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SKILLS NEEDED BY BUSINESS EDUCATION GRADUATES FOR EFFECTIVE USE OF ARTIFICIAL INTELLIGENCE SYSTEM FOR WORKPLACE PERFORMANCE IN NIGERIA

Esther Ekene Osahor
esther.osahor@unidel.edu.ng
Department of Business Education
Faculty of Education, University of Delta, Agbor
&
Samson Oghenefiemo Okoro
okorosamson2018@gmail.com
Department of Business Education, Faculty of Education
Ignatius Ajuru University of Education
Rumuolumeni, Port-Harcourt
&
Better Amadinna
kingsleybetterluv21@gmail.com
Department of Business Education, Faculty of Education
Ignatius Ajuru University of Education
Rumuolumeni, Port-Harcourt

Abstract
The increasing adoption of artificial intelligence (AI) systems in the workplace has brought significant changes to how business operations are executed, requiring a shift in the skill sets demanded of graduates. This study examines the essential skills that Business Education graduates must acquire to effectively utilize AI systems and enhance their workplace performance in Nigeria. Recognizing the evolving nature of modern business environments, the study explores how competencies such as critical thinking, cognitive and analytical skills, digital literacy, communication, and entrepreneurial intelligence play a vital role in aligning graduate capabilities with the demands of AI-powered workspaces. The findings are expected to guide curriculum reforms, inform policy decisions, and provide practical insights for preparing Business Education graduates to contribute meaningfully to AI-integrated industries. Ultimately, the study supports the advancement of a more competitive, future-ready workforce in Nigeria's digital economy.

Keywords: Artificial Intelligence, Skills, Business education, workplace

Introduction

The world of work is rapidly changing, driven by the growing influence of advanced technologies such as artificial intelligence. In this evolving landscape, the expectations placed on graduates are no longer limited to theoretical knowledge or routine skills. Rather, there is a rising demand for individuals who can interact with intelligent systems, analyze data, and contribute meaningfully to innovation and productivity. For graduates of Business Education, this reality presents both a challenge and an opportunity. While the foundation of their training may be rooted in business principles and instructional methods, there is a pressing need to expand their competencies to include those that align with the use of emerging technologies.

Artificial intelligence systems are now integrated into many areas of modern business operations, including customer service, financial analysis, marketing, and decision support. As these tools continue to shape the future of work, the ability to use them effectively has become a critical factor for job readiness and career advancement. Business Education graduates are expected to adapt to these changes and demonstrate practical proficiency in AI-enabled environments. This calls for a clear understanding of the specific skills they need to possess, such as digital literacy, data-handling, decision-making using intelligent tools, and the ability to collaborate in tech-driven teams.

Concept of Business Education

Business education has been recognized as an important discipline that plays a very important part in providing individuals with the ability to function effectively in the business world. It involves the acquisition of knowledge, skills, understandings, and attitudes to perform in the world of business as a producer and/or consumer of goods and services that the business offers. Olaniyan and Ttiloye (2012) observed that business education programmes represent a broad and diverse discipline that is included in all types of educational delivery systems – elementary, secondary and post-secondary. It includes education for office occupations, business teaching, business administration and economic understanding. It is an integral part of general education which involves the acquisition of practical skills, attitudes, understanding, and knowledge of occupations in various sectors of the economy. Otijole in Olaniyan and Titiloye (2012) noted that business education plays a dual role of preparing individuals for gainful and useful employment after leaving school as well as educating them to be intelligent consumers of the goods and services of business. Utoware and Edionwe (2022) said that business education is the education for the acquisition and development of skills and competencies, attitudes and attributes which are necessary for efficiency of the economic system. Ulinfun in Aliyu (2021) viewed business education as education for business or training in professional skills that are required for use in business offices, clerical occupations, and the workplace.

Research by Enundu et al. (2021) found that students entering universities with prior exposure to business-related coursework, including office practice and commerce, demonstrate higher academic self-efficacy and perform better in Business Education majors. Students benefit from prior exposure to foundational subjects such as:

- **Financial Accounting** helps prepare learners to handle financial records, analyze transactions, and understand the basis of business reporting.
- **Commerce** introduces trade systems, banking, insurance, transportation, and commercial operations—essential for grasping how businesses function in the broader economy.

- **Economics** provides insight into market forces, resource management, and decision-making, equipping students to understand supply and demand dynamics in business contexts.
- **Office Practice** teaches clerical and administrative skills, including correspondence, filing, and office management—vital for real-world business environments.
- **Mathematics and English Language** are crucial for logic, numeracy, and effective communication, all core to business contexts.

A study by Enendu and Nwosu- Chukwudi (2022) notes that business educators view early mastery of financial and commercial subjects as critical for students' adaptability and success in advanced business modules, especially in accounting and commerce. Those with strong pre-tertiary backgrounds in these fields significantly outperform peers who lack them.

Concept of Artificial Intelligence

Artificial Intelligence (AI) refers to the simulation of human cognitive processes by machines, particularly computer systems, to perform tasks that typically require human intelligence. These tasks include reasoning, learning, decision-making, problem-solving, perception, and language understanding. AI systems operate by processing large amounts of data, identifying patterns, and making autonomous decisions based on predefined algorithms and learned experience. With continuous advancements, AI has moved beyond theoretical frameworks and has become a practical tool across multiple sectors, including healthcare, education, banking, and manufacturing. According to Kaplan and Haenlein (2019) defineds AI as systems to interpret external data and to learn and use those learnings to achieve a specific goal or task via adaptation. As a result, we can now create systems capable of learning how to perform tasks on their own. These systems can achieve superhuman performance in a wide range of activities. Artificial Intelligence (AI) is the technology that seeks to assist humans in thinking. In fact, depending on the context, whether narrow or broad is considered to think of humans (World Economic Forum, WEF 2017).

In business and education, AI has been widely adopted for automating administrative tasks, supporting data-driven decisions, enhancing customer engagement, and improving operational efficiency. Machine learning, which is a major subset of AI, allows systems to learn and improve from data without explicit programming. This skill makes AI highly adaptable and valuable in dynamic environments such as the workplace, where data is continuously generated and processed (Huang & Rust, 2021). As AI tools become more accessible, organizations now expect graduates to interact effectively with these systems, understand their functionalities, and apply them strategically to solve real-world problems.

AI also influences how individuals work and make decisions, as it enhances productivity by reducing the time spent on routine tasks. For example, AI-powered chatbots and virtual assistants have become common in customer service departments, where they handle inquiries, process orders, and provide technical support with minimal human intervention. These tools improve response time and accuracy, enabling businesses to offer better service and achieve higher satisfaction rates (Wamba-Taguimdje et al., 2020). Additionally, AI supports strategic business functions by offering predictive analytics, which helps organizations anticipate market trends, optimize operations, and make informed choices based on evidence.

As the presence of AI in business operations grows, so does the need for professionals who are not only familiar with their applications but can also use it ethically and effectively. Understanding the concept of AI is, therefore, a foundational requirement for Business Education

graduates, particularly in a competitive and technology-driven job market. Their ability to work alongside intelligent systems will be essential for maximizing workplace performance and sustaining organizational innovation (Zhu & Hu, 2022).

AI impact on the teaching and learning process

Dealing with the impact of AI on teaching and learning in higher education, it is evident that AI will impact higher education in many ways and mainly in two focal areas: enrollment and curriculum (Taneri, 2020). For instance, Ma and Siau (2018) maintain that AI will speed up consistency and accuracy in curriculum and registration. Furthermore, according to Ma and Siau (2018), human sciences and liberal arts majors will become more popular because these areas of study are less vulnerable to the field of AI than other areas, such as accounting and finance (Ma & Siau, 2018).

Although this study is essential for a load of information on the influence of AI on higher education, it can be criticized for not tackling the issue genuinely, as the impact is much more profound. Indeed, focusing on the learning and teaching process, no one would doubt that AI is replacing the lecturer or tutor in many ways, such as blended learning and e-learning. The presence of an e-learning lecturer is limited as the learner interacts with a virtual classroom, whether on Blackboard, Moodle, Turnitin or any other platform (Jlu & Laurie A, 2018). Equally, Professor Roland (2018) believes that AI is meant to revolutionize how we learn, teach, work, live, make decisions, and be ready for the AI era. Therefore, AI is not only about its superficial effect, but about radical changes in the teaching and learning process in depth (Chin, 2018).

The increasing integration of artificial intelligence into workplace environments has transformed how businesses operate and how professionals interact with technology. From data analysis and automation to intelligent decision-making, AI systems now play a central role in improving efficiency and productivity across various sectors. For Business Education graduates, particularly those seeking employment or already working in Nigeria, adapting to these changes is no longer optional but it is essential. The traditional business functions they are trained for are now increasingly powered by smart systems that require more than just foundational business knowledge.

To remain relevant and competitive, these graduates must align their competencies with the demands of the modern workplace, where artificial intelligence is used to manage information, communicate insights, and support strategic decisions. This shift demands a new set of abilities that go beyond theoretical knowledge to include hands-on skills that enhance performance in AI-driven environments. Before these graduates can fully benefit from the opportunities created by intelligent systems, they must first understand and develop the right skills that make them capable of operating, managing, and innovating with AI tools in real business contexts.

Most of the skills that are mostly needed for effective workplace performance are explained below;

Critical Thinking skills

Critical thinking skills are among the most essential competencies required for effective workplace performance, particularly in environments where artificial intelligence systems are integrated into daily operations. These skills allow individuals to analyze information objectively, assess the validity of sources, identify patterns, solve problems logically, and make sound decisions under pressure. In today's data-driven workplaces, graduates who possess strong

critical thinking skills can more effectively interpret AI-generated insights and align them with business goals and ethical considerations. The ability to think critically becomes even more valuable when employees are faced with complex data sets, algorithmic outputs, or automated recommendations that require human judgment to validate. AI systems, while powerful, are not immune to bias or limitations, and as such, human oversight remains crucial. Critical thinkers can question assumptions, recognize potential flaws in AI-driven conclusions, and provide meaningful feedback that enhances decision quality (Paul & Elder, 2021). In this way, critical thinking serves as a safeguard against blind reliance on automated tools. Incorporating critical thinking into AI-supported roles also enhances collaboration between humans and machines. For instance, business professionals often need to assess customer behavior trends suggested by AI or evaluate predictive models used in financial forecasting. Without critical thinking, there is a risk of accepting outputs at face value, which could lead to poor decisions or unethical consequences (Dwyer et al., 2020).

Therefore, graduates must be trained not only to use intelligent systems but also to question and interpret their outputs thoughtfully and responsibly.

Moreover, critical thinking supports adaptability in fast-paced environments where AI tools evolve rapidly. Business Education graduates who can assess new systems, learn their features, and determine their relevance to business tasks are more likely to remain effective and valuable in the workplace. As AI continues to shape professional practice, individuals with critical thinking capabilities are positioned to lead innovation, troubleshoot problems, and drive continuous improvement in organizations (Zhang & Huang, 2022).

Social and Communication Skills

Social and communication skills are foundational to effective workplace engagement, especially in settings where human collaboration and technology intersect. As artificial intelligence systems become more embedded in business operations, the ability to communicate clearly, work collaboratively, and maintain strong interpersonal relationships become increasingly vital. These skills support teamwork; help bridge the gap between technical outputs and business objectives and foster an environment where human judgment complements machine intelligence.

Communication skills enable Business Education graduates to convey insights derived from AI tools to different audiences, including clients, colleagues, and management. Often, AI-generated data requires interpretation and translation into actionable strategies. Professionals who can present this information clearly, both verbally and in writing, add immense value to decision-making processes. Additionally, strong communication ensures that misunderstandings about data, system capabilities, or technical outcomes are minimized (Garcia-Murillo & MacInnes, 2021). This is especially important in workplaces where cross-functional teams must work together to apply AI solutions effectively. Social skills, which include empathy, active listening, negotiation, and cultural awareness, are equally important. AI systems may manage tasks, but it is people who collaborate, lead, and resolve conflicts. In diverse and technology-driven work environments, professionals who exhibit emotional intelligence and interpersonal competence are better able to foster collaboration, build trust, and manage team dynamics (Kshetri, 2021). These attributes help professionals not only to work well with others but also to lead and influence within the organization.

Moreover, effective social and communication skills support ethical decision-making and user-centered design in AI applications. Business professionals must often engage in discussions

about data privacy, algorithmic fairness, or consumer impact. In such cases, the ability to articulate concerns, listen to stakeholders, and advocate for responsible practices is essential. Thus, these skills are not only about interpersonal interactions but are also connected to the broader responsibility of ensuring that technology serves people fairly and transparently (George et al., 2020).

As the workplace continues to evolve under the influence of AI, social and communication skills will remain crucial for integrating technology into human systems, enhancing collaboration, and driving shared success.

Cognitive and Analytical Skills

Cognitive and analytical skills are increasingly essential for navigating the complexities of modern workplaces that integrate artificial intelligence (AI) systems. These skills refer to the mental processes involved in acquiring knowledge and understanding through thought, experience, and senses, while analytical skills relate to the capacity to interpret data, identify patterns, and draw logical conclusions from available information. In the context of AI, cognitive and analytical abilities allow professionals to interpret outputs, make evidence-based decisions, and improve operational efficiency through informed insights.

As AI systems continue to evolve, their application in data-driven tasks such as forecasting, trend analysis, and automation requires human users who can critically evaluate the information presented. Business Education graduates who possess strong cognitive and analytical skills are better equipped to determine the relevance, accuracy, and implications of AI-generated insights. This is crucial because AI tools often provide data at a speed and scale beyond human capacity, but without the ability to evaluate that data thoughtfully, the benefits may not be fully realized (Chatterjee et al., 2022). The human element remains necessary to assess risk, consider alternative outcomes, and align AI findings with organizational goals.

Moreover, these skills are vital in problem-solving and decision-making processes, where professionals are often expected to assess multiple scenarios and select the most viable option. AI can support this by offering predictive models, but the interpretation and contextualization of these predictions depend on human reasoning. Business professionals with strong analytical thinking can determine how AI insights impact budgeting, marketing, or client engagement strategies, ensuring that technological tools complement rather than replace human judgment (Bawack et al., 2022).

Cognitive flexibility, which allows individuals to adapt to new situations and learn new systems quickly, is also a crucial component. In dynamic business environments such as those found in Delta State, where AI technologies are increasingly integrated into daily functions, adaptability enhances employee value. Business Education graduates who demonstrate the capacity to think analytically and adjust to changing tools and systems are more likely to succeed and lead innovation in their organizations (Nguyen et al., 2023).

In summary, cognitive and analytical skills enable Business Education graduates to effectively engage with AI systems by processing complex information, making strategic decisions, and improving business performance through intelligent insights. These competencies are not just desirable—they are indispensable for future-ready professionals in the AI-enhanced workplace.

Technical and Digital Skills

Business Education graduates today must possess a robust set of technical and digital skills to effectively utilize artificial intelligence (AI) systems in the workplace. In an era where AI is redefining business operations, understanding how these technologies function is not just a luxury but a necessity. Digital literacy, for instance, enables graduates to interact with AI-powered platforms, interpret information accurately, and apply digital tools in solving real-world business problems. It forms the foundation upon which more advanced competencies, such as AI tool usage and data analysis, are built (Ajani & Adedokun-Shittu, 2021).

Data literacy is another essential skill, as AI systems thrive on data. Business Education graduates are expected to collect, clean, interpret, and use data meaningfully. This ability allows them to make informed decisions based on AI-generated insights, detect trends, and optimize business strategies. Furthermore, data literacy enhances graduates' capacity to collaborate with automated systems and validate AI outputs critically. Without such skills, the interaction with AI becomes mechanical and devoid of strategic value (Molnar & Kearney, 2021).

Closely tied to data literacy is AI literacy, which encompasses understanding how AI algorithms operate, their limitations, and their appropriate use. Graduates with AI literacy can interact intelligently with AI interfaces, use machine learning tools, and adapt to the evolving demands of digital workplaces. AI literacy also encourages responsible and ethical use of AI technologies, which is increasingly critical in maintaining trust and transparency in data-driven organizations (Kimmons, Rosenberg & Allman, 2020).

Another crucial skill is proficiency with automation and business intelligence tools such as Microsoft Excel, Power BI, Tableau, and Google Analytics. These platforms often incorporate AI elements that assist in forecasting, visualization, and performance tracking. Business Education graduates who master these tools can automate repetitive tasks, interpret dashboards, and generate real-time reports that guide strategic decision-making. This technical know-how increases operational efficiency and reduces dependency on specialized IT personnel (Zawacki-Richter, Marín, Bond & Gouverneur, 2020).

Cybersecurity awareness is equally important. As AI systems often manage sensitive business data, graduates must be equipped with basic knowledge of data protection, recognizing phishing attempts, and understanding how to ensure secure use of AI platforms. Without such skills, misuse or mishandling of data can lead to significant legal and ethical consequences for organizations (Gleason, 2021).

Finally, the ability to communicate and collaborate through digital platforms is indispensable. AI-enhanced tools like Zoom, Microsoft Teams, and collaborative platforms such as Slack have transformed workplace interaction. Business Education graduates must be adept at using these platforms not just for communication but for integrating AI-generated content into collaborative workspaces. This digital fluency ensures they remain relevant and competitive in technology-driven work environments (Gleason, 2021).

Entrepreneurial and Business Intelligence Skills

Entrepreneurial and business intelligence skills have become essential for Business Education graduates seeking to navigate the increasingly complex and data-driven workplace environment. These skills enable individuals not only to adapt to technological changes but also to leverage emerging tools such as artificial intelligence (AI) in identifying opportunities, solving problems, and driving innovation. Entrepreneurial thinking encourages graduates to approach challenges creatively, evaluate risks strategically, and design solutions that create value in

diverse professional contexts. In the digital age, this mindset is indispensable for initiating startups, managing innovation in established organizations, and responding to changing market conditions (Aldrich & Zimmer, 2021).

Business intelligence skills, on the other hand, focus on the systematic analysis and interpretation of business data to support decision-making. The integration of AI into business intelligence systems has made it possible for graduates to access real-time insights, forecast trends, and detect patterns that would be otherwise invisible through manual processes. These insights enable organizations to optimize operations, improve customer experience, and gain competitive advantages. Business Education graduates equipped with such skills are better positioned to contribute meaningfully to strategic planning and performance measurement (Zhu & Hu, 2022).

AI technologies such as machine learning algorithms, predictive analytics, and natural language processing have transformed how businesses understand consumer behavior, market dynamics, and operational efficiency. Therefore, the ability to work with business intelligence tools like Power BI, Tableau, SAP Analytics Cloud, and Google Data Studio has become a necessity rather than an added advantage. These tools require users to not only manipulate data but also to extract actionable insights that inform leadership decisions. As a result, business graduates must learn to interpret data dashboards, communicate findings effectively, and apply evidence-based thinking in proposing business solutions (Wamba-Taguimdje et al., 2020).

Moreover, entrepreneurial skills intersect with business intelligence when graduates use AI-generated insights to explore new markets, launch digital ventures, and develop customer-centric products and services. AI empowers entrepreneurs to simulate business scenarios, evaluate product-market fit, and test marketing strategies virtually before investing heavily. Business Education graduates who can blend entrepreneurial acumen with data-driven reasoning are more capable of initiating sustainable business ventures and responding to real-time shifts in customer demand and economic trends (Ransbotham et al., 2020).

Conclusion

AI is a complex and multifaceted field that encompasses a wide range of disciplines, including computer science, mathematics, engineering, and behavioural and social sciences. A transdisciplinary approach allows for the integration of knowledge and perspectives from different fields, which is essential for understanding the full range of implications and applications of AI. With its interdisciplinary approach, this paper joins the ongoing discourse to the extent to which the implementation of AI systems in organizations has and will continue to have an impact on the nature of work in the coming decade. A thorough and critical examination of the literature gathered shows that Artificial Intelligence will soon take over the organization. The questions that seem to be answered by the educational sector are: Are they ready for the change through effective implementation of diverse skill-based courses into the curriculum of vocational education courses, especially Business education?

Suggestions for further studies

The following suggestions may be helpful for future studies, including;

1. Scholars should focus on the level of AI technology adoption and how it shapes the skills needed for AI employment and training development as part of the school curriculum integration for Business education students.

2. Academic staff should be well-trained in using AI to equip Business education students with the required skills to face future career prospects after graduation.
3. Governments at all levels should make available funds for tertiary institutions offering Business education to make available the needed equipment and facilities that would enhance the effective teaching and learning process.

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