Entrepreneurship education and digital skills acquisition in selected federal tertiary institutions in Osun State, Nigeria

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ABSTRACT

This study examines the degree to which entrepreneurship education fosters digital skills among students in the context of ongoing graduate digital illiteracy despite required entrepreneurship courses across three federal tertiary institutions in Osun State, Nigeria. The goals are to evaluate students' inventiveness, digital literacy, and preparedness for online business, as well as to ascertain how exposure to entrepreneurship education and digital competency relate to one another. Using a descriptive mixed-methods methodology, 30 professors chosen by stratified and simple random sampling participated in semi-structured interviews, and 285 students completed questionnaires. Thematic analysis was used to look at qualitative data, while descriptive statistics, one-way ANOVA, and Pearson correlation were used to evaluate quantitative data. The results indicate that while entrepreneurship education is widely used and increases awareness of business opportunities, the curriculum is still mostly theoretical and covers little in the way of digital marketing, e-commerce, and data analytics, which results in students having only a moderate level of digital competency. Digital skills and entrepreneurial education were found to have a substantial positive association ($r = 0.63$, $p < 0.05$), although this relationship is limited by curriculum gaps, poor infrastructure, and insufficient lecturer training. In order to guarantee that entrepreneurship education more successfully supports digital empowerment and employability in Nigeria's technology-driven economy, the study suggests curriculum change, enhanced digital infrastructure, and focused capacity building for lecturers.

INTRODUCTION

Education on entrepreneurship has gained relevance in higher institutions in Nigeria as the nation aims at alleviating unemployment and enhancing innovation among the youths (Oyinlola et al., 2024; Muogbo et al., 2025; Ezeonwumelu et al., 2025). It is the act of educating students to be able to identify business opportunities, generate ideas, and resource-management to generate employment (Zhao et al., 2022). In the past 10 years, universities and polytechnics have incorporated entrepreneurship in their curricula and are obligatory to Nigerian students irrespective of their majors (Odewole, 2024; Omomia & Omomia,

2025). The Federal Government had the motivation behind this move to create self-reliant graduates who help in national development by being creative and entrepreneurial. Nevertheless, although this initiative has enhanced the level of knowledge regarding self-employment, several graduates remain digitally illiterate and thus unable to compete in the contemporary economy (Othman et al., 2023; Anubhav et al., 2024; Harry, 2026).

Digital skills can be understood as the skill to utilize digital tools, platforms, and applications to accomplish activities, communicate, and resolve problems (Sousa & Rocha, 2019; Al-Alami & Koppalakrishnan, 2022; Zervas et al., 2024). These

skills are essential in a world where online systems are relied upon by businesses. According to the Nigerian National Information Technology Development Agency, the level of digital literacy among young graduates is low, and the situation is worse at the public tertiary institutions. Most of the entrepreneurship education programmes continue to employ traditional methods of teaching with little utilization of technology in practice (Rashid, 2019; Chen et al., 2021; Miço & Cungu, 2023). The gap lowers the capability of the students to use their knowledge on practical matters in business (Qiu et al., 2020; Govender & Vaaland, 2020; Urquía-Grande & Estébanez, 2020).

In Osun State, the Obafemi Awolowo University, Federal Polytechnic Ede, and the Federal College of Education Iwo have incorporated the courses of entrepreneurship in their curriculum. However, most such programmes are more of a theory on business plans rather than on digital skills. As an example, students are taught about record keeping and business ethics but do not have an opportunity to work with digital marketing, e-commerce tools, or business analytics software (Taneja & Bala, 2023; Zhang & Yu, 2023; Kadarisman et al., 2025). This insubordinate linkage between training in entrepreneurship and digital practice has raised a grave concern among policy-makers as well as educators.

The literature available demonstrates that entrepreneurship education enhances creativity and risk-taking tendencies in students but does not include digital learning in every aspect (Bandera et al., 2018; Silva et al., 2023; Dabbous and Boustani, 2023; Graciano et al., 2023; Maulida et al., 2024; Udekwe and Iwu, 2024). Conversely, the research conducted in the developed world reveals that business-to-business-to-digital-literacy-training entities ultimately result in graduates who are flexible in the present-day employment markets (Terentyeva et al., 2018; Yami et al., 2020; Rodrigues et al., 2020; Shahriar et al., 2022; Negm, 2023; Martins et al., 2023; Yue et al., 2023; Nimmi et al., 2023). The little evidence available in Nigeria concerning the impact of digital skills on the success of the outcomes of entrepreneurship education is committed to the federal tertiary institutions in Osun State. It is this disconnect that renders the creation of policies linking digital training to higher education entrepreneurship training challenging (Jackson, 2019; Linzalone et al., 2020; de Waal & Maritz, 2022; Sitaridis & Kitsios, 2023; Singun, 2025).

The key issue that this research will focus on is the low level of correspondence between entrepreneurship education and acquiring digital skills at the federal tertiary institutions in Osun State. A good number of students undertake entrepreneurship programs and fail to know how to use technology to initiate or to operate online businesses. The lecturers are usually untrained and poorly equipped to deliver digital entrepreneurship. These problems prominently raise some questions concerning the efficiency of entrepreneurship education in equipping students to work in the rapidly developing digital economy.

METHODS

The research was conducted via the mixed methods design, consisting of quantitative and qualitative research (Matovic & Ovesni, 2023). The quantitative section was the collection of numerical data by means of structured questionnaires, whereas the qualitative section was based on interviews to get a more thorough understanding of the experience of people. This method was used because the entrepreneurship training and digital skills acquisition are related to both objective and personal perceptions (Duong et al., 2024).

Population and Sample

The size of the total population amounted to 12,000 students and 600 lecturers in the three institutions. A combination of simple random and stratified sampling was used to select a sample since it would not be possible to study everybody. To make the respondents fairly represented, stratified sampling was applied to group them into departments and faculties. Participants were chosen at random as each group had an equal number of participants (Uysal et al., 2019).

A total of 30 lecturers and 300 students were used as the sample. The student sample was selected using the formula introduced by Yamane, which provides a simplified method for calculating sample size based on the population and error tolerance (Hasan & Kumar, 2024). Ten lecturers were sampled from each institution, and they were required to be working in entrepreneurship or courses related to digital. This combination of

students and lecturers provided an equal perspective on both learning and teaching experiences.

Data Collection Instruments

Data was collected through two primary means: a structured questionnaire and a semi-structured interview guide. The questionnaire consisted of 25 questions that were written in straightforward language. A pilot test was used involving 20 students in a local institution, and the data was used to enhance clarity and eliminate ambiguous questions. Cronbach's Alpha was used to test reliability, and the value of 0.84 was obtained; it shows good internal consistency (Bergmann et al., 2022).

Interview Guide

Qualitative data that was gathered through the interview guide consisted of the lecturers. It included open-ended questions regarding their experience in teaching entrepreneurship education, the difficulties encountered with using technology, and their views regarding the digital competence of students. The interviews were about 30 minutes long and in English. Prior recording of any conversation was done with permission.

Data Collection and Analysis

A total of 300 questionnaires were shared, of which 285 were returned, which is equivalent to 95 per cent. Questionnaire data were coded and typed into Statistical Package of the Social Sciences (SPSS version 25). Response frequencies, means,

and percentages were employed as descriptive statistics to summarise the responses of students. Relationships between entrepreneurship education and digital skill acquisition were tested in inferential statistics, with the Pearson correlation coefficient, which is a statistical measure. The findings were given in tabular and chart format to make them comprehensible.

Thematic analysis was used to analyse data obtained during interviews. Statements regarding teaching methodology, difficulties, and online learning experiences were given codes. Two themes were formed on the basis of these codes: lack of training and curriculum limitations, and shortage of digital resources. Key findings were supported with direct quotes from participants. Quantitative results were compared with the themes later on to make conclusions.

RESULTS AND DISCUSSION
Demographic Characteristics of Respondents

With a small male majority (53.3%) and the largest age group being 21–25 years old (46.3%), Table 1 shows that the sample is fairly balanced by gender and dispersed across institutions, mirroring a normal student population. The distribution among OAU (36.8%), FPE (33.3%), and FCEI (29.8%) indicates that no institution dominates the findings, confirming the student data's representativeness.

Table 1. Demographic Characteristics of Respondents

Variable	Category	Frequency	Percentage (%)
Gender	Male	152	53.3
	Female	133	46.7
Age	16–20 years	85	29.8
	21–25 years	132	46.3
	Above 25 years	68	23.9
Institution	Obafemi Awolowo University (OAU)	105	36.8
	Federal Polytechnic Ede (FPE)	95	33.3
	Federal College of Education Iwo (FCEI)	85	29.8

Source: Students' Questionnaire Data

Status of Entrepreneurship Education

Entrepreneurship education in the studied institutions was assessed through questions on course structure, teaching methods, and access to practical learning. Table 2 shows that while 89.1% of respondents agree that entrepreneurship is mostly required, only 34.0% agree that digital

entrepreneurship is taught in schools. Teaching is still primarily theoretical and not heavily focused on digital or hands-on business activity, according to the moderate agreement on practical exposure (48.7%) and creativity-oriented assessment (55.1%).

Table 2. Students' Perception of Entrepreneurship Education

Statement	Agree (%)	Disagree (%)
The course is compulsory for all students	89.1	10.9
Lecturers use practical examples when teaching	61.4	38.6
Students are involved in hands-on projects	48.7	51.3
The course includes digital entrepreneurship training	34.0	66.0
Assessment methods encourage creativity	55.1	44.9

Source: Students' Questionnaire Data

Level of Digital Skills Acquisition

Students were asked to rate their competence in key digital areas such as computer use, online marketing, and data management. Table 3 demonstrates that students have a high level of confidence in fundamental digital abilities like internet research, Microsoft Office, and basic computer use, with "high" and "very high" ratings combined above 70% in each instance. On the other hand, advanced and business-oriented abilities such as data analysis software, e-commerce management, and digital marketing primarily cluster at "moderate" to "low" levels, indicating a skills gap in the strategic digital competences required for online entrepreneurship.

Table 3. Students' Self-Assessment of Digital Skills

Digital Skill Area	Very High (%)	High (%)	Moderate (%)	Low (%)	Very Low (%)
Basic computer use	41.4	33.3	18.9	5.6	0.8
Use of Microsoft Office tools	36.8	32.6	22.5	6.3	1.8
Internet research	44.9	30.9	17.5	6.7	0.0
Internet research	44.9	30.9	17.5	6.7	0.0
Digital marketing	10.9	22.1	40.0	20.4	6.6
E-commerce management	7.4	15.4	39.3	28.4	9.5
Data analysis software	4.9	12.3	30.2	34.7	17.9

Source: Students' Questionnaire Data

Average Digital Skill Index by Institution

The three federal tertiary institutions' students' levels of digital competency acquisition varied significantly, as shown by the Average Digital Skill Index by Institution, as shown in Table 4. With the highest value of 64%, Obafemi Awolowo University (OAU) indicates a comparatively stronger digital infrastructure, improved ICT integration in the classroom, and more exposure to technology-supported learning. While still lagging behind the university setting, Federal Polytechnic Ede (59%) has reasonably strong digital skills, suggesting some successful digital training. At 52%, Federal College of Education Iwo has the lowest index, which is indicative of more constrained facilities and fewer organized opportunities for students to practice sophisticated digital technologies. The study's significant ANOVA result ($F_{(2, 282)} = 5.72$, $p < 0.01$) demonstrates that these variations are statistically significant, highlighting the need for focused funding and curriculum support in institutions with fewer resources so that entrepreneurship education can more equally translate into useful digital skills on all campuses.

Table 4. Average Digital Skill Index by Institution

Average Digital Skill Index (OAU)	Average Digital Skill Index (FPE)	Average Digital Skill Index (FCEI)
64%	59%	52%

Source: Students' Questionnaire Data

Relationship Between Entrepreneurship Education and Digital Skills

The Pearson correlation result ($r = 0.63$, $p < 0.05$) suggests a strong positive link between entrepreneurship education exposure and digital skill levels. This means that as students engage more in entrepreneurship learning, their digital competence improves. This relationship reflects Human Capital Theory, which proposes that education enhances individual productivity (Olanrewaju & Abiodun, 2020). However, the

qualitative results showed that this improvement depends on institutional support.

CONCLUSION

While entrepreneurship education in Osun State's chosen federal tertiary institutions increases students' knowledge of business potential and develops their basic digital literacy, it is still primarily theoretical and lacks advanced digital competencies. According to the survey, students' skills in digital marketing, e-commerce management, and data analysis software are only moderate to low, despite their high competency in core skills, including basic computer use, Microsoft Office, and internet research. Infrastructure and ICT integration have a significant impact on results, as evidenced by institutional differences in digital skill indices, where OAU outperforms FPE and FCEI. When properly funded, entrepreneurial education programs can promote digital empowerment, as evidenced by the strong positive link between exposure to entrepreneurship education and digital skills. The study indicates that if entrepreneurship education is to create graduates who are imaginative, employable, and technologically competent for Nigeria's technology-driven economy, curriculum reform, enhanced digital infrastructure, and systematic capacity building for lecturers are crucial.

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CONFLICTS OF INTEREST

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