowledge and skills to thrive in this technological era and remain competitive on a global scale. Business education programs encompass various fields, including Accounting, Office

Technology and Management (OTM), Marketing, Insurance, and Entrepreneurship. These disciplines provide foundational knowledge essential for any business operation. Therefore, it is vital for anyone pursuing a business education to acquire robust skills that will endure in the global job market. This underscores the importance of integrating artificial intelligence into the curriculum to successfully achieve the program's objectives.

Economic Development

Economic development refers to the process through which a country or region enhances its economic, social, and political well-being (World Bank, 2023). This development reflects a nation's progress toward achieving economic growth, reducing poverty, and improving the overall standard of living for its citizens. Ultimately, the goal of economic development is to create sustainable growth that raises the standard of living and well-being of the population (IMF, 2024). In recent years, Nigeria has faced various economic challenges including high unemployment rates, inflation and a significant dependence on oil exports. However, the country has also made efforts to diversify its economy and promote economic growth through various initiatives such as diversification of the economy, infrastructure development, human capital development, promoting entrepreneurship and innovation. Similarly, the country is focusing on developing its human capital, through investment in education, healthcare and skills training by promoting entrepreneurship and innovation through initiatives like business incubators, accelerators and funding programmes, hence, the need for integration of artificial intelligence into teaching and learning of education and Business education in particular being a skillbased. Although Nigeria's development planning is well structured on paper but weak in execution. The biggest gap is not ideas but implementation capacity. AI offers powerful opportunities to planning smarter, making system more transparent and make execution more accountable.

Benefits of Artificial Intelligence on Business Education Programme

The impact of Artificial Intelligence on business education programme cannot be overemphasized. Alabi (2022) posited some of the reasons business education programme could benefits from Artificial Intelligence which include some of the following:

Personalized learning: The application of Artificial Intelligence in personalized learning is considered a great opportunity. Lecturers have limited time and attention and therefore cannot teach each student individually. Artificial Intelligence does not have this limitation. This allows an Artificial Intelligence to better align education with the wishes of the students. As a result, the lecturer is better able to focus his or her attention on 'problem students', and the student goes through the curriculum at his or her own pace and level. The automation of tasks will proceed steadily. It is expected that such student will start with performing small tasks such as selecting and practicing course material. Improvements within adaptive learning systems through the implementation of deep learning algorithms could aid in these tasks.

Speed: If a student feels "stuck" while working on assignment, artificial intelligence programs can provide immediate, helpful assistance if the lecturer is not available. For instance, a student can ask, "How do I solve for X?" to be reminded of the steps for solving an equation. A student can even ask, "What are some effective strategies for improving my essay writing?" and ChatGPT can offer advice and resources right away.

Individualization: AI programs can help individualize learning opportunities for students. For instance, ChatGPT can quickly and easily translate materials to another language, making it easier for students who speak another language to understand assignments. ChatGPT can also revise materials so they are suitable for varying grade levels and tailor projects to suit students' skills and interests (Alabi, 2022).

Barriers of Artificial Intelligence on Business Education Programme

However, incorporating AI in business education also poses some challenges. These includes some of the following:

One of the main challenges is keeping the curriculum up-to-date. AI is a rapidly evolving technology, and new advancements are being made all the time. This means that Business Education programme must be constantly updating their curriculum to ensure that students are learning the most current information. Finally, there is a need for Business Educators to address ethical considerations surrounding AI. As AI is being integrated in more and more aspects of our lives, it is important that future business leaders are familiar with the ethical implications of AI and how to navigate them. This includes understanding the potential biases that can be built into AI systems and the potential negative impact on society and the workforce. Integrating Artificial Intelligence into Business Education Programme: A Catalyst for Placing the Graduates for 21st

Century Skills

Another challenge is ensuring that students have access to the necessary resources. Incorporating AI into the curriculum requires specialized equipment and software, which can be expensive. This can be a barrier for some students, particularly those from low-income backgrounds.

Bias: Artificial intelligence is only as knowledgeable as the information it has been trained on. If a program like ChatGPT is trained on biased information, then when a student asks it a question, they could get a biased response, which can perpetuate stereotypes and social inequalities. If a biased AI tool is used for grading, students could receive low grades based on their race or gender.

Errors: In addition to bias, artificial intelligence may generate misinformation. The data that AI draws from may have errors, be outdated, or spread misinformation. Neither students nor teachers should assume that information provided by AI is accurate.

Cheating: Students can use ChatGPT to write entire essays, answer quiz questions, or do their homework. Ironically, now there are AI programmes that can detect AI writing to help teachers determine if their students are cheating. But sometimes those programmes may falsely identify a student's original work as plagiarism.

Supporting this perspective, Siau (2018) highlights that AI is accompanied by several issues, despite its potential to improve the world. Some of these challenges include insufficient technological infrastructure, the high cost of integrating AI technologies into education, concerns regarding data privacy and security,

Additionally, Onyeanywuna and Ogona (2022) identified several other challenges, including inadequate power supply, unreliable internet services, insufficient support services, and a lack of digital skills. In Nigerian institutions, the availability of adequate infrastructure remains a significant challenge.

Finally, there is a need for business educators to address ethical considerations surrounding AI. As AI is being integrated in more and more aspects of our lives, it is important that future business leaders are familiar with the ethical implications of AI and how to navigate them. This includes understanding the potential biases that can be built into AI systems and the potential negative impact on society and the workforce.

Integrating Artificial Intelligence into Business Education Programme: A Catalyst for Placing the Graduates for 21st Century Skills

Artificial Intelligence (AI) is rapidly transforming the business landscape, and it is having a significant impact on business education programme. This is important because it equips future business leaders with the skills and knowledge necessary to navigate the rapidly changing business environment. In this article, we will explore the benefits and challenges of incorporating AI in business education programme and how it is shaping the future of the industry.

One of the main significant role of incorporating AI in business education programme is that it prepares students for the future of work. AI is already being used in a wide range of industries, from finance to healthcare, and it is expected to continue to grow in importance. By teaching students about AI, business education programme must equipped it recipients with the skills and knowledge necessary to succeed in the future job market. For example, students who understand how AI can be used to automate tasks and analyze data will be more valuable to employers than those who do not.

Another benefit of incorporating AI in business education programme is that it allows students to develop critical thinking and problem solving skills. AI is a complex and rapidly evolving technology, and understanding it requires a deep understanding of the underlying principles. By teaching students about AI, business education programme should focus on helping the students develop the ability to think critically and solve problems, which are valuable skills in any industry.

AI is also providing new opportunities for research and innovation in business education programme. By incorporating AI into research, business education programme can explore new areas of study and develop new insights into important business problems. For example, researchers can use AI to analyze large amounts of data and make predictions about consumer behavior, which can help businesses make better decisions.

Conclusion

Considering the global trend of technological advancement and the current economic situation in the country, the researchers assert the necessity of updating the Business education curriculum to incorporate AI-related courses. This enhancement will enable participants to foster creativity and innovation while acquiring skills essential for transforming the nation's economy. Furthermore, universal access to AI technologies would benefit both trainers and trainees by facilitating the integration of AI into Business education programs. In conclusion, the researchers believe that the benefits of incorporating AI into Business education far exceed the associated challenges. Nevertheless, to ensure that graduates of Business education programs can compete effectively in the global job market and contribute to Nigeria's economic development, it is imperative to address the challenges related to the integration of AI in teaching and learning. As AI technologies continue to advance,

business education will continue to evolve, embracing innovative solutions that foster lifelong learning and workforce empowerment. The integration of AI in business education programme heralds a new era of personalized, data-driven and dynamic learning experiences, paving the way for a future ready and resilient workforce.

Recommendations

It is very certain that the application of Artificial Intelligence in teaching and learning business education programme can have a positive impact in the economy. Therefore, recommendations are made as follows:

There should be massive design, development and implementation of Artificial Intelligence based tutoring systems for teaching and learning process in all institutions of learning.

The Nigerian Federal Government should deliberately fund artificial intelligence projects for sustainability in education and the lecturers should be well represented and actively involved in policy making and deliberation on the project.

There should also be adequate and incessant awareness creation of Artificial Intelligence. With subsequent upgrades as technology advances. Academic and administrative staff should be exposed to training and retraining in the use of artificial intelligence in delivering of their services in order to achieve improved operational efficiency where the technology is to be adopted.

Academic and administrative staff should also be exposed to training and retraining in the use of AI because teachers cannot give what they don't have.

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