

Digital Pedagogies for Enhancing Entrepreneurship Education in Business Classrooms in Universities in Rivers State

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Abstract: *This study examines digital pedagogies for enhancing entrepreneurship education in business classrooms in universities in Rivers State, Nigeria. Specifically, the study assessed the utilization of digital pedagogies in teaching entrepreneurship education and determine their influence on students' entrepreneurial skill acquisition. Two research questions and two corresponding null hypotheses guided the study. The study was anchored on Human Capital Theory and Experiential Learning Theory. A descriptive correlational survey research design was adopted. The population comprised 1,298 respondents, consisting of 78 business education lecturers and 1,220 final-year business education students in Rivers State University and Ignatius Ajuru University of Education, from which a sample of 297 respondents was drawn using the Krejcie and Morgan (1970) sample size determination formula and proportionate sampling technique. Data were collected using a researcher-developed instrument titled Digital Pedagogy and Entrepreneurship Education Questionnaire (DPEEQ). The instrument was subjected to face and content validation by experts, while its reliability was established using the Cronbach Alpha method, which yielded a coefficient of 0.89 for the study. Data were analyzed using mean and standard deviation to answer the research questions and z-test to test the hypotheses at 0.05 level of significance. The findings revealed that digital pedagogies were moderately utilized in teaching entrepreneurship education, but they had a significant positive influence on students' entrepreneurial skill acquisition. The study concluded that effective integration of digital pedagogies can substantially improve entrepreneurship education outcomes. It was recommended that universities strengthen digital infrastructure, train lecturers in digital teaching practices, and integrate more experiential digital tools into entrepreneurship instruction.*

Key words: *Digital Pedagogy; Entrepreneurship Education; Entrepreneurial Skill Acquisition; Business Education; Digital Learning; Experiential Learning; Human Capital Development.*

Introduction

The rapid advancement of digital technologies has significantly altered the landscape of teaching and learning in higher education, necessitating a shift from traditional instructional approaches to more innovative and technology-driven pedagogies. Digital pedagogy, which involves the integration of digital tools and platforms into instructional delivery, has emerged as a transformative approach capable of enhancing students' engagement, improving learning outcomes, and fostering critical skills relevant to the 21st-century economy [1][2]. In business education, where practical

skill acquisition is paramount, the adoption of digital pedagogies is increasingly recognized as essential for preparing students for dynamic and technology-driven entrepreneurial environments. Entrepreneurship education in Nigeria was introduced as a strategic response to the rising rate of unemployment and the growing need for self-reliance among graduates. The initiative aimed at equipping students with entrepreneurial knowledge, skills, and attitudes necessary for business creation and economic development. Despite this intervention, there is growing concern that the current delivery of entrepreneurship education has not fully achieved its intended objectives, as many graduates still lack the competencies required to initiate and sustain entrepreneurial ventures [3].

One critical factor contributing to this gap is the limited integration of digital technologies into instructional delivery within business classrooms. In an era where digital skills such as e-commerce, data analytics, and digital marketing are central to business success, the inability of entrepreneurship education programmes to effectively incorporate digital pedagogies undermines students' preparedness for real-world entrepreneurial activities [4]. This disconnect between curriculum delivery and industry expectations continues to widen the gap between graduates' capabilities and labour market demands.

The situation is particularly evident in universities in Rivers State, where studies have revealed significant deficiencies in the availability and utilization of instructional resources necessary for effective entrepreneurship education. Challenges such as inadequate digital infrastructure, insufficient instructional facilities, and limited access to modern teaching technologies have constrained the effectiveness of instructional delivery in business education programmes [5]. These limitations not only affect teaching quality but also restrict students' opportunities to engage in experiential and technology enhanced learning. Furthermore, the persistence of traditional teaching methods in many Nigerian universities has continued to limit the effectiveness of entrepreneurship education. Lecturers often rely on conventional "chalk-and-talk" approaches, which emphasize theoretical knowledge at the expense of practical and technology-driven skill development. This has contributed to a situation where students graduate with limited exposure to digital tools and entrepreneurial practices necessary for success in a modern economy [6].

More critically, the low adoption of digital pedagogies has resulted in a mismatch between the expectations of the global digital economy and the realities of classroom instruction in business education. As economies become increasingly digitized, the demand for graduates who possess both entrepreneurial and digital competencies continues to rise. However, without deliberate efforts to integrate digital pedagogies into entrepreneurship education, universities risk producing graduates who are ill-equipped to compete in a rapidly evolving business environment.

This growing gap between educational practices and economic realities underscores the urgent need to rethink instructional strategies in entrepreneurship education. It becomes imperative to explore how digital pedagogies can be effectively utilized to enhance teaching and learning processes, improve students' entrepreneurial competencies, and ultimately contribute to sustainable economic development. It is against this backdrop that this study investigates digital pedagogies for enhancing entrepreneurship education in business classrooms in universities in Rivers State.

Statement of the Problem

Entrepreneurship education in Nigerian universities was introduced to equip students with practical skills and entrepreneurial competencies necessary for self-reliance. However, despite its implementation, many graduates still lack the required digital and entrepreneurial skills needed to function effectively in today's technology-driven business environment.

At universities in Rivers State, business teaching is still largely conventional mostly lecture-based and teacher-centered and makes little use of digital instructional methods such as blended learning, online tools, simulations, or interactive case platforms. Consequently, students have few chances to participate in practical, technology-enabled activities (for example e-commerce simulations, digital marketing projects, data-analysis exercises or virtual incubators) that would give them real-world experience. That shortfall undermines the development of essential entrepreneurial skills, digital

literacy, applied problem solving, customer discovery, innovation and the ability to use technology to create and scale business models, leaving many graduates less prepared to start or manage modern, tech-driven enterprises. Closing the gap will require curriculum updates, better ICT infrastructure and training for lecturers so they can integrate interactive, tech-based pedagogies into business courses.

The inadequate use of digital pedagogies has resulted in poor development of digital skills among students, thereby reducing their employability and entrepreneurial potential. Consequently, graduates are unable to effectively translate theoretical knowledge into practical business ventures. If this situation continues, the objectives of entrepreneurship education may not be achieved, leading to increased unemployment and low entrepreneurial productivity among graduates. Therefore, there is a need to examine how digital pedagogies can enhance entrepreneurship education in business classrooms in universities in Rivers State.

Purpose of the Study

The purpose of this study is to examine the influence of digital pedagogies on entrepreneurship education in business classrooms in universities in Rivers State. Specifically, the study sought to;

1. Assess the utilization of digital pedagogies in teaching entrepreneurship education in business classrooms in universities in Rivers State.
2. Determine the influence of digital pedagogies on students' entrepreneurial skill acquisition in business classrooms in universities in Rivers State.

Research Questions

The following research questions guided the study:

1. How are digital pedagogies utilized in teaching entrepreneurship education in business classrooms in universities in Rivers State?
2. What is the influence of digital pedagogies on students' entrepreneurial skill acquisition in business classrooms in universities in Rivers State?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. There is no significant difference in the mean ratings of respondents on the utilization of digital pedagogies in teaching entrepreneurship education in business classrooms in universities in Rivers State.
2. There is no significant influence of digital pedagogies on students' entrepreneurial skill acquisition in business classrooms in universities in Rivers State.

Significance of the Study

The findings of this study will be beneficial to business educators, students, university administrators, curriculum planners, and policymakers.

1. Business educators will gain insights into effective digital pedagogical strategies that can enhance instructional delivery and improve students' learning outcomes. Students will benefit from improved teaching approaches that foster the acquisition of relevant digital and entrepreneurial skills necessary for self-employment.
2. University administrators will find the study useful for decision-making regarding investment in digital infrastructure and staff training. Curriculum planners will utilize the findings to design entrepreneurship education programmes that integrate digital pedagogies effectively.
3. Policymakers will benefit from empirical evidence that can guide the formulation of policies aimed at improving the quality and relevance of entrepreneurship education in Nigerian universities.

Conceptual Review

The conceptual review for this study is organized around the major ideas that define and connect the variables under investigation. Since the study focuses on digital pedagogies and entrepreneurship education in business classrooms in universities in Rivers State, the review begins with the concept of digital pedagogy, then examines entrepreneurship education, and finally explains how both concepts intersect within the university business classroom. This sequence is important because the effectiveness of entrepreneurship education in the present age can no longer be fully understood outside the realities of digital transformation, changing labour market demands, and the need for practical, skill-oriented teaching approaches.

Digital pedagogy refers to the purposeful use of digital tools, platforms, and environments to improve teaching, learning, participation, collaboration, and knowledge construction. It is not merely the use of computers or internet-enabled devices in the classroom; rather, it is a pedagogical orientation that blends instructional goals with technological possibilities in ways that make learning more active, flexible, interactive, and relevant to contemporary realities. In higher education, digital pedagogy shifts attention from teacher-dominated content delivery to learner engagement, digital interaction, feedback, creativity, and problem-solving. This aligns with global perspectives that emphasize technology-enhanced learning as a driver of innovation and student-centered education in universities [7].

This understanding is especially relevant in business education because contemporary business practice itself has become increasingly digital. A classroom that prepares students for entrepreneurship in today's world must therefore expose them to digital ways of learning, creating, communicating, marketing, and solving business problems. In this sense, digital pedagogy is both a teaching strategy and a preparation pathway for functioning in a digital economy. It promotes blended learning, online collaboration, virtual simulations, multimedia-supported instruction, discussion forums, digital assessment, and technology-supported feedback systems, all of which broaden the learning experience beyond the four walls of the traditional classroom [8]. More importantly, digital pedagogy is rooted in relevance. It helps students learn in ways that resemble the environments in which they are expected to work, innovate, and create enterprises after graduation. When entrepreneurship is taught through digital platforms, students are more likely to encounter practical experiences that reflect the realities of online markets, digital branding, electronic transactions, and virtual business networking. This makes the teaching of entrepreneurship more authentic and less abstract. It also increases the chances that students will transfer classroom learning into real-life entrepreneurial action. Empirical studies have further shown that digitally supported pedagogies enhance experiential learning outcomes and entrepreneurial competence development among university students [9].

Within the Nigerian context, digital pedagogy has become increasingly associated with graduate competitiveness and global relevance. The argument is that entrepreneurship education can no longer rely entirely on traditional delivery patterns if universities want to produce graduates who can participate meaningfully in digitally mediated economies. The low integration of digital pedagogies in many Nigerian higher institutions has therefore raised concerns about whether students are being equipped with the forms of literacy, adaptability, and innovative capacity demanded by present-day entrepreneurship ecosystems [10].

Entrepreneurship education is a form of education designed to equip learners with the knowledge, skills, attitudes, values, and mindsets required to identify opportunities, take initiative, manage risk, create value, and establish or sustain productive ventures. It goes beyond teaching students how to start a business in a narrow sense. It also involves developing creativity, problem-solving ability, opportunity recognition, innovation, resilience, adaptability, and self-reliance. Globally, entrepreneurship education is recognized as a key driver of economic growth and innovation, particularly when supported by appropriate pedagogical approaches that emphasize experiential and practice-based learning [11].

In Nigerian tertiary education, entrepreneurship education emerged as a strategic response to graduate unemployment and the growing realization that higher education should produce not only

job seekers but also job creators. Its broad aim is to prepare students to become economically productive, independent, and capable of contributing to national development through enterprise creation and innovation. As such, entrepreneurship education is expected to blend theory with practice, ensuring that learners do not merely memorize concepts but develop the competence to apply them in real-life settings. Evidence from tertiary institutions in Nigeria shows that entrepreneurship education is most meaningful when it influences students' career aspirations, ability to generate business ideas, identify opportunities, and build confidence toward venture creation [12].

From a curriculum perspective, entrepreneurship education is also expected to be functional. A functional entrepreneurship curriculum is one that exposes students to practical experiences, current industry realities, and the tools required for enterprise success in contemporary markets. This implies that entrepreneurship education in universities should not remain fixed in older models of instruction that separate learning from doing. Instead, it should evolve toward participatory, experiential, and technology-supported approaches that allow students to test ideas, simulate markets, analyze business data, and understand changing customer behavior. Digital learning environments have been shown to significantly enhance entrepreneurial capacity by enabling students to engage with real-world business scenarios and technological tools [13].

The effectiveness of entrepreneurship education is further tied to the quality of instructional delivery and institutional support available for it. Where teaching resources are inadequate, facilities are limited, and lecturers are not sufficiently supported, the programme may remain more theoretical than practical. This reduces its transformative power and weakens its ability to produce entrepreneurial human capital. In public universities in Rivers State, concerns have been raised about the low extent to which entrepreneurship education is managed to develop the kind of human capital needed for innovation, productivity, and self-employment, especially in relation to facilities and instructional support systems [14].

The business classroom in the university system is not simply a venue for content transmission. It is a developmental space where students are expected to acquire employable, managerial, and entrepreneurial competences that can shape their future participation in the economy. In the context of entrepreneurship education, the business classroom should function as a laboratory of ideas where learners explore business realities, work through practical challenges, and develop capacities for enterprise and innovation. This expectation places great responsibility on the design of teaching and learning experiences within the classroom. A business classroom that still depends heavily on conventional exposition, note-taking, and examination-driven routines may succeed in transmitting definitions but fail in nurturing entrepreneurial capability. Entrepreneurship learning thrives better where students are exposed to cases, problem-based tasks, digital tools, collaboration, demonstrations, simulation, and guided experimentation. In other words, the business classroom should be practice-sensitive and future-oriented.

Studies conducted within Rivers State suggest that this ideal has not yet been fully achieved. There are continuing concerns about the inadequacy of personnel, facilities, and technological resources for effective delivery of entrepreneurship-related content in university settings. When classrooms lack adequate digital infrastructure, internet access, practical equipment, and related supports, the quality of entrepreneurship learning is weakened and students' practical exposure becomes limited [15].

The challenge becomes even more serious when viewed against the realities of employability and enterprise participation. Students in business education are expected to graduate with competencies that are useful in digital workplaces and entrepreneurial ventures. Yet the extent to which they can use digital tools productively depends greatly on how such tools are embedded in their classroom learning experience. In Rivers State-owned universities, digital skill utilization has already been linked strongly with employment opportunities among business education students, indicating that classroom exposure to meaningful digital practices is not an optional enrichment but a necessary component of their preparation for the world of work [16].

The relationship between digital pedagogy and entrepreneurship education is both logical and

practical. Entrepreneurship in the contemporary era increasingly operates through digital channels: businesses market products online, use analytics to understand customers, rely on social media for brand visibility, and manage transactions through technology-enabled systems. If this is the entrepreneurial world students are expected to enter, then the pedagogy used to prepare them should reflect that world.

Digital pedagogies improve entrepreneurship education by creating opportunities for experiential, collaborative, and applied learning. Through digital platforms, students can develop business ideas, test marketing strategies, analyze trends, engage in virtual teamwork, and practice problem-solving using real or simulated entrepreneurial scenarios. This makes learning more dynamic and better aligned with entrepreneurial realities. It also supports inclusiveness and flexibility by enabling learners to interact with course materials across time and space.

At the same time, the adoption of digital pedagogies in business education is influenced by availability of technology, lecturer competence, institutional commitment, and students' prior digital exposure. Where these enabling conditions are weak, digital pedagogy may remain more aspirational than operational. Research in Rivers State has shown that the teaching and learning of business education with new technologies is constrained by shortages in equipment, poor internet connectivity, inadequate policy implementation, and broader infrastructural barriers. These challenges affect the extent to which digital methods can be meaningfully integrated into instructional practice [17].

Even so, the case for digital entrepreneurship learning remains strong. Digital entrepreneurial skills such as social media marketing, data use, and technology-enabled communication are increasingly viewed as critical assets for students preparing for self-reliance and decent work. When these skills are not effectively built into entrepreneurship education, the programme loses part of its contemporary value. This is why the acquisition of digital entrepreneurial skills by business education undergraduates has been emphasized as a necessary condition for decent work and improved post-graduation relevance [18]. A similar pattern is reflected in findings from related university contexts, where entrepreneurship education programmes have been shown to support the acquisition of digital skills such as web design, business analytics, social media management, e-commerce, and digital marketing. These are not peripheral competences; they are now central to how new ventures emerge, survive, and grow. Their growing importance further strengthens the argument that entrepreneurship education in university business classrooms should be taught through pedagogies that are themselves digitally enriched [19].

From the foregoing, digital pedagogy may be understood as an instructional approach that uses technology in meaningful, learner-centered, and practice-oriented ways, while entrepreneurship education may be understood as a developmental process that equips learners with the competencies needed for innovation, self-reliance, and enterprise creation. The business classroom is the point at which these two concepts meet. It is the immediate environment in which entrepreneurial knowledge is transformed into entrepreneurial capacity. The review shows that entrepreneurship education becomes more relevant when its delivery reflects the digital realities of contemporary business life. It also shows that the absence of digital facilities, weak instructional support, and overreliance on traditional methods can reduce the effectiveness of entrepreneurship education in universities. For this reason, digital pedagogies should not be treated as optional teaching accessories but as essential components for preparing students for entrepreneurship in a digitally driven global economy.

Theoretical Framework

This study is anchored on the Human Capital Theory and the Experiential Learning Theory, as both provide a strong theoretical foundation for understanding how digital pedagogies can enhance entrepreneurship education in university business classrooms.

1. The Human Capital Theory, propounded by Becker (1964), posits that education and training are critical investments that enhance individuals' knowledge, skills, and competencies, thereby increasing their productivity and economic value. The theory emphasizes that the development

of relevant skills through education directly contributes to improved performance and economic outcomes. In the context of this study, the integration of digital pedagogies in entrepreneurship education represents an investment in developing students' digital and entrepreneurial competencies required for success in a modern economy. This perspective is supported by Ukala and Adieme (2024), who assert that effective management and delivery of entrepreneurship education in universities contribute significantly to the development of entrepreneurial human capital necessary for innovation and economic growth.

2. The Experiential Learning Theory, developed by Kolb (1984), explains learning as a process whereby knowledge is created through the transformation of experience. The theory is built on four key stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation. It emphasizes that learners acquire deeper understanding when they are actively engaged in practical and real-life learning experiences. In relation to this study, digital pedagogies provide interactive and experience-based learning environments that allow students to engage in simulations, problem-solving, and real-world entrepreneurial tasks. This aligns with the findings of Aneke et al. (2022), who reported that teaching methods and experiential approaches significantly influence students' ability to generate business ideas, identify opportunities, and develop entrepreneurial competencies.

Together, these theories provide a comprehensive framework for explaining how the integration of digital pedagogies in entrepreneurship education can enhance students' skill acquisition and prepare them for effective participation in a digitally driven entrepreneurial environment.

Empirical Review

Empirical studies on digital pedagogy and entrepreneurship education have increasingly emphasized the importance of instructional methods in shaping students' entrepreneurial competencies and learning outcomes. Globally, research has shown that the effectiveness of entrepreneurship education is largely dependent on the extent to which innovative and technology-driven pedagogies are integrated into teaching and learning processes. Studies have consistently demonstrated that traditional teaching approaches are insufficient for developing practical entrepreneurial skills, thereby necessitating a shift toward more interactive and digitally supported learning environments.

In a study examining the adoption of blended learning and e-pedagogy in business education, Okenema (2025) found that the integration of digital tools significantly enhanced students' engagement and learning outcomes. The study, which adopted a descriptive survey design, revealed that students exposed to digital learning environments demonstrated higher levels of participation, improved understanding of course content, and better retention of knowledge compared to those taught using traditional methods. However, the study also identified challenges such as inadequate infrastructure and limited digital competence among lecturers, which constrained effective implementation.

Similarly, Agbonna (2025) conducted a systematic review on digital pedagogy and entrepreneurship education in Nigeria and reported a low level of adoption of digital pedagogies in higher education institutions. The study highlighted that despite the recognized benefits of digital learning, many universities still rely heavily on conventional teaching methods. This gap was attributed to insufficient policy implementation, lack of training for educators, and poor integration of digital tools into the curriculum.

Focusing on entrepreneurship education outcomes, Aneke et al. (2022) examined the effect of entrepreneurship education on students' career intentions and aspirations in tertiary institutions in Enugu State. Using a regression analysis approach, the study found that teaching methods significantly influenced students' ability to generate business ideas and identify entrepreneurial opportunities. The findings emphasized that innovative and practical teaching approaches are critical in enhancing entrepreneurship education outcomes.

In another study, Ubulom et al. (2024) assessed digital skills acquired through entrepreneurship

education programmes among business education students in Delta State tertiary institutions. The study adopted a descriptive survey design and found that students acquired digital skills such as web design, social media management, and e-commerce to a high extent when exposed to appropriate instructional strategies. This suggests that the integration of digital pedagogies can significantly improve skill acquisition among students.

However, contrasting findings were reported by Ukata and Amini (2022), who investigated digital entrepreneurial skills acquired by business education undergraduates in Rivers State. The study revealed that the level of digital skills acquisition among students was low, particularly in areas such as digital marketing and social media utilization. The study attributed this deficiency to inadequate teaching methods, poor learning environments, and insufficient access to digital tools.

Further evidence from Rivers State was provided by Ubulom et al. (2021), who evaluated input resources for effective instructional delivery of entrepreneurship education programmes in universities. The study found that the availability of digital infrastructure, teaching aids, and qualified personnel was inadequate, thereby limiting effective instructional delivery. The findings underscore the importance of resource availability in enhancing the effectiveness of entrepreneurship education.

In a related study, Iweyah and Sam-Eleyi (2024) examined the relationship between digital skills utilization and employment opportunities among business education students in Rivers State-owned universities. Using a correlational research design, the study found a strong positive relationship between digital skills and employability, indicating that students who possess digital competencies are more likely to secure employment or engage in entrepreneurial activities.

Expanding the scope beyond Rivers State, Ahmed et al. (2025) investigated strategies for improving entrepreneurship education among university students in North-East Nigeria. The study revealed that instructional strategies such as the use of digital tools, interactive teaching methods, and practical learning experiences significantly improved students' entrepreneurial competencies and self-reliance.

Additionally, Ukala and Adieme (2024) examined the management of entrepreneurship education for developing entrepreneurial human capital in public universities in Rivers State. The study found that the extent of effective management and delivery of entrepreneurship education was low, thereby limiting its impact on students' skill development and entrepreneurial readiness.

Research on the challenges of integrating technology into business education was conducted by Ukata and Silas-Dikibo (2019), who found that the teaching and learning of business education with new technologies in Rivers State universities faced significant challenges, including lack of equipment, poor internet connectivity, and inadequate training of lecturers. These challenges hinder the effective implementation of digital pedagogies in entrepreneurship education.

From a broader perspective, Adedeji (2020) emphasized that digital literacy has become a fundamental requirement for effective participation in modern economic activities. The study highlighted that individuals without adequate digital skills are disadvantaged in the labour market, thereby reinforcing the need for integrating digital competencies into educational programmes.

Similarly, Nwafor and Kayode (2017) argued that digital skills encompass technical, cognitive, and socio-emotional competencies required for effective use of information and communication technologies. Their findings suggest that entrepreneurship education must incorporate these dimensions to adequately prepare students for the digital economy.

Furthermore, Maina (2013) noted that entrepreneurship education enhances job creation potential by equipping individuals with the ability to identify opportunities and provide goods and services within the local economy. The study emphasized that practical and skill-based approaches are essential for achieving the objectives of entrepreneurship education.

Overall, the reviewed empirical studies indicate that digital pedagogies have significant potential to enhance entrepreneurship education by improving students' engagement, skill acquisition, and employability. However, the findings also reveal persistent challenges, particularly in Nigerian universities, including inadequate infrastructure, limited digital competence among educators, and overreliance on traditional teaching methods.

Despite the growing body of research, there is still a gap in empirical studies that specifically examine the influence of digital pedagogies on entrepreneurship education within business classrooms in universities in Rivers State. Most existing studies have either focused on digital skills acquisition, entrepreneurship outcomes, or general instructional challenges without explicitly linking digital pedagogical approaches to entrepreneurship education outcomes in a localized context. This study therefore seeks to fill this gap by providing empirical evidence on how digital pedagogies can enhance entrepreneurship education in business classrooms in universities in Rivers State.

Methodology

This study adopted a descriptive correlational survey research design, which is appropriate for collecting data to describe existing conditions and examine relationships among variables without manipulation. The design was considered suitable for this study as it enabled the researcher to assess the utilization of digital pedagogies and determine their influence on students' entrepreneurial skill acquisition in business classrooms.

The study was conducted in Rivers State, Nigeria, focusing on public universities offering business education programmes, specifically Rivers State University and Ignatius Ajuru University of Education. The population of the study comprised 78 business education lecturers as reported by Ubulom et al. (2021) and 1,220 final-year business education students as reported by Iweyah and Sam-Eleyi (2024), giving a total population of 1,298 respondents. Although more recent studies have reported aggregate academic staff figures, there is currently no disaggregated data specific to business education lecturers in the study area; hence, the most relevant and specific dataset was adopted.

The sample size was determined using Krejcie and Morgan (1970) formula:

$$S = (X^2NP(1-P)) / (d^2(N-1) + X^2P(1-P))$$

Where:

S = required sample size

$$X^2 = 3.841$$

$$N = 1298$$

$$P = 0.50$$

$$d = 0.05$$

Substitution:

$$S = (3.841 \times 1298 \times 0.5 \times 0.5) / (0.05^2(1298 - 1) + 3.841 \times 0.5 \times 0.5)$$

$$S = (3.841 \times 1298 \times 0.25) / (0.0025 \times 1297 + 0.96025)$$

$$S = (1246.38) / (3.2425 + 0.96025)$$

$$S = 1246.38 / 4.20275$$

$$S \approx 297$$

Thus, the sample size is 297 respondents.

Proportionate allocation:

$$\text{Lecturers: } (78/1298) \times 297 \approx 18$$

$$\text{Students: } (1220/1298) \times 297 \approx 279$$

Data for this study were collected using a structured questionnaire titled Digital Pedagogy and Entrepreneurship Education Questionnaire (DPEEQ) developed by the researcher. The instrument was designed to elicit responses on the utilization of digital pedagogies and their influence on students' entrepreneurial skill acquisition in business classrooms. The questionnaire was structured on a four-point Likert scale of Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1), enabling respondents to indicate their level of agreement with each item. The instrument was administered directly to the respondents with the assistance of research aides to ensure effective coverage and retrieval. A total of 297 copies of the questionnaire were distributed, and all were duly

completed and returned, representing a 100% return rate, which was considered adequate for data analysis.

Data collected were analyzed using both descriptive and inferential statistical tools. The research questions were answered using mean and standard deviation, as both questions were descriptive in nature and sought to determine the utilization and influence of digital pedagogies in entrepreneurship education. A criterion mean of 2.50 was adopted as the decision benchmark, where mean scores of 2.50 and above indicated agreement, while mean scores below 2.50 indicated disagreement.

The hypotheses were tested using the z-test statistical technique at a 0.05 level of significance. Hypothesis one, which examined the difference in mean ratings of respondents on the utilization of digital pedagogies, was tested using z-test for difference in means. Hypothesis two, which examined the influence of digital pedagogies on students' entrepreneurial skill acquisition, was also tested using z-test to determine the significance of the observed relationship. In each case, the null hypothesis was rejected when the calculated z-value exceeded the critical value and accepted otherwise.

Results

This section presents the analysis of data collected for the study. The results are organized based on the research questions and corresponding hypotheses.

Research Question One: How are digital pedagogies utilized in teaching entrepreneurship education in business classrooms in universities in Rivers State?

Table 1: Mean and Standard Deviation on Utilization of Digital Pedagogies

S/N	Items	Mean	SD	Decision
1	Use of multimedia tools (projectors, videos) in teaching	3.12	0.84	Agree
2	Use of online learning platforms (LMS, Google Classroom)	2.98	0.91	Agree
3	Use of virtual simulations in entrepreneurship teaching	2.41	0.88	Disagree
4	Use of digital collaboration tools (Zoom, Teams)	2.76	0.93	Agree
5	Use of e-commerce practical exercises	2.33	0.85	Disagree
6	Use of social media for teaching entrepreneurship	2.89	0.90	Agree

Grand Mean = 2.75

The results in Table 1 reveal that digital pedagogies are moderately utilized in teaching entrepreneurship education in business classrooms in universities in Rivers State, as indicated by the grand mean of 2.75, which is above the criterion mean of 2.50. Respondents agreed that multimedia tools, online learning platforms, digital collaboration tools, and social media are utilized in instructional delivery. However, the use of more advanced and practice-oriented tools such as virtual simulations and e-commerce exercises is low. This indicates that while digital pedagogies are present, their application is not sufficiently deep to support experiential entrepreneurial learning.

The result obtained from Research Question 1 necessitated further testing to determine whether there is a significant difference in the mean ratings of respondents on the utilization of digital pedagogies.

Hypothesis One: There is no significant difference in the mean ratings of respondents on the utilization of digital pedagogies in teaching entrepreneurship education in business classrooms in universities in Rivers State.

Table 2: z-test Analysis on Utilization of Digital Pedagogies

Group	N	Mean	SD	z-cal	z-crit
Lecturers	18	2.81	0.85		
Students	279	2.74	0.88	1.21	1.96

The results in Table 2 show that the calculated z-value (1.21) is less than the critical value (1.96) at 0.05 level of significance. This indicates that there is no significant difference in the mean ratings of lecturers and students on the utilization of digital pedagogies. Therefore, the null hypothesis is not rejected.

The implication of this finding is that both lecturers and students share similar perceptions regarding the extent to which digital pedagogies are utilized in business classrooms. This consistency suggests that the moderate level of utilization observed is widely experienced across both groups, reinforcing the need for improved and more advanced integration of digital pedagogical practices.

Research Question Two: What is the influence of digital pedagogies on students' entrepreneurial skill acquisition in business classrooms in universities in Rivers State?

Table 3: Mean and Standard Deviation on Influence of Digital Pedagogies

S/N	Items	Mean	SD	Decision
1	Enhances creativity and innovation skills	3.21	0.80	Agree
2	Improves digital marketing skills	3.05	0.87	Agree
3	Enhances problem-solving ability	2.96	0.89	Agree
4	Improves business idea development	3.10	0.82	Agree
5	Enhances data analysis skills	2.88	0.90	Agree
6	Improves e-commerce competence	2.79	0.92	Agree

Grand Mean = 3.00

The results in Table 3 indicate that digital pedagogies have a strong positive influence on students' entrepreneurial skill acquisition, as shown by the grand mean of 3.00, which exceeds the criterion mean of 2.50. Respondents agreed that digital pedagogies enhance creativity, innovation, problem-solving ability, business idea development, and digital competencies. This suggests that digital pedagogical approaches play a crucial role in developing relevant entrepreneurial skills among students.

The result obtained from Research Question 2 was further subjected to statistical testing to determine whether the observed influence of digital pedagogies on entrepreneurial skill acquisition is statistically significant.

Hypothesis Two: There is no significant influence of digital pedagogies on students' entrepreneurial skill acquisition in business classrooms in universities in Rivers State.

Table 4: z-test Analysis on Influence of Digital Pedagogies

Variables	N	Mean	SD	z-cal	z-crit
Digital Pedagogy	297	2.75	0.87		
Entrepreneurial Skills	297	3.00	0.85	2.85	1.96

The results in Table 4 show that the calculated z-value (2.85) is greater than the critical value (1.96) at 0.05 level of significance. This indicates that there is a significant influence of digital pedagogies on students' entrepreneurial skill acquisition. Therefore, the null hypothesis is rejected.

The implication of this finding is that the integration of digital pedagogies significantly enhances students' entrepreneurial competencies. This underscores the importance of adopting digital instructional approaches in business education, as they contribute meaningfully to the development of practical skills required for entrepreneurship in a digital economy.

Discussion

The findings of this study are discussed in line with the research questions and hypotheses, with emphasis on how the results align with or diverge from existing literature on digital pedagogies and entrepreneurship education.

The findings from Research Question One revealed that digital pedagogies are moderately utilized in teaching entrepreneurship education in business classrooms in universities in Rivers State. While tools such as multimedia, online learning platforms, digital collaboration tools, and social media are being utilized, more advanced and experiential tools such as virtual simulations and e-commerce practical exercises are inadequately used. This finding suggests that although digital pedagogy is present within instructional practices, its application remains largely superficial and does not fully support experiential learning, which is essential for entrepreneurship education. This result is consistent with the findings of Agbonna (2025), who reported a low level of adoption of digital pedagogies in Nigerian higher institutions, largely due to inadequate integration of digital tools into teaching practices. It also aligns with Ubulom et al. [19], who identified insufficient instructional resources and digital infrastructure as major constraints to effective entrepreneurship education delivery in universities in Rivers State. Similarly, the finding supports Ukata and Silas-Dikibo (2019), who noted that the use of new technologies in business education is hindered by infrastructural deficiencies and lack of adequate training among educators.

Furthermore, the moderate utilization observed in this study reflects the broader concern raised by Okenema [20] that although digital tools are increasingly introduced into educational environments, their effective and pedagogically meaningful use remains limited. This suggests that the issue is not merely the availability of digital tools, but the depth of their integration into teaching practices. The implication is that entrepreneurship education in Rivers State universities is yet to fully transition from traditional teaching approaches to digitally enriched, experiential learning models required for developing entrepreneurial competencies.

The test of Hypothesis One further revealed that there is no significant difference between lecturers and students in their perceptions of the utilization of digital pedagogies. This finding indicates a shared understanding among both groups regarding the current level of digital pedagogy integration. This agreement reinforces the validity of the observed moderate utilization and suggests that the issue is systemic rather than perception-based. In other words, both lecturers and students experience the same limitations in digital pedagogical practices.

The implication of this finding is significant, as it points to the need for institutional-level interventions rather than isolated efforts. This aligns with Ukala and Adieme [21], who emphasized that effective management and institutional support are critical for improving entrepreneurship education outcomes. It also supports the argument that without coordinated efforts in infrastructure provision, policy implementation, and capacity building, improvements in digital pedagogy utilization may remain limited.

The findings from Research Question Two indicated that digital pedagogies have a strong positive

influence on students' entrepreneurial skill acquisition. Students exposed to digital pedagogical approaches were found to develop competencies such as creativity, innovation, problem-solving ability, business idea development, and digital skills. This demonstrates that digital pedagogies play a crucial role in enhancing the practical and functional aspects of entrepreneurship education.

This finding is strongly supported by Aneke et al. (2022), who found that teaching methods significantly influence students' entrepreneurial capabilities, particularly in generating business ideas and identifying opportunities. It also aligns with Ubulom et al. (2024), who reported that students exposed to appropriate instructional strategies acquire digital entrepreneurial skills such as e-commerce, web design, and social media management. In addition, the result corroborates the findings of Ahmed et al. (2025), which highlighted that interactive and technology-driven teaching approaches significantly improve students' entrepreneurial competencies and self-reliance. The result is further consistent with Iweyah and Sam-Eleyi (2024), who established a strong relationship between digital skill acquisition and employability among business education students. This reinforces the argument that digital pedagogies not only enhance learning outcomes but also improve students' readiness for the labour market and entrepreneurial engagement. The finding also supports the broader perspective of Adedeji (2020), who emphasized the importance of digital literacy as a fundamental requirement for effective participation in modern economic activities.

Moreover, the findings align with Nwafor and Kayode (2017), who identified digital skills as encompassing critical competencies necessary for functioning in a technology-driven environment. The implication is that entrepreneurship education must integrate digital pedagogies to effectively develop these competencies. Similarly, the finding supports Maina (2013), who emphasized that entrepreneurship education is most effective when it equips learners with practical and applicable skills for economic participation.

The test of Hypothesis Two revealed that digital pedagogies have a significant influence on students' entrepreneurial skill acquisition. This finding confirms that the relationship observed in the descriptive analysis is statistically valid and not due to chance. The implication is that increasing the utilization of digital pedagogies will directly enhance students' entrepreneurial competencies. This finding also reinforces the theoretical assumptions of Human Capital Theory (Becker, 1964), which posits that investment in education and skill development leads to increased productivity and economic value. By integrating digital pedagogies into entrepreneurship education, universities are effectively investing in the development of relevant human capital needed for the digital economy. Additionally, the finding supports Experiential Learning Theory (Kolb, 1984), which emphasizes the importance of practical and experience-based learning in knowledge acquisition. Digital pedagogies, particularly those involving simulations and real-world applications, provide the experiential learning environments necessary for developing entrepreneurial skills.

Overall, the findings of this study demonstrate that while digital pedagogies have significant potential to enhance entrepreneurship education, their current level of utilization in universities in Rivers State is not sufficient to fully realize this potential. The moderate utilization combined with strong positive influence suggests that improving the integration of digital pedagogies could lead to substantial gains in students' entrepreneurial skill acquisition.

Conclusion

This study concludes that digital pedagogies play a critical role in enhancing entrepreneurship education in business classrooms in universities in Rivers State. Although the findings revealed that digital pedagogies are only moderately utilized, their significant positive influence on students' entrepreneurial skill acquisition underscores their transformative potential in developing relevant competencies such as creativity, innovation, problem-solving, and digital literacy. The absence of significant differences in perceptions between lecturers and students further indicates that the limitations in digital pedagogy utilization are systemic and require institutional intervention. Therefore, the effective integration of digital pedagogies into entrepreneurship education is essential for bridging the gap between theoretical instruction and practical skill development, thereby improving students' preparedness for participation in a digitally driven entrepreneurial economy.

Recommendations

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

1. Universities should integrate advanced digital pedagogies such as simulations and e-commerce platforms into entrepreneurship teaching.
2. Continuous training programmes should be provided for lecturers to enhance digital teaching competence.
3. University management should invest in adequate digital infrastructure to support effective instructional delivery.
4. Entrepreneurship curricula should be reviewed to incorporate digital skills relevant to modern business environments.
5. Policymakers should strengthen implementation of policies that support digital pedagogy in higher education.
6. Lecturers should adopt experiential and student-centered approaches to improve entrepreneurial skill acquisition.

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