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DIGITAL AND FUTURE-SKILL INTEGRATION IN BUSINESS EDUCATION FOR DIGITAL ECONOMY PARTICIPATION IN ANAMBRA STATE, NIGERIA

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Abstract

Digital and future-skill integration in business education has emerged as a critical determinant of economic growth in knowledge economies. Yet, the extent to which business education programmes in developing sub-national contexts operationalize this integration remains inadequately documented. This study examined digital and future-skill integration in Business Education during the 2024/2025 academic session for Digital Economy Participation in Anambra State, Nigeria. Specifically, the study assessed the extent of digital literacy integration in Business Education curricula, examined the integration of future workplace skills in Business Education programmes, and analysed the level of institutional support for digital and future-skill integration. A descriptive survey research design was adopted. The population is 453 comprising 158 business education lecturers and 295 final-year business education students in tertiary institutions offering Business Education programmes in Anambra State. Using Taro Yamane's formula, a sample size of 212 was determined. Stratified random sampling was employed in selecting the sample units. Data were collected using a structured questionnaire and analysed using mean and standard deviation, with a criterion mean of 2.50 on a four-point scale. The findings revealed that digital literacy integration in Business Education curricula is at a low extent (cluster M = 2.27), future workplace skills are integrated at a high extent (cluster M = 2.52), and institutional support for digital and future-skill integration is at a low extent (cluster M = 2.30). The study concluded that despite relative progress in embedding conventional future workplace competencies, foundational deficits in digital literacy integration and institutional support constrain graduates' preparedness for digital economy participation in Anambra State. It was recommended, among others, that curriculum regulatory bodies mandate a comprehensive restructuring of Business Education curricula to embed digital literacy systematically, that institutions develop a structured future workplace skills framework addressing identified gaps in digital problem-solving, and that the state government establish a dedicated fund to strengthen digital infrastructure and faculty development in Business Education departments.

Keywords: *Business education, digital literacy, future workplace skills, institutional support, economic growth, Anambra State Nigeria*

Introduction

Economic growth in the 21st century has become increasingly intertwined with the development of a digitally competent workforce. Digital technologies contribute substantially to productivity, innovation, and competitiveness globally (Bello et al., 2025; Khan et al., 2022), and the World Economic Forum (2023) estimates that approximately 230 million jobs across Africa will require some level of digital skills by 2030. Such competencies are especially critical in developing economies, where the digital economy holds promise for addressing structural unemployment, fostering entrepreneurship, and enhancing labour market outcomes. Yet, the extent to which education systems prepare graduates for these realities remains uneven, particularly in vocationally oriented programmes such as business education.

Business education, traditionally focused on foundational business concepts and administrative competencies, is being reshaped by the demands of digital transformation. Graduates are now expected

to demonstrate proficiency in digital literacy, data analytics, online collaboration, and emerging technologies. Studies show that integrating digital skills into business education curricula enhances students' acquisition of critical 21st-century competencies such as problem-solving, communication, creativity, and self-regulated learning (Abubakar et al., 2025; Okonkwo & Agwazie, 2023). Nevertheless, curricular integration often remains superficial or inconsistent, limiting graduates' ability to contribute meaningfully to economic growth.

The UNESCO (2018) framework defines digital literacy as the ability to access, manage, understand, integrate, communicate, evaluate, and create information safely through digital technologies for employment, decent jobs, and entrepreneurship. Despite global recognition of this imperative, a significant digital skills gap persists, with workforce demands for digital competencies outpacing educational system capacity to deliver them (Khoza & Singh, 2021). Employers consistently report that digitally skilled individuals perform better and are more productive (Khoza & Singh, 2021), while Khan et al. (2022) established that approximately 8 out of 10 mid-skill workers now require a degree of digital competence. Without comprehensive digital literacy integration, graduates' risk being inadequately prepared for digitalised labour markets, making curricular reform a national imperative rather than merely an academic exercise (Nair, 2021).

Beyond digital literacy, future workplace skills including critical thinking, collaboration, adaptability, and digital problem-solving represent a further critical dimension of integration. The World Economic Forum's Future of Jobs Report (2023) highlights a major shift in global employment trends, with 85 million jobs expected to be displaced by automation while 97 million new roles will emerge primarily in technology, healthcare, and business innovation (Attah, 2025). Nigerian employers specifically identify critical thinking, digital literacy, and creativity as the most important employability skills (Oguguo et al., 2020; Rios et al., 2020). As Dede (2010) argues, technology must be used strategically to develop future-ready competencies, including emotional intelligence, inquiry and problem-solving skills, and entrepreneurial capabilities, rather than simply added to existing teaching methods.

The successful integration of digital and future skills depends heavily on institutional support mechanisms, including infrastructure provision, trained personnel, policy frameworks, and professional development opportunities. Inadequate infrastructure and weak policy alignment undermine curriculum innovation and skill development goals (Abubakar et al., 2025). In Africa broadly, infrastructure deficits remain a fundamental barrier to digital transformation, with lack of electricity, poor ICT-ready teacher capacity, and inadequate digital content creation skills collectively hindering progress (ADEA, 2024). In Nigeria specifically, only 35% of schools are connected to power supply and that supply is erratic (World Economic Forum, 2020), while the World Bank (2020) identifies limited digital skills in curricula as a driver of digital exclusion. At the national level, Nigeria has recognised digital transformation as a priority through the National Digital Economy Policy and Strategy (NDEPS) 2020-2030 and the 3 million Technical Talent (3MTT) Programme, focusing on software development, machine learning, UI/UX design, and data analysis (World Economic Forum, 2024; U.S. International Trade Administration, 2024). Despite these initiatives, Nigerian employers argue that a staggering number of fresh graduates lack workplace-ready skills, with less than 10% starting businesses due to inadequate practical competencies (Attah, 2025; World Bank, 2021).

In Anambra State, growing recognition of the importance of aligning business education with digital economic imperatives is evident. Research by Ndubuisi et al. (2025), examining four tertiary institutions in the state, found that digital skills were highly needed in business education programmes for digital economy development. The strategic priority placed on digital transformation at the sub-national level is further evidenced by official records from the Anambra State ICT Agency (2025), which document the state's recognition for excellence at the 13th National Council on Communications, Innovation and Digital Economy (NCCIDE). Specifically, the state secured top honors for ICT Human Capital Development and Overall Performing State in ICT Development. However, while these accolades signal robust policy-level commitment, a critical gap persists in translating these macro-level achievements into functional instructional integration within specialized academic programs like Business Education. Digital transformation has further been shown to be

positively correlated with SME performance and innovation within the state, though skills gaps and infrastructure deficits remain significant challenges (Ejiofo et al., 2021).

Despite these national and state-level efforts, a significant research gap exists regarding the empirical linkages between digital and future-skill integration in business education and economic growth outcomes at the sub-national level. No comprehensive study has systematically investigated how digital literacy content, future workplace skills integration, and institutional support mechanisms collectively influence economic growth prospects through business education graduates in Anambra State.

Research on curricula in the state further reveals that tertiary institutions remain heavily theory-bound while professions increasingly demand technological agility and adaptive problem-solving (Ezeokafor, 2025), underscoring the urgency of curricular realignment anchored on industry co-creation and digital capacity building. This study addresses this gap by systematically assessing all three dimensions, thereby contributing empirical evidence to inform curriculum reform and policy development in Anambra State and similar contexts across Nigeria and Africa.

Statement of the Problem

Business education programmes are expected to equip graduates with digital literacy competencies, future workplace skills, and the adaptive capacities necessary for participation in technology-driven economies. Ideally, curricula would systematically integrate digital tools and platforms, embed critical thinking, collaboration, and problem-solving competencies, and operate within institutions providing adequate infrastructure, trained faculty, and supportive policy frameworks. Such alignment would enable graduates to contribute effectively to economic productivity, entrepreneurship, and innovation.

The current situation in Anambra State presents uncertainty regarding the extent of this alignment. The degree to which business education curricula have operationalized digital literacy integration remains unclear, future workplace skills appear to be addressed inconsistently across programmes, and institutional support mechanisms, including infrastructure, faculty competence, and policy frameworks, vary considerably. These variations suggest potential gaps between curriculum intentions and graduates' actual preparedness for digital work environments.

The consequences of these gaps are significant. Graduates lacking digital and future-skill competencies face diminished employability in digitalised labour markets, limited capacity for digital entrepreneurship, and reduced ability to contribute to organisational innovation. This skills deficit perpetuates youth unemployment, constrains the workforce development necessary for economic diversification, and creates inequality as digital economy benefits accrue unevenly. For Anambra State, such misalignment undermines both human capital development and the sustainability of the state's ongoing digital transformation initiatives.

The problem is compounded by the absence of systematic empirical evidence on these three dimensions within business education programmes in Anambra State. Without such evidence, policymakers and educational administrators lack the contextual basis for targeted curriculum reform, resource allocation, or progress monitoring. This study addresses this gap by examining digital literacy integration, future workplace skills incorporation, and institutional support levels, providing the empirical foundation necessary for informed decision-making toward economic growth objectives. The study period was during the 2024–2025 academic year.

Purpose of the Study

The specific objectives of this study were to:

1. Assess the extent of digital literacy integration in Business Education curricula for digital economy participation in Anambra State, Nigeria.

2. Examine the integration of future workplace skills in Business Education programmes for digital economy participation in Anambra State, Nigeria.
3. Analyse the level of institutional support for digital and future-skill integration in Business Education for digital economy participation in Anambra State, Nigeria.

Research Questions

The following research questions guided the study:

1. What is the extent of digital literacy integration in Business Education curricula for digital economy participation in Anambra State, Nigeria?
2. What is the extent of integration of future workplace skills in Business Education programmes for digital economy participation in Anambra State, Nigeria?
3. What is the level of institutional support for digital and future-skill integration in Business Education for digital economy participation in Anambra State, Nigeria?

Method

A descriptive survey research design was adopted for the study to assess current trends during the 2024/2025 academic year. This was appropriate given the aim of systematically describing the current state of digital and future-skill integration in Business Education without manipulating variables. The area of the study was Anambra State, Nigeria, which comprises three senatorial zones: Anambra Central, Anambra North, and Anambra South. The state was selected on account of its leadership in digital economy development within Nigeria and the growing imperative to align its educational programmes with digital transformation goals.

The population is 453 comprising 158 lecturers and 295 final-year Business Education students from the four tertiary institutions offering the programme in Anambra State, namely: Nnamdi Azikiwe University, Chukwuemeka Odumegwu Ojukwu University, Federal College of Education (Technical), Umunze, and Nwafor Orizu College of Education, Nsugbe. Using Taro Yamane's formula, a sample size of 212 was determined. Stratified random sampling was employed in selecting the sample units. The instrument for data collection was a researcher-developed structured questionnaire titled Digital and Future-Skill Integration in Business Education Questionnaire (DFSIBECQ). The instrument consisted of 30 items structured on a four-point response scale of: Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1), corresponding to High Extent (HE) and Low Extent (LE) using a criterion mean of 2.50. While a four-point scale was used, the results were interpreted using a criterion mean of 2.50 to provide a clear benchmark for "High" versus "Low" extent integration in line with established educational research standards in Nigeria.

The instrument was face and content validated by three experts: two in Business Education and one in Measurement and Evaluation, all from tertiary institutions in Anambra State. Their observations and suggestions were used to revise the instrument. Reliability of the instrument was established using Cronbach's Alpha coefficient, which yielded a reliability index of 0.82, indicating a high level of internal consistency. The questionnaire was administered to respondents with the assistance of research assistants and retrieved on the spot to ensure a high response rate. Data collected were analysed using mean and standard deviation. Items with mean scores of 2.50 and above were accepted as High Extent (HE), while items below 2.50 were rated as Low Extent (LE).

Results

Research Question 1: What is the extent of digital literacy integration in Business Education curricula for digital economy participation in Anambra State, Nigeria?

Table 1: *Mean Ratings of Respondents on the Extent of Digital Literacy Integration in Business Education Curricula for digital economic participation in Anambra State, Nigeria*

S/N	ITEM	MEAN	SD	REMARKS

1	Digital literacy skills are explicitly included in course outlines.	2.23	0.73	LE
2	My courses regularly require me to use digital tools.	2.29	0.71	LE
3	The curriculum includes dedicated modules or units specifically focused on teaching digital skills.	2.19	0.81	LE
4	Lecturers incorporate digital platforms into their teaching methods.	2.39	0.77	LE
5	Assessment tasks require me to demonstrate proficiency in using digital technologies.	2.20	0.83	LE
6	The curriculum covers emerging digital technologies relevant to business.	2.22	0.75	LE
7	Digital literacy content is integrated across multiple courses rather than limited to one or two subjects.	2.19	0.70	LE
8	My programme provides structured training on information management using digital resources and databases.	2.40	0.77	LE
9	The curriculum emphasizes practical application of digital tools to solve real-world business problems.	2.35	0.78	LE
10	Course materials and learning resources are frequently delivered through digital channels.	2.25	0.80	LE
	Cluster Mean	**2.27**	**0.79**	**LE**

Table 1 shows that all ten items were rated at a low extent (LE), yielding a cluster mean of 2.27 (SD = 0.79), which falls below the criterion mean of 2.50. The lowest-rated items were dedicated digital skills modules and cross-curricular integration (M = 2.19 each), while structured information management training recorded the highest rating (M = 2.40). The finding indicates that digital literacy integration in Business Education curricula in Anambra State is at a low extent.

Research Question 2: What is the extent of integration of future workplace skills in Business Education programmes for digital economy participation in Anambra State, Nigeria?

Table 2: *Mean Ratings of Respondents on the Extent of Integration of Future Workplace Skills in Business Education Programmes for digital economic participation in Anambra State, Nigeria*

S/N	ITEM	MEAN	SD	REMARKS
1	The courses include activities specifically designed to develop critical thinking and analytical reasoning skills.	2.50	0.87	HE

2	The curriculum provides opportunities for collaborative teamwork through group projects.	2.53	0.73	HE
3	The programme incorporates problem-solving exercises that simulate real workplace challenges.	2.45	0.78	LE
4	The courses teach adaptability and flexibility skills needed for changing work environments.	2.50	0.77	HE
5	Communication skills are deliberately developed throughout the curriculum.	2.51	0.77	HE
6	The programme includes entrepreneurship training that prepares students to create and manage businesses.	2.70	0.73	HE
7	The curriculum develops self-directed learning skills that enable continuous professional development.	2.48	0.78	LE
8	The courses teach digital problem-solving skills relevant to modern business operations.	2.39	0.81	LE
9	Leadership and decision-making competencies are integrated into the curriculum through practical experiences.	2.55	0.82	HE
10	Ethical reasoning and professional conduct in digital and global contexts are addressed in the curriculum.	2.57	0.75	HE
	Cluster Mean	**2.52**	**0.76**	**HE**

Table 2 reveals a cluster mean of 2.52. While this technically exceeds the 2.50 criterion, it is recognized as a marginal result bordering on a low extent. Six of the ten items were rated at a high extent. Entrepreneurship training recorded the highest mean (M = 2.70), while digital problem-solving scored the lowest (M = 2.39, LE). The finding indicates that integration is uneven, with conventional skills better addressed than technology-dependent competencies.

Research Question 3: What is the level of institutional support for digital and future-skill integration in Business Education for digital economic participation in Anambra State, Nigeria?

Table 3: *Mean Ratings of Respondents on the Level of Institutional Support for Digital and Future-Skill Integration in Business Education for Digital Economic Participation in Anambra State, Nigeria*

S/N	ITEM	MEAN	SD	REMARKS
1	Reliable internet connectivity is available to support digital learning activities in my programme.	2.28	0.94	LE
2	The institution provides access to relevant digital learning tools and software applications needed for business education.	2.27	0.90	LE
3	The institution regularly updates its digital infrastructure to support curriculum delivery.	2.19	0.76	LE

4	My lecturers demonstrate competence in using digital tools and technologies in their teaching.	2.38	0.79	LE
5	Faculty members receive adequate support to develop innovative teaching methods that incorporate digital and future skills.	2.32	0.77	LE
6	There are established guidelines for faculty on how to integrate digital and future skills into course content.	2.29	0.78	LE
7	Adequate funding is allocated by the institution to support digital and future-skill integration initiatives.	2.20	0.81	LE
8	The institution collaborates with industry partners to ensure curriculum relevance to workplace demands.	2.25	0.78	LE
9	Students have access to digital learning resources to support skill development.	2.40	0.81	LE
10	The institution monitors the effectiveness of digital and future-skill integration in programmes.	2.45	0.79	LE
	Cluster Mean	**2.30**	**0.77**	**LE**

Table 3 shows a cluster mean of 2.30 (SD = 0.77), below the criterion mean of 2.50, with all ten items rated at a low extent. The lowest-rated item was regular updating of digital infrastructure (M = 2.19), and the highest was monitoring of integration effectiveness (M = 2.45). Internet connectivity recorded the widest variability (SD = 0.94), reflecting uneven provision across institutions. Item 1 (Internet Connectivity) showed a high standard deviation (0.94), indicating significant disagreement among respondents regarding the reliability of campus internet. The finding indicates that institutional support for digital and future-skill integration is at a low extent.

Discussion

The finding that digital literacy integration is at a low extent aligns with Ndubuisi et al. (2025), who established that despite high demand for digital skills in Anambra State business education institutions, actual curricular embedding remained insufficient. Okpue and Ito (2025) and the Nigerian Journal of Business Education (2024) similarly documented inadequate digital integration in Nigerian business education, while the ADEA (2024) and World Bank (2020) attribute this to persistent infrastructure deficits across the continent. In contrast, Abubakar et al. (2025) and Khan et al. (2022) reported stronger integration outcomes in settings with established ICT infrastructure and institutional policy support. This divergence is explained by resource disparities: the conditions enabling effective integration in those studies, including stable connectivity, functional hardware, and policy frameworks, are demonstrably absent in the Anambra State context, as confirmed by the low institutional support ratings in Table 3.

Future workplace skills integration at a high extent is consistent with Ufondu et al. (2024), Chundusu and Jwanpe (2017), and Nambisan (2018), all of whom confirm that entrepreneurship, communication, and collaboration competencies are increasingly embedded in Nigerian business education. However, the low-extent ratings for digital problem-solving and workplace simulation contradict Rios et al. (2020) and Ridwan and Edward (2025), who identified these as among the most sought-after

competencies by employers. The divergence reflects a resource-driven pattern: technology-free skills such as teamwork and entrepreneurship are more consistently delivered because they require no digital infrastructure, while technology-dependent future skills are constrained by the same institutional deficits documented in Table 3.

Low institutional support corroborates Abubakar et al. (2025), ADEA (2024), Ezeokafor (2025), and the World Bank (2020), all of whom document infrastructure deficits, weak faculty development, and inadequate policy frameworks as primary barriers to digital education in Nigerian and African institutions. The apparent divergence with macro-level indicators, such as Anambra State's four national digital economy awards (Anambra State ICT Agency. (2025) and the NDEPS 2020-2030 targets (U.S. International Trade Administration, 2024), reflects the gap between government-level digital transformation progress and departmental-level resource availability. As the AfDB SEPA strategy (2022) emphasises, policy achievement does not automatically translate into institutional readiness; sustained investment and implementation at the programme level is required for skills development outcomes to improve.

Limitations of the Study

Several limitations should be considered when interpreting these findings. First, the study relies on self-reported data, which may be subject to participant bias. Second, the geographic scope is restricted to four institutions within Anambra State, which may limit the generalizability of the findings to other regions of Nigeria. Finally, the use of a researcher-developed instrument, while validated by experts, has not undergone extensive longitudinal psychometric testing.

Nonetheless, these limitations do not undermine the objectivity of the study, as the rigorous expert validation of the instrument and the application of standardized statistical procedures ensure that the findings provide a credible and verifiable reflection of the current state of Business Education in the study area.

Conclusion

This study evaluated the alignment between Business Education curricula and digital economy requirements within Anambra State tertiary institutions during the 2024/2025 academic session. The findings reveal a significant disparity between curriculum intent and classroom reality; while the integration of theoretical "future-skills" was high, practical digital literacy integration and institutional support remain low, creating a pedagogical bottleneck that prevents the full operationalization of the program. While this research provides a credible reflection of the current academic environment, it is limited by its reliance on self-reported data and its specific geographic focus, suggesting that future research should adopt longitudinal designs or comparative studies across other Nigerian geopolitical zones to track long-term skill utility. This work contributes to the field by providing a diagnostic roadmap for policymakers, emphasizing that for Anambra State to realize its digital economy ambitions, institutional investment must move beyond curriculum revision to focus on the functional provision of digital resources and high-level technical training for both students and educators.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. The National Universities Commission (NUC) and relevant regulatory boards should mandate a comprehensive restructuring of Business Education curricula to systematically embed digital literacy standards across all course units. This action is justified by the study’s finding that current integration is low, necessitating a move beyond elective modules toward a core competency framework. Establishing minimum standards for data management and digital tools will ensure that all graduates meet the baseline requirements of the modern economy.
2. The Anambra State Ministry of Education should develop a structured integration framework that prioritizes project-based learning and industry-linked internships to address gaps in digital problem-solving. This recommendation is justified by the need to bridge the "pedagogical bottleneck" identified in this research, where theoretical knowledge exists without practical application. By formalizing partnerships with the private sector, institutions can provide

students with authentic workplace simulations that reflect contemporary business environments.

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