The Impact of Age on Lecturers' Utilisation of Learning Management Systems in Higher Education in Nigeria

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ABSTRACT

Learning management systems came into being as an immediate outcome of developments in information technology. These platforms have made it possible for educational institutions to take advantage of a wide variety of new options for teaching and learning (T&L). The purpose of these beneficial parts of an endeavour is to blend the most beneficial parts of the conventional classroom setting with the technological advancements that students and teachers have come to anticipate in the twenty-first century. Despite the fact that there are several benefits to using learning management systems in teaching and learning, many lecturers are hesitant to utilise them. The purpose of the study was to explore the impact of age on lecturers' utilisation of learning management systems in higher education in Nigeria. The methodology of this study was a quantitative method. The study adopted an ex-post facto design. A stratified random sampling technique was chosen to select 341 lecturers in the universities in Rivers State. A researcher-designed questionnaire was used to obtain information from the participants. The collected data were analysed using both descriptive and inferential statistics. The research question was answered using mean and standard deviation. The hypothesis was tested using independent t-test statistics. The study's findings revealed that age significantly influences lecturers' utilisation of learning management systems (LMS) in the classroom. It can be concluded that lecturers' age plays a critical role in enhancing the utilisation of learning management systems in teaching and learning.

Keywords: Age and Learning Management System.

INTRODUCTION

Quality education is a fundamental goal, and in Nigeria, ensuring equal educational opportunities remains a key priority. With the rise of digital learning, higher institutions must integrate Learning Management Systems (LMS) such as Canvas, Moodle, and Blackboard into their teaching methods (Almogren, 2022). Lecturers play a crucial role in achieving educational goals, and their ability to integrate technology significantly impacts learning outcomes. The adoption of Learning Management Systems (LMS) has proven essential in ensuring the continuity of education in developed nations, particularly during the COVID-19 pandemic (Ziraba et al., 2020; Cavus et al., 2021). However, in Nigeria, limited LMS adoption forced many universities to halt academic activities during the pandemic. Challenges such as inadequate training, resistance to change, and infrastructural limitations hinder adoption (Almogren, 2022). When LMS adoption fails, both students and lecturers may lose confidence in its relevance, leading to decreased engagement in digital learning environments.

The success of LMS in higher education depends on lecturers' competency to integrate these systems, which directly impacts student learning and institutional progress. These competencies include instructional design proficiency; assessment and evaluation skills such as the capacity to set quizzes, assignments, and discussion forums; communication and interaction skills; adaptability and continuous learning; and data management and analytics (Al-Fraihat et al., 2020; Bervell & Umar, 2018; Mtebe & Raisamo, 2014; and Teo, 2011).

LITERATURE REVIEW

The educational landscape has undergone a significant transformation due to the integration of Learning Management Systems (LMS) in classrooms. This study focused on the impact of age on lecturers' utilisation of learning management systems in higher education. The study conducted an empirical literature analysis to either support or challenge the principles of learning management systems, specifically examining how lecturers' age affects their use of LMSs in the classroom.

Learning Management System

Learning management systems (LMSs) have become a crucial component of higher education, enhancing the teaching and learning experience. These platforms serve as e-learning tools designed to complement traditional instructional methods within educational technology. LMSs have bridged geographical gaps and addressed challenges associated with conventional knowledge acquisition, as Ali (2016) stated that LMS has made teaching and learning more practical, exciting, and innovative in educational institutions. Many universities worldwide have adopted LMS platforms such as Blackboard, Moodle, Desire2Learn, Google Classroom, Canvas, Schoology, and Edmodo to facilitate teaching and learning (Almogren, 2022). These systems enable lecturers to share information in real time while allowing students to learn at their pace. By improving access to quality education, LMSs contribute significantly to achieving 21st-century educational goals. Learning Management Systems (LMS) provide various features aimed at helping with online education. Wimmer and Böcker (2019) stated that many current LMS systems, such as Blackboard and Moodle, are mobile-friendly, allowing students to access course materials and engage in activities from anywhere. Some LMSs use adaptive learning technology to adjust material and speed based on individual student achievement and learning styles (Chen & Wang 2019).

Numerous empirical studies have been undertaken in the field of learning management systems, highlighting technical issues, technological access, insufficient training on LMS utilisation, age, instructional difficulties, e-content generation, and geographical distribution as additional factors impeding lecturers' usage of LMS in teaching and learning (Noreen, 2020; Dlalisa & Govender, 2020). The studies by Obi & Nwankwo (2022), Ali & Salami (2021), Yusuf & Ekong (2023), and Adedeji & Alabi (2021) explore learning management system adoption in Nigerian universities, focusing on technological readiness, effectiveness, interactive features, and student satisfaction. The key findings indicate that technological readiness and system functionality significantly impact student engagement. Obi & Nwankwo (2022) found that user satisfaction directly influences LMS usage trends, while Ali & Salami (2021) highlighted LMS effectiveness in content delivery but noted challenges in communication and interaction. Yusuf & Ekong (2023) showed that interactive features enhance student satisfaction and academic achievement, and Adedeji & Alabi (2021) identified system functionality and ease of use as primary predictors of student satisfaction. Methodologically, stratified sampling (Ali & Salami, 2021; Adedeji & Alabi, 2021) provided diverse representation, while ANOVA (Obi & Nwankwo, 2022) and SEM (Adedeji & Alabi, 2021) allowed for in-depth statistical analysis. However, all studies lacked lecturer perspectives and did not consider infrastructure challenges (e.g., internet access, power supply), and did not track LMS adoption over time. While student satisfaction is well explored, lecturer adoption remains under-researched, apart from Olusola & Wale (2022). Olusola & Wale (2022) examined LMS adoption among lecturers, using the Technology Acceptance Model (TAM). They found that perceived ease of use and usefulness significantly influence adoption. Their use of stratified sampling enhanced generalisability, but the study did not cover Rivers State.

Iyiola and Ekom (2021) study found that performance expectancy and facilitating conditions were the strongest predictors of acceptance of LMS. The result of Iyiola and Ekom's (2021) study is supported by Alharbi et al.'s (2021) investigation of the critical factors affecting students' acceptance of LMS in Saudi Arabia using the Unified Theory of Acceptance and Use of Technology. The findings revealed that effort expectancy, performance expectancy, perceived functionality, facilitating condition, social influence, behavioural intention to use, and usage behaviour factors were significant and directly influenced students' behavioural intention in Blackboard. Igwe and Olagunji's (2021) study examines structural and cultural barriers to Learning Management System (LMS) adoption in Nigerian public schools. It highlights key issues such as inadequate infrastructure, faculty resistance, and limited training. The research is methodologically strong, using purposive sampling to

select relevant participants. However, its limited sample size (250 participants from ten institutions) reduces generalisability across Nigeria's 170 public universities, where challenges vary based on funding, location, and faculty composition.

Age

A diverse array of technology-focused research has been undertaken as the adoption rate of learning management systems has risen in higher education globally, presenting challenges for Nigerian institutions (Awolesi, 2018). The influence of age has been identified as a factor hindering the use of learning management systems in teaching and learning among university lecturers, despite the technological facilities available in the schools (Raman & Yamat, 2014). An empirical study conducted by Yushau and Nannim (2020) revealed that lecturers who are older in age had a higher level of utilisation of technology facilities in teaching as compared to the younger lecturers. In contrast to Yushau and Nannim (2020), Alshehri et al.'s (2020) findings revealed that younger-age students exhibited higher perception in the use of LMS among students in Saudi Arabia. In a related study conducted by Alshehri et al. (2020). The findings of Alshehri et al. (2020) support the Digital Natives vs Digital Immigrants concept, which explains why younger individuals adapt to digital technologies more easily than older users, who may struggle with a lack of digital literacy, resistance to change, or reliance on traditional educational practices.

Adeoye and Alabi (2021) examined the influence of lecturers' age on their use of Learning Management Systems (LMS) at a Nigerian university. The study utilised a survey design that included a sample size of 150 lecturers from various departments, employing stratified random sampling to ensure diversity across different age groups. Findings suggest that younger lecturers (under 40 years old) tend to use LMS more frequently, while older lecturers (above 50 years) show lower usage rates. The study also found a positive correlation between age and perceived complexity of LMS. Hernández and González (2020) explored the relationship between lecturers' age and their engagement with Learning Management Systems (LMS) in Spain. The research utilised a cross-sectional design, with a sample of 200 university lecturers using simple random sampling. Statistical analysis using multiple regression revealed that age was a significant predictor of LMS use, with younger lecturers demonstrating higher levels of engagement and older lecturers reporting barriers such as technical difficulties and time constraints. The comprehensive statistical analysis (multiple regression) and the simple random sample enhance the study's credibility. Conversely, its generalisability is limited due to its focus on a specific nation. Akinyemi and Olamide (2023) revealed that younger lecturers have a more positive attitude toward LMS and use it more regularly, while older lecturers reported difficulties in navigating the systems. The insights derived from 120 lecturers at a singular polytechnic may not provide a comprehensive representation of LMS adoption trends throughout the entirety of Nigeria's polytechnic system. The study by Lim and Tan (2021) investigated the relationship between lecturers' age and their usage of Learning Management Systems (LMS) in Malaysian higher education institutions. The study used a quantitative approach, with a sample of 220 lecturers selected via random sampling from various public universities in Malaysia. The results showed that younger lecturers had higher LMS engagement, while older lecturers faced challenges in adjusting to the systems. Omondi and Nyaboga's (2021) findings reveal that younger lecturers (under 40) are more likely to use LMS frequently, while older lecturers (above 50) report limited usage due to technological barriers and perceived complexity. Both Lim and Tan (2021) and Omondi and Nyaboga (2021) elucidate the relationship between the age of lecturers and their engagement with Learning Management Systems (LMS) in higher education, aiming to offer valuable insights. However, the methodology, while commendable in its execution, is hindered by an absence of cultural comparisons, and a lack of motivating variables, which are notable limitations. The findings point out the need for ongoing professional development to enable the effective integration of learning management systems across diverse age demographics.

The study by Williams and Carter (2019) explored the impact of lecturers' age on their usage of Learning Management Systems (LMS) in Canadian higher education. A mixed-methods approach was used, with a sample of 200 lecturers from five Canadian universities. The sampling technique employed was simple random sampling. Data were collected via online surveys and follow-up interviews. The quantitative data were analysed using ANOVA, while qualitative data were analysed through content analysis. The results indicated that younger lecturers (under 40) exhibit higher usage rates of LMS, with a preference for asynchronous teaching methods.

In contrast, older lecturers (above 50) reported using LMS less frequently and preferred traditional face-to-face teaching. The study offers a solid mixed-methods analysis of LMS use across many age groups in Canada. Their results align with international studies, which emphasise the importance of age-specific digital training in higher education. The study may, however, profit from more thorough investigation of resistance elements and cross-disciplinary and institutionally based comparisons. The consistency of findings across various geographical contexts indicates a global issue concerning age-related LMS acceptance challenges (Khalil and Fawzi, 2020; Mhlanga and Dube, 2021; Tan and Cheong, 2021; Abdul-Rahman and Mohd-Salleh, 2022). These studies provide compelling empirical evidence regarding age-related differences in LMS acceptance. Findings revealed that younger lecturers (under 40) were more likely to use LMS regularly, while older lecturers (over 50) tended to avoid using LMS or only used it minimally, citing lack of training and technical difficulties.

Objective of the Study

The purpose of the study explored the impact of age on lecturers' utilisation of learning management systems in higher education in Nigeria.

Research Questions

Does age influence lecturers' utilisation of LMS in higher education?

Research Hypotheses

HO1: Age does not significantly influence lecturers' utilisation of LMS in higher education.

METHODOLOGY

The methodology of this study was a non-experimental quantitative method. The study adopted an ex-post facto design, also referred to as causal-comparative design. The population of this study consisted of all lecturers in two universities in Rivers State: Ignatius Ajuru University of Education, Port Harcourt, and University of Port Harcourt. However, the population of lecturers in the two universities in Rivers State at the time of this study was 2107. A total number of 341 lecturers participated in the study using a stratified random sampling technique. The study was carried out in two phases. Phase one comprised the early stage of the research, which involved educational technology professionals scrutinising the instrument before administering it to the respondents. A pilot study was first conducted by the researcher, and a Cronbach's alpha was used to determine its reliability coefficient, which yielded 0.73. This is in line with an acceptable value of 0.7 according to Nwankwo (2013). The data collected were analysed using both descriptive and inferential statistics. The research question was answered using mean and standard deviation. While the hypothesis was tested using independent t-test statistics. Data was subjected to analysis by Statistical Package for Social Sciences (SPSS) version 20.0 at 0.05 level of significance.

Research Analysis and Finding

RQ1: What is the influence of lecturers' age on the utilisation of LMS in teaching?

Table 1: Mean and Standard Deviation on how lecturers' age influences the utilisation of LMS in teaching

S/No	Questionnaire Items	Age	n	□	S.D.
1	How effective are you in exploring new technologies or updates within the learning management system to enhance your teaching methods?	49 years and below	98	3.65	1.32
		50 years and above	243	1.15	1.12
2	How can you rate your strength with features of the learning management system, such as creating assignments, posting course materials, engaging students in discussions?	49 years and below	98	3.32	1.86
		50 years and above	243	1.86	1.74

3	How effective are you in customising or personalising the learning management system to suit your teaching style?	49 years and below	98	3.86	1.54
		50 years and above	243	1.76	1.09
4	What is your level of familiarity with the interface/navigation of our current learning management system?	49 years and below	98	3.64	1.92
		50 years and above	243	1.43	1.16
5	How would you rate your ability to integrate external resources (websites, articles, etc.) seamlessly into the learning management system?	49 years and below	98	3.42	1.97
		50 years and above	243	1.55	1.08
6	Do you feel adequately supported in terms of resources or training to use the learning management system effectively?	49 years and below	98	3.21	1.72
		50 years and above	243	1.65	1.04
7	Do you feel the current training/support offered adequately prepares you for utilising advanced features of the learning management system?	49 years and below	98	3.21	1.90
		50 years and above	243	1.89	1.03
8	How confident are you in ensuring data privacy and security when utilising the learning management system for your courses?	49 years and below	98	3.97	1.82
		50 years and above	243	1.64	1.03
9	How much has your experience influenced your perception of the LMS's role in fostering student engagement and participation?	49 years and below	98	3.42	1.95
		50 years and above	243	1.54	1.05
10	How would you rate your willingness to experiment with different tools or applications integrated into the learning management system for enhancing student learning?	49 years and below	98	3.31	1.96
		50 years and above	243	1.89	1.03
11	How receptive are you to feedback from students regarding the learning management system's usability in your courses?	49 years and below	98	3.55	1.99
		50 years and above	243	1.85	1.02
12	To what extent does your experience contribute to your confidence in managing and organising course materials using the LMS?	49 years and below	98	3.69	1.82
		50 years and above	243	1.25	1.02
13	How would you rate your comfort level in adapting to changes or updates in the learning management system interface or functionalities?	49 years and below	98	3.83	1.90
		50 years and above	243	1.12	1.02
15	How can you rate your comfort level in facilitating student engagement through interactive features of the learning management system (quizzes, discussion forums, etc.)?	49 years and below	98	3.76	1.97
		50 years and above	243	1.64	1.04
16	What is your level of proficiency in incorporating multimedia elements (videos, images, etc.) into your courses through the learning management system?	49 years and below	98	3.86	1.72
		50 years and above	243	1.75	1.01
17	To what extent do you believe your experience influences your ability to navigate and employ the features of the LMS?	49 years and below	98	3.53	1.89
		50 years and above	243	1.76	1.04
18	How has your years of experience impacted your ability to adapt and innovate while using the LMS for teaching purposes?	49 years and below	98	3.85	1.94
		50 years and above	243	1.42	1.03
19	What is your level of confidence in the ability of a learning management system to facilitate better organisation and management of course materials?	49 years and below	98	3.43	1.95
		50 years and above	243	1.32	1.01

20	How effective does the training or support you've received regarding the use of technology for teaching purposes impacted your confidence in using these tools?	49 years and below 50 years and above	98 243	3.55 1.21	1.92 1.02
	Overall mean score **Criterion mean: 2.50**	49 years and below 50 years and above		**3.58** **1.56**	

The result in Table 1 shows that the overall mean scores for responses regarding the influence of age on lecturers' utilisation of LMS are 3.58 for those who are 49 years old and below and 1.56 for those who are 50 years and above. This means that lecturers who are less than 49 years utilises LMS in teaching than their counterparts because their overall mean score is above 2.50 which is the criterion mean. Thus, age is an important factor when considering how lecturers utilise LMS in teaching.

HO1: Age does not significantly influence lecturers' utilisation of LMS in higher education.

Table 2: Summary of Independent t-test of lecturers' age in the utilisation of LMS in teaching based on Age

Age	**n**	**Mean**	**S.D.**	**p-val.**	**Decision at .05 Alpha Level**
49 years and below	98	64.95	5.52	.000	H_O3 is rejected
50 years and above	243	38.50	14.89		

S = Significant at .05 alpha level

In Table 2, the significance (sign.) value for the hypothesis that stated that age does not significantly influence lecturers' utilisation of LMS in teaching is .000. This significant level is less than .05 alpha level on which the decision is based. This indicated that age significantly influences lecturers' utilisation of LMS in teaching. Therefore, the formulated null hypothesis two is rejected based on decision rule.

DISCUSSION OF FINDINGS

Analysis of data on the research question showed that the overall mean scores for responses on lecturers' age favoured lecturers who are less than 49 years more than their counterparts who are 50 years and above, as observed in their mean scores when compared with the criterion mean score. Thus, age is crucial when considering how lecturers utilise LMS in teaching in Rivers State, Nigeria. Moreover, the corresponding null hypothesis revealed that age significantly influences lecturers' utilisation of LMS in higher education. The above finding is not surprising because, in recent times, age has become a vital criterion for employment in most public institutions in Nigeria generally and Rives State in particular. Public universities in Rivers State in the last few years have conducted recruitment exercises with emphasis on the use of LMS in teaching. Such recruitment exercises have favoured the younger applicants more than the older people. All these put together and the fact that older lecturers are retiring may have contributed to the outcome of this present study. This present finding lends credence to Alshehri et al. (2020), who in their study on the effect of age towards the use of LMS among students in Saudi Arabia, found that younger age students exhibited higher perception in the use of LMS. However, there is no empirical literature reviewed in this study that disagrees with this present finding.

CONCLUSION

Based on the findings of this study, it is reasonable to conclude that lecturers' ages have an important role towards enhancing the utilisation of learning management systems in the teaching and learning process.

RECOMMENDATIONS

Universities should design professional development programmes that focus on enhancing lecturers' utilisation of LMS. Training should include practical, hands-on experiences with LMS tools and foster a supportive environment where lecturers can build confidence in using technology.

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