EXTENT OF UTILIZATION OF EMERGING TECHNOLOGIES FOR TEACHING AND LEARNING OF BUSINESS EDUCATION PROGRAMMES IN UNIVERSITIES IN SOUTHWEST NIGERIA

Rasheed Olawale OLAWOYIN
lawoyinoyo@gmail.com
Department of Business and Entrepreneurship Education
Faculty of Vocational, Innovative and Engineering Education. Oyo, Oyo state
&
Afolayon, Aisha Jummai
jumsha27@gmail.com
Department of Business Education
Faculty of Education
Al-Hikmah University, Ilorin
&
Mohammed Malik
mohammedishorla@gmail.com
Department of Business Education
Faculty of Education
Al-Hikmah University, Ilorin
&
Usman Hawa
uhawa49@gmail.com
Department of Business Education
Faculty of Education
Al-Hikmah University, Ilorin

Abstract

This study examined the extent of utilization of emerging technologies for teaching and learning of business education programmes in universities in South West Nigeria. Three research questions were raised, while three hypotheses were formulated. The study employed a descriptive survey research design. The population consists of 64 business educators in the seven public universities offering business education programmes in the Southwest, Nigeria. There was no sampling for this study because of the manageable size of the population. A validated instrument titled "Emerging Technologies in Teaching and Learning Business Education Programme Questionnaire" (ETTLBEPQ) was structured by the researcher. To ascertain the internal consistency of the items of the instrument, a pilot test was conducted, and the Cronbach Alpha Method was used to obtain an overall coefficient of 0.78. Mean and standard deviation were used to answer the research questions posed, while an independent samples t-test was used to test the null hypotheses at 0.05 alpha level. The finding revealed that business educators, to a great extent, integrated learning management systems in teaching and learning of business education programmes at universities in Southwest Nigeria. It was also found that business educators to a low extent integrated adaptive learning systems and flipped classroom technologies in teaching and learning of

business education programme at universities in Southwest Nigeria. It was recommended that university management should institutionalize LMS best practices by developing standardized course templates, mandating consistent LMS-based assessments, and facilitating advanced training for lecturers.

Keywords: Technologies, Teaching, Learning, Business Education Progammes, Universities

Introduction

In Nigeria, universities play an important role in offering Business Education programmes that prepare students for work in administration, entrepreneurship and the growing digital workplace. Business Education is a part of vocational and technical education, and it helps learners develop skills in business communication, office management, accounting procedures, digital tools, and entrepreneurship. These skills are necessary for effective participation in modern organisations (Onyema, 2020). At the undergraduate and postgraduate levels, the curriculum is designed to give students both theoretical knowledge and practical experience. It focuses on information management, digital office tools, professional ethics, and other workplace skills needed in the twenty-first century (Edgar, Jesus, and Barbara, 2017). Because of this, graduates are expected to leave with strong knowledge of office systems, ICT applications, management information systems, and digital communication tools that support productivity in organisations.

Universities in the Southwest region of Nigeria are known for commerce, innovation, and technology. They have a special responsibility in preparing well-trained Business Education graduates. As institutions that support technological progress and workforce development, they are expected to use modern teaching methods that improve instruction and promote better learning outcomes (Ore, 2024). The success of Business Education programmes in these universities depends on the teaching methods used by lecturers, the availability of teaching resources, the relevance of the curriculum, and the use of educational technologies (Dambo and Nwauzor, 2023). Other factors within the institutions, such as infrastructure, digital facilities, administrative structures, and access to training, also influence the quality of teaching and learning experiences (Iweyah, 2023).

Across higher education, new technologies are creating opportunities to improve teaching methods and help students gain skills that are important in the digital economy (Edeh, Nwaofor, Fyneface, Sen, and Edeh, 2020). Technologies such as Learning Management Systems, Adaptive Learning Systems and Flipped Classroom Technologies are now widely recognised as important tools that support flexible, interactive and technology-supported learning (Olawoyin and Adeniji, 2025). Learning Management Systems make it possible to share course materials, communicate digitally, conduct assessments and support collaboration between lecturers and students (Chigozie Okwum, Ezeanyeji and Odii, 2018). Adaptive Learning Systems study individual learner information and adjust learning content to suit each student's needs (Adewusi, Al Hamad, Adeleke, Nwankwo, and Nwokocha, 2023). Flipped Classroom Technologies change the usual style of teaching by allowing students to access lesson content on their own and using class time for discussion, problem solving, and group activities (Badmus, 2021).

Although each of these technologies has benefits on its own, using them together can create a much stronger teaching and learning experience in Business Education programmes. Combining Learning Management Systems, Adaptive Learning Systems, and Flipped Classroom Technologies helps to create learning environments that are more interactive, more engaging and more personalised for students (Ezenwafor and Ukata, 2022). Studies show that many lecturers

and students still depend on simple digital platforms such as WhatsApp and Telegram for sharing information and communicating. These platforms serve as informal Learning Management Systems because they are familiar and easy to use. However, the use of official university platforms such as Moodle and Blackboard is not consistent. This is because many institutions face challenges with infrastructure and training (Olawoyin and Adeniji, 2025). Research on Adaptive Learning Systems in Nigeria is still growing, but findings from Chigozie Okwum and colleagues (2018) show that these systems can improve student engagement and higher-order thinking skills, even though the level of acceptance and outcomes differ across institutions. Research by Okeke (2023), Talatu and Buba (2017), and Badmus (2021) also shows that flipped classroom approaches greatly improve students' achievement and engagement in accounting and other business-related subjects when compared with traditional teaching methods.

Even with all these benefits, there is still limited knowledge about how widely Learning Management Systems, Adaptive Learning Systems, and Flipped Classroom Technologies are used in Business Education programmes in the South West region of Nigeria. Without clear evidence on how often they are used, how they are used, and the challenges lecturers face, it is difficult for universities to plan properly or support technology adoption in a meaningful way. This makes it necessary to investigate the real extent to which these emerging technologies are being used in Business Education programmes in universities in the region. For this reason, the study seeks to understand how these technologies support teaching and learning. Although Learning Management Systems, Adaptive Learning Systems, and Flipped Classroom Technologies are known to improve engagement, flexibility, personalized learning, and student outcomes, only a few studies have examined their use specifically in Business Education in Southwest Nigerian universities. As a result, there are still questions about how lecturers use these tools, how frequently they use them, and how much they actually support effective teaching and learning. These gaps explain the importance of the present study, which focuses on the extent to which the following technologies are used in Business Education programmes in universities in South West Nigeria:

i. Learning Management Systems
ii. Adaptive Learning Systems
iii. Flipped Classroom Technologies

Methods

The study employed a descriptive survey research design. The population consisted of 64 business educators in the seven public universities offering business education programmes in South-East, Nigeria. These universities include Tai Solarin University of Education, Ekiti State University, Ado-Ekiti, Lagos State University, University of Lagos, Olabisi Onabanjo University, Osun State University, and Emmanuel Alayande University of Education. There was no sampling for this study because of the manageable size of the population.

A validated instrument titled “Emerging Technologies in Teaching and Learning Business Education Programme Questionnaire” (ETTLBEPQ) was structured by the researcher. The instrument is divided into two sections: A and B. Section A elicits a demographic profile of the respondents, while Section B is subdivided into three clusters: I – III according to the research questions. The instrument is structured on a 5-point scale of Very High Extent (VHL), High Extent (HL), Moderate Extent (ML), Low Extent (LL), and Very Low Extent (VLL) with values of 5, 4, 3, 2, and 1, respectively.

To ascertain the internal consistency of the items of the instrument, a pilot test was conducted using 15 business educators in University of Ilorin, which was not part of the study. Cronbach Alpha Method was used to obtain values 0.79, 0.89, and 0.74 for clusters I, II, and III, respectively. Mean and standard deviation were used to answer the research questions posed, while an independent samples t-test was used to test the null hypotheses at a 0.05 alpha level. The criterion mean of 3.00 served as the benchmark for making a decision. Any mean scores below the 3.00 criterion mean score were rated Low Extent, while any mean scores above the 3.00 criterion mean score were rated High Extent.

Results

Table 1: Respondents' ratings on the extent of utilization of learning management systems in teaching and learning of Business Education programmes in universities in South West Nigeria

S/N	As a business educator in your university, indicate the extent to which:	X	SD	Remarks
1	Business Education courses at your university are adequately supported by the Learning Management System (LMS)	3.55	0.58	High Extent
2	LMS used in our institution is user-friendly for both lecturers and students	3.07	0.82	High Extent
3	You receive sufficient training on how to effectively use the LMS for teaching business education courses	3.11	0.52	High Extent
4	LMS facilitates seamless communication between academic staff and students in business education programmes	3.69	0.69	High Extent
5	LMS provides a variety of interactive tools and resources to enhance business education learning.	2.53	0.88	Low Extent
6	Assignments and assessments in business education courses are effectively administered through the LMS	2.59	0.49	Low Extent
7	LMS allows for easy access to course materials and resources for business education courses.	3.72	0.77	High Extent

Data presented in Table 1 show that items 5 and 6, with mean scores of 2.53 and 2.59, were rated Low Extent, while items 1, 2, 3, 4, and 7, with respective mean scores of 3.55, 3.07, 3.11, 3.69, and 3.72, were rated High Extent because their mean scores exceeded the 3.00 benchmark. On the whole, there is a strong indication that lecturers utilize learning management systems to a high extent in teaching and learning of Business Education programmes in universities in South West Nigeria. The standard deviation scores, ranging from 0.49 to 0.88, confirm that respondents' ratings were closely clustered around the mean

Table 2: Respondents' mean and standard deviation ratings on the extent of integration of adaptive learning systems in teaching and learning of OTM at polytechnics in South East Nigeria

S/N	As a business educator in your university, indicate the extent to which adaptive learning systems:	X	SD	Remarks
8	adapt to the individual learning needs of students in the business education programme	2.47	0.82	Low Extent
9	Provide personalized learning experiences to students in the	2.11	0.52	Low Extent

	business education programme			
10	offer real-time feedback to both students and faculty in the business education programme	2.59	0.62	Low Extent
11	Enhance student engagement and motivation in the business education programme	2.12	0.64	Low Extent
12	help identify areas where students may need additional support in the business education programme	2.29	0.62	Low Extent

Data presented in Table 2 reveals that all items 8 – 12 with their respective mean scores of 2.47, 2.11, 2.59, 2.12 and 2.29 were rated Low Extent because their mean scores were below 3.00 benchmark. On the whole, it could be summarized that academic staff indicated that they are on a Low Extent integrated adaptive learning systems in teaching and learning of business education programme in universities in Southwest Nigeria. The standard deviation scores ranging from 0.52 – 0.82 means that that the respondents' mean scores were closely related.

Table 3: Respondents' ratings on the extent of integration of flipped classroom technologies in teaching and learning of business education programme in universities in South West Nigeria

S/N	As a business educator in your university, indicate the extent at which:	X	SD	Remarks
13	The use of flipped learning technologies is widespread in business education programme at our polytechnic	2.63	0.54	Low Extent
14	Students actively engage with flipped learning materials outside of class in the business education programme	2.52	0.61	Low Extent
15	Flipped learning technologies enhance student comprehension of business education concepts	2.54	0.62	Low Extent
16	The integration of flipped learning technologies allows for more interactive in-class activities in business education courses	2.68	0.71	Low Extent
17	Students demonstrate improved problem-solving skills as a result of using flipped learning technologies in a business education programme	2.82	0.68	Low Extent
18	Flipped learning technologies facilitate peer-to-peer learning among students in a business education programme.	2.98	0.69	Low Extent

Data presented in Table 3 reveal that all the items (13 – 18) with their respective mean scores of 2.63, 2.52, 2.54, 2.68, 2.82, 2.98, and 2.66 were rated low extent because these mean scores are below the 3.00 benchmark. There exists a strong indication by business educators that they are to a low extent integrated into the flipped classroom technologies in teaching and learning of business education programmes in universities in South East Nigeria. The standard deviation scores ranging from 0.54 to 0.71 mean that the respondents' mean scores were closely related.

Table 4: t-Test analysis on the significant difference in the mean ratings of business educators on the extent of utilization of learning management systems in teaching and learning of Business Education programmes in federal and state universities in South West Nigeria

Group	N	X	SD	t-cal	Df	p-value	α	Decision
Federal	39	4.12	0.74					
				11.41	62	0.12	0.05	Not significant
State	25	3.14	0.83					

Data presented in Table 4 reveals that at 62Df, the p-value of 0.000 is less than the alpha value of 0.05, t (46) = 11.41, p > 0.05), thus, the null hypothesis is rejected. This means no statistically significant difference in the mean ratings of business educators on the extent of utilization of learning management systems in teaching and learning of Business Education programmes in Federal and State universities in South West, Nigeria.

Table 5: t-Test analysis on the significant difference in the mean ratings of business educators on the extent of utilization of adaptive learning systems in teaching and learning of Business Education programmes in federal and state universities in South West Nigeria

Group	N	X	SD	t-cal	Df	p-value	A	Decision
Federal	39	2.67	0.84					
				8.57	62	0.000	0.05	Significant
State	25	2.38	0.96					

Data presented in Table 5 reveals that at 62Df, the p-value of 0.000 is less than the alpha value of 0.05, t (62) = 8.57, p < 0.05), thus, the null hypothesis is rejected. This means a statistically significant difference in the mean ratings of business educators on the extent of adaptive learning systems in teaching and learning of business education programme between Federal and State universities in Southwest Nigeria.

Table 6: t-Test analysis on the significant difference in the mean ratings of business educators on the extent of utilization of flipped classroom technologies in teaching and learning of Business Education programmes in federal and state universities in South West Nigeria

Group	N	X	SD	t-cal	Df	p-value	A	Decision
Federal	39	2.94	0.99					
				14.02	62	0.000	0.05	Significant
State	25	2.54	1.03					

Data presented in Table 6 reveals that at 62Df, the p-value of 0.000 is less than the alpha value of 0.05, t (62) = 14.02, p <0.05), thus, the null hypothesis is rejected. This means a statistically significant difference in the mean ratings of business educators on flipped classroom technologies in teaching and learning of business education programme in Federal and State universities in Southwest Nigeria.

Discussion of Findings

The findings in research question one revealed that business educators to a high extent integrated learning management systems in teaching and learning of business education programmes at universities in Southwest Nigeria. This finding agrees with the findings of Nyako, Ochoyi, and Luka (2023), Olawoyin and Adeniji (2025). The adoption of LMS in Nigerian tertiary institutions has been steadily increasing, driven by the need to modernize teaching methodologies and improve student engagement. Similarly, the finding was in tandem with the finding of Ukpai (2021), that institutions with a high extent of LMS integration reported enhanced collaboration among students, improved access to resources, and greater flexibility in course delivery. The corresponding hypothesis revealed that there is no significant difference in

the mean ratings of business educators on the extent of learning management systems in teaching and learning of business education programme in federal and state universities in Southwest Nigeria.

This finding is in support of Jimoh, Showunmi and Adeayo (2024), who found that university lecturers in Nigerian universities demonstrated a generally high level of readiness and adoption of learning management systems, with no statistically significant differences attributable to institutional characteristics. Their study further revealed that lecturers' utilization of LMS was largely influenced by individual competence, institutional support, and access to digital infrastructure rather than differences in university ownership. Also, Yusuf and Balogun (2022) reported that institutional ownership did not significantly influence the extent of LMS adoption among university lecturers, as both federal and state universities were subjected to similar ICT policies, accreditation requirements, and professional development programmes.

The finding in research question two revealed that business educators on a low extent integrated adaptive learning systems in teaching and learning of business education programme at universities in South West Nigeria. This finding corroborated with the findings of Adewusi et al. (2023), Chukwu and Ibuot (2025) who suggested that while awareness of ALS was relatively high among academic staff, the actual integration and utilization of ALS in teaching and learning were limited. The corresponding hypothesis revealed that there is a significant difference in the mean ratings of business educators on the extent of adaptive learning systems in teaching and learning of business education programme at federal and state universities in South West Nigeria. This finding opposed the finding of Izuegbunam and Osuafor (2021), who found no significant difference in the mean ratings of academic staff regarding the extent of ALS integration across different disciplines. the difference between the present study and the findings of Izuegbunam and Osuafor (2021) may be explained by differences in scope and disciplinary focus. While Izuegbunam and Osuafor examined academic staff across multiple disciplines, the present study focused specifically on Business Education, a discipline that relies heavily on data-driven instruction, individualized learning pathways, and competency-based skill acquisition features that align closely with adaptive learning systems. This disciplinary specificity may have heightened sensitivity to institutional disparities, resulting in the observed significant difference.

The findings in research question three revealed that business educators on a low extent integrated flipped classroom technologies in teaching and learning of business educators at universities in South West Nigeria. This finding was in line with the findings of Badmus (2021), Talatu and Buba (2017) that academic staff who had integrated flipped classroom approaches into their teaching reported higher levels of student engagement and participation. However, the overall extent of integration was relatively low, with many academic staff expressing concerns about the time and resources required for implementation. The corresponding hypothesis revealed that there is a significant difference in the mean ratings of business educators on the extent of flipped classroom technologies in teaching and learning of business education programme at federal and state universities in South West Nigeria. This study lends credence to the findings of Akintola and Bello (2022) who reported that disparities in instructional technology utilization across Nigerian universities were significantly influenced by differences in funding levels, availability of ICT infrastructure, and access to staff training opportunities. Similarly, Adedoyin and Soykan (2020) noted that institutional support and technological readiness play a critical role in determining lecturers' adoption of flipped classroom pedagogy.

Conclusion

The study provides meaningful insight into the current landscape of emerging technology utilization in the teaching and learning of Business Education programmes in universities across South West Nigeria. Overall, the study shows that while Learning Management Systems are integrated to a high extent and widely embraced by business educators, the adoption of Adaptive Learning Systems and Flipped Classroom Technologies remains considerably low. These disparities highlight a technology-integration ecosystem that is uneven and heavily influenced by institutional capacity, training exposure, and educator readiness. The hypotheses further revealed differences between federal and state universities, particularly in the adoption of ALS and FCT, suggesting structural and contextual variations in technological support systems.

Recommendations

Based on the study, the following recommendations were made:

1. University management should institutionalize LMS best practices by developing standardized course templates, mandating consistent LMS-based assessments, and facilitating advanced training for lecturers.
2. To improve the low adoption of Adaptive Learning Systems, university management and faculty leaders should initiate pilot projects in core Business Education courses and collaborate with edutech providers for affordable ALS solutions.
3. To raise the low extent of flipped classroom technology use, Business Education departments in each university should support lecturers in redesigning lessons for pre-class and in-class activities, while also promoting peer mentoring where early adopters guide others in implementing sustainable flipped classroom practices.

References

Adedoyin, O. B., & Soykan, E. (2020). Covid-19 pandemic and online learning: The challenges and opportunities. *Interactive Learning Environments, 28*(7), 1–13. https://doi.org/10.1080/10494820.2020.1813180

Adewusi, O. E., Al Hamad, N. M., Adeleke, I. J., Nwankwo, U. C. & Nwokocha, G. C. (2023). Adaptive teaching strategies in early childhood education: A review for Nigeria and the UK. *International Journal of Applied Research in Social Sciences, 5*(8), 255 – 271.

Akintola, D. A., & Bello, S. A. (2022). Institutional factors influencing the utilization of instructional technologies in Nigerian universities. *African Journal of Educational Management, 20*(1), 113–128.

Badmus, A. M. (2021). Educational application of flipped classroom instruction: Impact on students' academic achievement in Lagos State, Nigeria. *African Journal of Science, Technology and Mathematics Education, 6*(1), 1 – 14.

Badmus, A. M. (2021). Educational application of flipped classroom instruction: Impact on students' academic achievement in Lagos State, Nigeria. *African Journal of Science, Technology and Mathematics Education, 6*(1), 21 – 29.

Chigozie-Okwum, C. C., Ezeanyeji, P. C. & Odii, J. N. (2018). Adoption of learning management systems in Nigeria tertiary institutions: Issues and challenges. *International Journal of Computer Applications, 181*(30), 1 – 16.

Chukwu, C. O., & Ibuot, C. (2025). Exploring the effectiveness of AI-driven adaptive learning systems in science education: Impact of student engagement. *AJSTME, 11*(2), 60 – 71.

Dambo, B. I. & Nwauzor, O. (2023). Business education skills and employment generation among graduates in Rivers State universities. *International Journal of Business and Law Research, 11*(4), 35 – 46.

Edeh, M. O., Sharma, A., Nwafor, C. E., Fynface, A. G., Sen, S. & Edeh, E. C. (2020). Impact of emerging technologies on the job performance of educators in selected tertiary institutions in Nigeria. *The Journal of Computer Science and its Applications, 27*(1), 53 – 60.

Edgar, A. S.N, Jesus, S, & Barbara, D, B. (2017). Emerging technologies in education: A systematic review of the literature published between 2006 and 2016. *International journal of Emerging technologies in learning. (IJET): 12* (05): 128.

Ezenwafor, J. I. & Ukata, P. F. (2022). ICTs instructional competencies possessed by lecturers for implementing OTM curriculum in public tertiary institutions in Rivers State. *NAU Journal of Technology and Vocational Education, 7*(1), 90 – 99.

Iweyah, A. (2023). Impact of business education programme on skills acquisition by business education students in tertiary institutions in Rivers State. *International Journal of Innovative Education Research, 11*(2), 203 – 209.

Izuegbunam, A. G., & Osuafor, A. M. (2021). Effect of adaptive learning approach on students' achievement in chemistry in Awka Education Zone of Anambra State. *International Journal of Education and Evaluation, 7*(5), 81 – 90.

Jimoh, T. B., Showunmi, A. A., & Adebayo, P. O. (2024). *Lecturers' readiness and adoption of learning management systems in Nigerian universities*. *International Journal of Educational Management*, 21(1), 119–130.

Nyako, A. A., Ochoyi, E. E. & Luka, L. (2023). Integration of emerging technologies in teaching and learning at the federal college of education, Yola, Adamawa State, Nigeria. *International Journal of Research Publication and Reviews, 4*(10), 1441 – 1446.

Okeke, A. U. (2023). Effect of flipped classroom technique on academic achievement of accounting undergraduates in Nigerian universities. *NAU Journal of Technology & Vocational Education, 8*(1). Retrieved from https://journals.unizik.edu.ng/naujtved/article/download/4812/3944

Olawoyin, R. O., & Adeniji, O. A. (2025). Extent of use of Learning Management System (LMS) for effective business education teaching and learning. *Pacific Journal of Science and Technology*, 26(1). Retrieved from https://www.akamai.university/uploads/1/2/7/7/127725089/pjst26_1_118.pdf

Onyema, E. M. (2020). Integration of emerging technologies in teaching and learning process in Nigeria: The challenges. *Central Asian Journal of Mathematical Theory and Computer Science, 1*(11), 35 – 39.

Ore, E. R. (2024). *Teachers' quality and business education students' entrepreneurial skills development in public universities in South West, Nigeria.* A conference presented at the Innovative Research and Quality Education for Sustainable Development at Lead City University, Ibadan, Nigeria.

Talatu, U. R., & Buba, M. Z. (2017). Effects of flipped classroom method of teaching on academic performance of business education students in financial accounting in universities, Nigeria. *African Journal of Pedagogy and Curriculum, 4,* 13 – 22.

Ukpai, G. (2021). Integrating learning management system for teaching and learning in Nigerian tertiary institutions: A need for 21st century education. *Journal of Resourcefulness and Distinction, 18*(1), 1 – 14.

Yusuf, A., & Balogun, N. (2022). *Digital literacy, LMS usage and academic engagement in Nigerian higher education*. Digital Education Research Journal.