ISSN 2349-7807

International Journal of Recent Research in Commerce Economics and Management (IJRRCEM)
Vol. 12, Issue 3, pp: (1-7), Month: July - September 2025, Available at: www.paperpublications.org

ASSESSMENT OF DIGITAL PEDAGOGICAL STRATEGIES NEEDED BY BUSINESS EDUCATORS FOR INSTRUCTIONAL DELIVERY AT FEDERAL TECHNICAL COLLEGES OF EDUCATION ASABA DELTA STATE, NIGERIA

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DOI: https://doi.org/10.5281/zenodo.16265395

Published Date: 21-July-2025

Abstract: **This study investigated the digital pedagogical strategies needed by business educators for instructional delivery in Federal technical colleges of education Asaba Delta State, Nigeria. The study was guided by three research questions and the study adopted descriptive survey design. The data for the study was collected with the aid of well-designed questionnaire administered to 29 respondents which was used as the sample population of the study. Since the population of 29 respondents was manageable there was no sampling (a census). Data collected were analyzed using inferential statistics (t-test). The modern pedagogical digital strategies used are problem-based learning, active learning, collaboration tools (online forums), adaptive learning (software employment), multimedia integration (videos, audio clips), digital portfolios (online platforms) and metacognitive. The pedagogical digitals' importance are digital literacy, digital accessibility, creativity (skill development), create risk-free environment, enhancement of students engagement and diversification of instructional methods. Lack of digital information, lack of digital communication, lack of professional development and training in digital technology, lack of implementation, lack of experience of teachers in digital technology, lack of funding for digital teaching, and lack of digital infrastructure are the challenges facing pedagogical digitals. The null hypothesis was accepted. It is thus advised that educational institutions implement digital literacy training programs and prioritize curriculum development in order to incorporate pertinent digital teaching strategies that support an adaptable learning environment. Additionally, implementing a thorough strategy that prioritizes faculty development and resource distribution to enhance digital teaching tactics.**

Keywords: **digital pedagogical strategies, digital literacy, Business Educators, digital teaching, digital technology.**

1. INTRODUCTION

As the business sector continues to expand globally, there is a significant demand for professionals equipped with current technical skills. This situation presents a challenge for educators to adopt innovative teaching strategies that leverage technology to enhance student engagement and learning outcomes. The central theme of the ongoing discussion emphasizes the necessity for business educators to effectively utilize digital tools and strategies. By doing so, the objective is to develop

a robust approach that educators can employ to refine their teaching methods concerning technology, thereby preparing students for success in their future workplaces. The contemporary educational landscape necessitates the implementation of digital pedagogical strategies that foster effective teaching and learning within technical colleges in Nigeria. It is essential to recognize that contextual learning is not only vital for equipping our students for a competitive global workforce but also crucial for transitioning from traditional instructional methods to more interactive learning approaches, such as cooperative learning models (Oviawe and Uwameiye, 2020). This approach not only boosts student engagement but also aids in the cultivation of essential standard skills. Furthermore, the incorporation of Information and Communication Technology (ICT) tools and their seamless integration into the educational framework is particularly pertinent at this juncture, with evidence indicating that both lecturers and students can easily implement these tools, thereby enhancing the overall educational experience (Felicia, 2021). The implementation of digital strategies necessitates ongoing training for educators and the provision of resources by governmental agencies, ensuring that business educators are equipped to adopt and leverage these technological advancements. These digital pedagogical strategies present a persistent and considerable challenge for technical colleges. As educational demands evolve, especially within Nigerian Technical Colleges, business educators are required to modify their teaching and assessment techniques to foster a more engaging student experience in a digital context. Current research indicates that pedagogical methods must align with technological trends to improve learning experiences and adequately prepare students for the workforce (Oviawe and Uwameiye, 2020).

2. LITERATURE REVIEW

Overview of Business Education Digital Pedagogy

Digital pedagogy is becoming increasingly essential in business education, when it comes to improving the delivery of instruction, especially in Nigeria's technical colleges of education. Using tools related to information and communication technology (ICT), teachers can create exciting learning experiences that engage and build community among students. With the changing world of education, a more pressing question arises: what skills do instructors need in order to successfully embed technology in their teaching? But this is not only to enable knowledge acquisition, but also to prepare learners with appropriate skills, so that they are fitted into a knowledge economy. Recent research highlights the need for socially engaged learning environments that take students' diverse needs into account, which only adds to the challenges educators face. In light of the complexity of these challenges, such knowledge of digital pedagogical approaches is necessary to respond to the demand for radical shift in thinking, as set out in the instructional practices and education employees design (Buckler et al. 2018). Today, teaching is intricately linked with the concept of design, encompassing the planning of course content, teaching methods, and modes of delivery. While previously associated primarily with higher and distance education, design in teaching has become an integral part of the entire education system (Asenso et al, 2022). This study specifically delves into the realm of digital pedagogy and its impact on sustainable learning, relying on secondary data for analysis. The educational landscape has witnessed a transformative shift with the overwhelming integration of Information and Communication Technology (ICT) in teaching methodologies (Almerich et al., 2016). The pedagogy of teaching is expressed through the educator's delivery style, training preferences, experience, and contextual choices when planning a lesson (Kurniawan et al, 2024). Online learning platforms have emerged as effective tools for both in-class and remote learning. As expressed by Wu et al, (2017) virtual learning tools can enhance academic performance, foster collaborative learning through peer participation, and hold teachers accountable for their students' learning. Additionally, utilizing social media in online learning can improve interactivity among students and researchers with supervisors, contributing to enhanced academic performance. Digital pedagogical skills, coupled with ICT tools, have been identified as a solution to enhance learning experiences. Akuieze (2024) highlights that these skills allow students to communicate, edit, interpret, arrange, and generate texts quickly and freely.

Assessment of Existing Digital Tools and Resources

Regular assessments of existing digital applications and resources would aid greatly in improving the quality of instruction for business educators in a technical college in Nigeria. In developing innovative pedagogical approaches, digital tools can be helpful; yet their success depends also on a thorough understanding of the context in which they are to be applied. Further, it has been shown that in order to contribute best to the effective application of digital pedagogy, such pedagogy must be embedded in the unique environment of educators and students operating in that environment. Different ways should be taken into consideration and introduced in the preparation of certain activities in order to achieve satisfactorily involve all segments of teaching and all classes of learners in every system within the educational social context (Kumar,

2024). The positive aspects that are found among the adoption of technologies must also make it onto the evaluation menu, with the purpose of re-integrating resources so as to provisionally visualize what technology could feasibly adopt and put into practice for adding to student learning

at the last sanctioning of alarm bells in technical colleges.

Statement of Problem

There are great challenges in the way digital strategies can be integrated in instructional delivery for vocational pedagogical institutions of Nigeria, a prominent issue with technology integration lies with varying levels of digital literacy among educators who work in these schools. According to researchers, insufficient training in the creation and dissemination of digital content, as noted by (Akpan et al, 2021), provides strong support for a program of targeted training activities. Institutional support for integrative initiatives is seldom high enough, with most colleges unable to provide certain resources or infrastructures necessary for successful integration. The advantages of digital pedagogy are limited by these gaps, however, as noted by one such publication (Abatan et al. 2018), which examines the wider implications of the adoption of technology in higher education. Therefore, all the challenges that have been highlighted should be addressed through more research studies for the improvement of teaching and learning in Technical Colleges in Nigeria.

Objectives of the Study

1 Identify the Modern Pedagogical Digital Strategies

2 Examine the Pedagogical Digitals' Importance to Learning

3 Identify the Pedagogical Digitals' Constraints

Research questions

1 What are the Modern Pedagogical Digital Strategies?

2 What are the Pedagogical Digitals' Importance to Learning?

3 What are the Pedagogical Digitals' Constraints?

Hypothesis Testing

Ho_1: There is no significant difference between the mean responses of male and female business education lecturers on Pedagogical Digital Strategies.

Scope of the Study

This study investigated assessment of digital pedagogical strategies needed by business educators for instructional delivery in technical colleges of education Asaba Delta State, Nigeria. The business education lecturers at federal technical colleges of education Asaba Delta State only were used for the study.

Significance of the Study

Notably, many institutions are beset by inadequate and ineffective incorporation of information and communication technologies (ICTs) into the curricula. Research from several universities in Africa has found that systematic and structured strategies for digital integration can mitigate a host of challenges facing educators and enhance teaching outcomes (Akpan et al, 2021). It is imperative to build up on such gaps in digital pedagogical strategies so as to create a favorable innovative environment in contemporary schooling. The digital pedagogies have to integrate themselves well in rapidly changing education, especially within the context of Nigeria's technical colleges of education. Business educators are on a quest for functional techniques aimed at improving their delivery methods. The risks and chances of being offered on the shelf by the introduction of digital technology are of utmost importance. Teaching does not only depend on the exposure of the teachers to the tools but also on adapting and innovating on their use in the ever-digital mode of teaching. There are marked gaps in knowledge of how these strategies will be assessed and apply this methodology effectively amongst business educators. Thus, it is imperative that the respective pedagogical preferences of business educators form part of the basis for the scaffolding of an educational infrastructure that speaks into the relevance and significance of this enterprise. The pertinent issues are therefore investigated within the contextualization of this research to determine the extent of digital pedagogical strategies relevant to business educators conducive to enhanced instructional delivery in meeting 21st-century scenarios.

3. METHODOLOGY

Design of the Study

This study used descriptive survey design, to investigate the assessment of digital pedagogical strategies needed by business educators for instructional delivery at federal technical colleges of education Asaba Delta State, Nigeria. In this study the data were collected based on primary data which were used to generalize information for the study.

Population of the Study

The target population for this study comprised of 29 business education lecturers at federal technical colleges of education Asaba Delta State, Nigeria.

Sample and Sampling Techniques

The entire population was used for the study, since the population is manageable. Hence there was no sampling.

Research Instrument

To guide this research, questionnaires was administered to business education lecturers at federal technical colleges of education Asaba Delta State, Nigeria. Respondents were free to agree or disagree with all of the statements on a continuum ranging scale of Strongly Agree, Agree, Disagree and Strongly Disagree.

Validity of the Instrument

To ascertain the face and content validity of the instrument questionnaire constructed was given to three experts in Business Education Department and three experts in Department of Vocation Education in the faculty of Education, at the Delta State University Abraka who made appropriate corrections before the final copy of the questionnaire was produced.

Reliability of Instrument

To ensure the internal consistency of the reliability of the instruments, 10 copies of the questionnaire was administered to 10 business education lecturers at the Delta State University Abraka. The data collected was analyzed using Cronbach Alpha. The reliability coefficient of the result were RQ1 = 0.87, RQ2 = 0.81 and RQ3 = 0.85, given a mean of 0.84

Method of Data Collection

The researcher administered 29 questionnaires to business education lecturers at federal technical colleges of education Asaba Delta State, Nigeria.

Method of Data Analysis

The questionnaire item was weighted as follows, Strongly Agree 4 points, Agree 3 points, Disagree 2 points, Strongly Disagree 1point. In answering the research questions item, the decision rule, any mean score of 2.5 and above was regarded as agree, while any mean score less than 2.5 was regarded as disagree. The mean was employed in answering the three research questions. For the null hypothesis t-test was employed in analyzing the null hypothesis formulated at 0.05 level of significance.

4. RESULTS AND DISCUSSION

Modern Pedagogical Digital Strategies

The data in Table 1 shows the mean (X) and standard deviation (SD) of lecturers on modern pedagogical digital strategies used by business education lecturers at federal technical colleges of education Asaba Delta State, Nigeria. The Table 1 reveals that the modern pedagogical digital strategies used are problem-based learning with the mean (X) = 3.13 , SD = 0.76, active learning with the mean (X) = 2.65 , SD = 0.78, collaboration tools (online forums) with the mean (X) = 2.98, SD = 0.86, adaptive learning (software employment) with the mean (X) = 2.71 , SD = 0.73, multimedia integration (videos, audio clips) with the mean (X) = 3.13 , SD = 0.85, digital portfolios (online platforms) with the mean (X) = 3.15, SD = 0.76 and metacognitive with the mean (X) = 3.44 , SD = 0.77 confirming agreement in responses. The weighted average mean of 3.03 and SD of 0.77 which also confirmed that all the seven items were agreed responses. This study is in consonance with the earlier studies of Buckler *et al,* (2018) who noted that existing strategies used by business educators in Nigerian

universities vary in approaches to increase teaching and learning at the higher education level. Both strategies depend on information and communication technologies (ICTs) that are integrated in instructional delivery to help students learn using active and cooperative strategies. For example, business educators employ the use of online platforms for virtual simulations and case studies, as a recommendation by the Education Workers Initiative (EWI) to adapt teaching modalities responsive.

Table 1: Modern Pedagogical Digital Strategies

S/n	Strategies	SA	A	SD	D	Mean (X)	Standard Deviation (SD)	Decision
1	Problem-based learning	10	11	3	5	3.13	0.76	Agreed
2	Active learning	9	10	6	4	2.65	0.78	Agreed
3	Collaboration tools (Online forums)	12	11	3	3	2.98	0.86	Agreed
4	Adaptive Learning (Software Employment)	11	9	5	4	2.71	0.73	Agreed
5	Multimedia Integration (Videos, audio clips)	12	11	4	2	3.13	0.85	Agreed
6	Digital Portfolios (Online platforms)	13	12	3	1	3.15	0.76	Agreed
7	Metacognitive	15	10	3	1	3.44	0.77	Agreed
	Weighted Average Mean					**3.03**	**0.77**	**Agreed**

Pedagogical Digitals' Importance

The parameter in Table 2 reveals that the pedagogical digitals' importance are digital literacy with the mean (X) = 3.66, SD = 0.86, digital accessibility with the mean (X) = 3.12, SD = 0.76, creativity (skill development) with the mean (X) = 3.52, SD = 0.71, create risk-free environment with the mean (X) = 3.46, SD = 0.85, enhancement of students engagement with the mean (X) = 3.45, SD = 0.75 and diversification of instructional methods with the mean (X) = 3.32, SD = 0.86 confirming agreement in responses. The weighted average mean of 3.42 and SD of 0.79 which also confirmed that all the seven items were Agreed responses. This collaborated with the work of Oroka and Igberaharha (2024) that marketing, interpersonal skills and communication skills enhances student entrepreneurial and learning skill.

Table 2: Pedagogical Digitals' Importance

S/n	Importance	SA	A	SD	D	Mean	Standard Deviation	Decision
1	Digital Literacy	16	12	1	0	3.66	0.86	Agreed
2	Digital Accessibility	13	12	3	1	3.12	0.76	Agreed
3	Creativity (Skill development)	15	9	3	2	3.52	0.71	Agreed
4	Create Risk-Free Environment	13	10	4	2	3.46	0.85	Agreed
5	Enhancement of Students Engagement	13	9	4	3	3.45	0.75	Agreed
6	Diversification of Instructional Methods	11	10	6	2	3.32	0.86	Agreed
	Weighted Average Mean					**3.42**	**0.79**	**Agreed**

Pedagogical Digitals' Challenges

The parameter in Table 3 reveals that the pedagogical digitals' challenges are insufficient digital information with the mean (X) = 3.15, SD = 0.77, insufficient digital communication with the mean (X) = 3.55, SD = 0.75, lack of digital technological training with the mean (X) = 3.87, SD = 0.86, lack of digital technological professional development with the mean (X) = 3.56, SD = 0.77, lack of digital technological implementation with the mean (X) = 3.21, SD = 0.76, lack of digital technological teachers' experience with the mean (X) = 3.85, SD = 0.73, insufficient fund for digital teaching with the mean (X) = 3.44, SD = 0.81 and insufficient digital infrastructure with the mean (X) = 3.21, SD = 0.74 confirming agreement in responses. The weighted average mean of 3.39 and SD of 0.78 which also confirmed that all the nine items were Agreed responses. This is in line with the findings of Abatan et al., (2018) who stated that the utilization of digital processes in business education in Nigeria technical colleges are impeded by insufficient access to key information and communication technology (ICT) resources, which severely limits their entrepreneurial teaching skills and strategies.

ISSN 2349-7807

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Table 3: Pedagogical Digitals' Challenges

S/n	Constraints	SA	A	SD	D	Mean	Standard Deviation	Decision
1	Insufficient digital information	13	12	3	1	3.15	0.77	Agreed
2	Insufficient digital Communication	14	12	2	1	3.55	0.75	Agreed
3	lack of digital Technological training	11	13	3	2	3.87	0.86	Agreed
4	lack of digital Technological professional development	13	12	1	3	3.56	0.77	Agreed
5	Lack of digital Technological Implementation	13	10	4	3	3.21	0.76	Agreed
6	Lack of Digital Technological teachers' perceptions	11	10	5	3	2.65	0.75	Agreed
7	Lack of Digital Technological Teachers' Experience	15	11	2	1	3.85	0.83	Agreed
8	Insufficient Fund for digital Teaching	15	13	1	0	3.44	0.81	Agreed
9	Insufficient digital infrastructure	14	10	4	1	3.21	0.74	Agreed
	Weighted Average Mean					**3.39**	**0.78**	**Agreed**

Hypothesis Testing

Table 4: The t-test analysis of the difference between the mean responses of male and female business education lecturers on pedagogical digital strategies.

Gender	N	(X)	Std	Df	t-cal	t-crit	Decision
Male	13	2.65	0.81				
				28	1.03	1.960	NS
Female	16	2.56	0.74				

Note: NS = Not significant, S = significant, p = 0.05

The result in Table 4.4 indicated that the calculated t-value of 1.03 was less than the critical t-value of 1.960 at a significance level (p) of 0.05 and 28 degree of freedom. Therefore, the null hypothesis was accepted. This means that there is no significant difference between the mean responses of male and female business education lecturers on pedagogical digital strategies at federal technical colleges of education Asaba Delta State, Nigeria.

5. DISCUSSION OF FINDINGS

The modern pedagogical digital strategies used by business education lecturers at federal technical colleges of education Asaba Delta State, Nigeria are problem-based learning, active learning, collaboration tools (online forums), adaptive learning (software employment), multimedia integration (videos, audio clips), digital portfolios (online platforms) and metacognitive. The pedagogical digitals' importance are digital literacy, digital accessibility, creativity (skill development), create risk-free environment, enhancement of students engagement and diversification of instructional method. The pedagogical digitals' challenges are insufficient digital information, insufficient digital communication, lack of digital technological training, lack of digital technological professional development, lack of digital technological implementation, lack of digital technological teachers' experience, insufficient fund for digital teaching and insufficient digital infrastructure. The null hypothesis was accepted that there is no significant difference between the mean responses of male and female business education lecturers on pedagogical digital strategies at federal technical colleges of education Asaba Delta State, Nigeria.

6. CONCLUSION

The evaluation of digital pedagogical strategies for business educators in the Federal technical colleges of education Asaba, Delta state, Nigeria indicates a huge gap between current teaching practices and the integration of technology in delivery methods. It indicates that although teachers understand the importance of digital tools, most do not possess the training and

resources necessary to implement those strategies effectively. In addition, the current curriculum does not entirely allow for these innovative digital methodologies, hence the little student involvement. The null hypothesis was accepted that there is no significant difference between the mean responses of male and female business education lecturers on pedagogical digital strategies at federal technical colleges of education Asaba Delta State, Nigeria.

7. RECOMMENDATIONS

To cure these afflictions, it is important that institutions put in place training programs in digital literacy. Additionally, curriculum development should give priority to integrating relevant digital teaching approaches that promote an adaptive learning setting. To improve digital teaching strategies in technical colleges, it's crucial to adopt a comprehensive approach that emphasizes faculty training and resource allocation. Professional development programs should be created to provide educators with the latest technological skills and effective online teaching methods suited to different learning styles. Furthermore, colleges need to invest in dependable digital infrastructure, such as high-speed internet and updated software platforms, to ensure smooth instructional delivery. Partnering with industry leaders can also enhance the curriculum.

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