Adoption of Learning Management System for Teaching by Academic Staff of Ahmadu Bello University, Zaria

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Abstract
This study investigated the Adoption of Learning Management System (LMS) for teaching by Academic Staff of ABU, Zaria, two objectives were formulated which are, to find out the types of LMS that academic staff adopted for teaching in ABU, Zaria and to find out the LMS's skills possessed by academic staff for LMS adoption. Quantitative Approach and cross-sectional survey research design was used, the population of the study comprised of four hundred and seventy-four (474) academic staff, one hundred and sixty-seven (167) were used as a sample size. Questionnaire in form of google form was used as the instrument for data collection. This study found out that; MOODLE is the most adopted Learning Management System for teaching by academic staff in the faculties of ABU, Zaria. Also, the study inferred that basic knowledge of computer skills were the common and most possessed LMS skills for teaching by academic staff. The study recommended that; the Management of ABU, Zaria should subscribe and register other relevant LMS like claroline, schoology, ATutor, blackboard etc so that academic staff can adopt them for their teaching activities. Also, the Management of ABU, Zaria should boost the skills of the academic staff by creating platforms that will provide hands-on training on the skills required to adopt LMS for teaching like Database Management skills, adaptability skills, web technology skills, collaborative skills and the host of others.

Keywords: *Academic Staff, Adoption, Learning Management System, Teaching, Utilization*

Introduction

The Adoption of Learning Management System (LMS) in higher institutions has become increasingly significant, driven by the need to enhance teaching efficiency and accessibility. At Ahmadu Bello University (ABU), Zaria the adoption of LMS aims to modernize educational practices and support the growing demand for digital literacy among academic staff and students. These system offers various platforms and tools for content delivery, assessment, and communication, making them invaluable in fostering an interactive and flexible learning environment. Despite their potentials, the adoption of LMS in many institutions (ABU, Zaria inclusive) faces hurdles such as resistance to change, lack of technical skills, inadequate infrastructure, inadequate Internet bandwidth, lack of technical support among others (Patil, 2021).

However, the successful adoption of these platforms hinges on the academic staff's ability and technical know-how to effectively utilize the available features of LMS and navigate the associated challenges of usage (Padayachee et al., 2015).

Academic staff at ABU, Zaria are increasingly required to develop new skills to utilize the full potential of LMS for instructional delivery. These skills include digital content creation, online pedagogical strategies, and effective communication within a virtual environment. Mastery of these skills and competencies not only enhances the quality of education but also ensures that academic staff can meet the diverse needs of their students. However, acquiring and refining these skills necessitates continuous professional development and support, as many academic staff may initially struggle with the technical aspects of LMS. Therefore, acquiring and understanding the specific skills required for adopting LMS is sine quo non for effective teaching or instruction (Coleman & Mtshazi, 2017).

The researcher concluded that, the adoption of LMS is a strategic decision made by educational institutions, organizations, or businesses to facilitate and enhance the management and delivery of educational contents and training programs. Moreover, the adoption of LMS can lead to increased efficiency in training and education, improved tracking of learner progress, and enhanced overall organizational performance, thus, these realities can only be achieved if the academic staff possessed the required skills to manage the LMS.

Statement of Problem

One of the factors that motivated the researcher to embarked on this study was the consequences of COVID-19 pandemic that resulted to closure of institutions for entire academic session equally gave the researcher the impetus to conduct this research, looking at the gravity of the consequences caused by the school closure. The researcher also observed that academic staff from the selected faculties handled outrageous number of students per class coupled with dearth of teaching facilities, infrastructure, lecture theatres and generally conducive environment, for example in a faculty of education an academic staff handled one thousand six hundred and four (1,604) students in a single

class which the lecturer divided the class into three (3) groups that is six (6) credit units instead of two (2) credit units, and this is also applied to other selected faculties. Moreover, modern learners are expected to become dissatisfied with the stand-and-deliver approach to education that dictates attendance times, learning venues, and modes of participation without adopting or utilizing sophisticated technologies for that regard. It is against these backdrops that the researcher intends to investigate the adoption of LMS for teaching in Ahmadu Bello University, Zaria.

The adoption of LMS and possessing the skills required for its utilization helped educational institutions to provide effective teaching in line with the 21st century mandates. LMS adoption is becoming a crucial resource for institutions that desire to meet-up with global transformation in the delivery of knowledge irrespective of time and location of the academic staff and learners, and aspire new possibilities for implementing pedagogical innovations where learners are expected to function as active, independent, self-reflected, and collaborative participants (Abu-Jarour & Krasnova, 2018).

Learning Management System adoption in Nigerian institutions has grown, especially after the COVID-19 pandemic. Private institutions generally lead in implementation, while public institutions face more challenges. Key obstacles include poor infrastructure, limited Internet access, and a shortage of skilled personnel. Also, there is still a skills gap when it comes to adoption and utilizing advanced features of LMS for interactive and personalized learning experiences. consequently, lack of LMS adoption and skills by academic staff can hinder access to flexible, remote learning, leaving students at a disadvantage in a digital world. It may widen the gap between institutions with advanced technology and those without, thereby worsening educational inequality. Eventually, this could lead to lower student performance and reduce competitiveness in the global education landscape.

Objectives of the Study
The objectives of the Study were set out to:
1. find the type of Learning Management System that academic staff adopted teaching in Ahmadu Bello University, Zaria-Nigeria.
2. find out the Learning Management System's skills possessed by academic staff for its adoption on instructional delivery in Ahmadu Bello University, Zaria-Nigeria.

Literature Review

Learning Management System Adoption
The learning Management System (LMS) has become an integral part of higher education and, over the last two decades, universities all over the work have adopted digital LMS platforms to deliver online education. The ubiquity of the LMS has facilitated distance, face-to-face, and blended teaching and learning processes, and online strategies are now included in most universities' strategic plans. Universities in

the developed countries have invested heavily in developing online education, and position the LMS at the heart of this investment(Brown et al., 2021). The LMS adoption offers an information technology resource to support online education, thus providing a return on the university's investment. The LMS has become a critical interface between academic and learner, expanding delivery options for content, knowledge assessment, practical exercises, and user collaboration. These attributes make the LMS an essential asset for any university. However, the constant push by higher education providers to flourish in the competitive online environment requires a commitment by academics to embrace the LMS. This commitment to a standardised LMS, and a narrative that describes the academic's adoption and acceptance of the LMS during the rapid growth of online learning in all universities, remains largely unexplored (Brown et al., 2021).

Thus, Adoption of LMS by universities requires the academic to be the main "actor on the stage", and the lockdown in March 2020 forced academics in some of the developing countries to reconsider the adoption and use of the LMS. Simply using the LMS as a repository for course documents and as an administrative tool to organise student grades, was particularly inadequate during the pandemic. Academics were expected to provide live online learning opportunities, create interactive materials that could be accessed synchronously and asynchronously by a dispersed student population, and promote student engagement. The academic's motivation, attitude, experience, and innovation were likely to determine the rapid and successful transition required to fully convert university courses to an online format. Before lockdown, LMSs in most higher institutions in developing countries were under-used (Rani et al., 2023). Many academics didn't know how to use the LMS effectively, they found it challenging to adopt LMS tools to enhance teaching and learning in face-to-face courses. The LMS tools most frequently used by academics were for making course announcements, organizing folders of course content, and administrating and managing student grades. The predominant use of the LMS by academics was for course management and administration rather than for transforming face-to-face courses (Brown et al., 2021).

The adoption of a Learning Management System (LMS) signifies a deliberate and strategic initiative undertaken by educational institutions, organizations, or businesses to streamline and enrich the management and delivery of educational content and training programs. This decision is rooted in the recognition of the evolving landscape of education and training, where digital technologies play a pivotal role in transforming traditional learning methods. By embracing an LMS, universities aim to centralize and optimize the administration of courses, training materials, and assessments, offering a cohesive platform that fosters more efficient learning experiences. This strategic move aligns with the modern emphasis on accessible, flexible, and technology-enhanced education, catering to diverse learners and accommodating various instructional approaches (Khan et al., 2020).

Learning Management System Skills for Teaching

Skill is the ability to accomplish a task expertly and professionally. It is the tendency to do something successfully and very well. The emergence of Information and Communication Technology (ICT) has brought about globalization, which has placed a demand on lecturers for new pedagogical skills, procedures, and approaches (Ugwoke et al., 2019)**.** The skills that are required by lecturers for effective utilization of LMS in teaching and learning include: ability to upload and download courseware or files; the ability to manage the editing/settings features of the LMS; being proficient in delivering lecturer on the LMS platform; ability to create additional learning resources and tools that can help in facilitating students' participation and improving their performance (Coleman & Mtshazi, 2017)**.**

Moreover, these are also considered as LMS skills; computer skills; ability to create interactive quizzes, videos, online games, and group project, among others. To excel in the use of LMS, it is expected that instructor or the course developer should have a good working knowledge of computers, and word processing to be able to succeed in an online class. The instructors should also be able to set password and login particulars for students and other users of the LMS platform; create email messages and attach files; possess keyboarding skills such as type, cut, copy, paste, name, re-name, save, and retrieve, among others; use Web browsers very well; fill or complete online forms; knowing how to backup files; knowing how to install and maintain anti-virus and other necessary software. If an instructor possesses the requisite skills for using LMS, he/she can create and deliver content, track students' participation in the learning process, and also evaluate their performance thereby increasing their level of proficiency both in skill and professionalism (Padayachee et al., 2015; Ugwoke et al., 2019)**.** Other LMS skills are; Collaborative and cooperative skills, Critical thinking, Creative thinking, Communication skills, time management, Programming Languages and Coding Skills, Database Management Skills, and Developmental Operations (DevOps).

Overall, LMS skills encompass the ability to effectively use Learning Management Systems for teaching and other academic purposes. These include navigating the platform, creating and managing courses, uploading and organizing learning materials, and facilitating communication between instructors and students, setting up interactive features such as quizzes, discussion forums, and assignments, as well as tracking student progress through analytics tools are considered as advanced LMS skills. Developing these LMS skills enhances the efficiency and quality of online teaching and learning experiences.

Methodology

Quantitative research methodology was adopted and cross-sectional survey research design was used for the study, the population of the study comprised of all the academic staff in the selected faculties (faculty of education, faculty of life science and faculty of physical science) which amount to four hundred and seventy-four (474), and one hundred and sixty-seven academic staff were used as a sample size using Louis,

Lawrence and Keith (2011) sample size determination Table, simple random sampling technique was used. The researcher used questionnaire in form of google form as the instrument for data collection and the data collected for research questions were analysed using descriptive statistical tools (Frequency distribution, percentage, mean and standard deviation).

Data Presentation and Discussion
The following Tables presented the analysis of data collected from the respondents:

Table 1: Learning Management System adopted for teaching in ABU, Zaria

Key LMS: Learning Management System, FOE: Faculty of Education, FOLS: Faculty of Life Sciences, FOPS: Faculty of Physical Sciences, F: Frequency, %: Percentage.

Table 1 presented the LMS that academic staff in the faculties of ABU, Zaria

S/N	Learning Management System	Studied Faculties							
		FOE		FOLS		FOPS		Total	
		F	%	F	%	F	%	F	%
1.	A Tutor	0	0.0	3	2.2	6	4.3	9	6.5
2.	Blackboard	0	0.0	2	1.4	3	2.2	5	3.6
3.	Claroline	0	0.0	1	0.7	0	0.0	1	0.7
4.	Google classroom	8	5.8	16	11.5	19	13.7	43	30.9
5.	Microsoft Classroom	6	4.3	12	8.6	14	10.1	32	23.0
6.	Moodle	14	10.1	19	13.7	24	17.3	57	41.0
7.	Schoology	0	0.0	0	0.0	1	0.7	1	0.7

adopted for teaching and the Table revealed that Moodle had the highest frequency and percentage of 57(41.0%), followed by Google classroom with frequency and percentage of 43(30.9%), then Microsoft classroom with 32(23.0%), followed by blackboard with 9(6.5%), then ATutor with 5(3.6%), followed by claroline and Schoology with 1(0.7%) each. It can be inferred that Moodle is the most adopted LMS for delivering instructions by academic staff of the faculties studied in ABU, Zaria. The findings indicated that

Moodle stands out as the predominant Learning Management System (LMS) for instructional delivery among academic staff at Ahmadu Bello University (ABU), Zaria

Table 2: Learning Management System skills possessed by academic staff for Teaching in ABU, Zaria.

S/N	LMS Skills	Studies Faculties						Total	
		FOE		FOLS		FOPS			
		F	%	F	%	F	%	F	%
1.	Basic Knowledge of Computer skills	45	32.4	38	27.3	52	37.4	135	97.1
2.	Internet Skills	44	31.7	32	23.0	50	36.0	126	90.6
3.	Presentation skills	39	28.1	37	26.6	49	35.3	125	89.9
4.	E-Communication skills	42	30.2	38	27.3	52	37.4	132	95.0
5.	Time management skills	34	24.5	27	19.4	43	30.9	104	74.8
6.	Downloading and moving files skills	38	27.3	35	25.2	51	36.7	124	89.2
7.	Database management skills	18	12.9	14	10.1	24	17.3	56	40.3
8.	Web technology skills	22	15.8	24	17.3	45	32.4	91	65.5
9.	Collaborative skills	20	14.4	29	20.9	44	31.7	93	66.9
10.	Critical thinking skills	34	24.5	25	18.0	42	30.2	101	72.7

11.	Creative skills	39	28.1	28	20.1	49	35.3	116	83.5
12.	Team work	35	25.2	32	23.0	48	34.5	115	82.7
13.	Problem solving skills	42	30.2	31	22.3	48	34.5	121	87.1
14.	File sharing skills	43	30.9	35	25.2	52	37.4	130	93.5
15.	Adaptability skills	29	20.9	22	15.8	37	26.6	88	63.3

Key LMS: Learning Management System, FOE: Faculty of Education, FOLS: Faculty of Life Sciences, FOPS: Faculty of Physical Sciences, F: Frequency, %: Percentage.

Table 2 displayed the LMS skills possessed by Faculty members for teaching, and the Table revealed that basic knowledge of computer had the highest frequency and percentage of 135(97.1%), then followed by e-communication skills with 132(95.0%), followed by file sharing skills with 130(93.5%), then Internet skills with 126(90.6%), closely followed by presentation skills with 125 (89.9%), followed by downloading and moving file skills with 124(89.2%), followed by problem solving skills with 121(87.1%), creativity skills with 116(83.5%), team-work skills with 115(82.7%), followed by time management skills with 104(74.8%), critical thinking skills with 101(72.7%), collaborative skills with 93(66.9%), web technology skills with 91(65.5%), followed by adaptability skills with 88(63.3%) and lastly database management skills with 56(40.3%).

It can therefore be deduced that basic knowledge of computer skills is the LMS skills mostly possessed by faculty members for teaching in ABU, Zaria, because it recorded the highest frequency and percentage among other identified skills. Whilst, database management skills were inferred to be the least LMS skills possessed by academic staff for instructional delivery in the faculties of ABU, Zaria, because it recorded the lowest frequency and percentage.

Summary of the Findings
The following are the major findings of this study:

1. This study revealed that Moodle is the most adopted Learning Management System for teaching by academic staff in the faculties of Ahmadu Bello University, Zaria. This could be as a result of the fact that, the management of ABU, Zaria adopted Moodle and made the login details available for interested academic staff to use for teaching activities.
2. This study inferred that basic knowledge of computer skills were the common and most possessed LMS skills for teaching by academic staff in the faculties of Ahmadu Bello University, Zaria. As the finding indicated that; majority of the academic staff at ABU, Zaria possess fundamental computer skills due to their

general necessity in modern education this may likely be rooted from the widespread use of computers and other handheld devices for our daily activities including instructional tasks. Also, the limited exposure to advanced LMS skills and functionalities may be due to inadequate training and professional development opportunities that could help in improving the LMS skills.

Conclusion

The adoption of Learning Management Systems (LMS) for teaching at (ABU, Zaria) is a an important step towards modernizing its academic activities and aligning with global best practices in 21st century learning environment. The adoption of LMS into its teaching methodologies, enhances accessibility, streamline course management, and provide a more interactive learning environment for teachers and students. It was also concluded that for the adoption of LMS to be effective there is need for adequate skills required for its utilization and continuous investment in digital infrastructure and comprehensive skills training for staff is essential because LMS becomes a cornerstone of education, ABU's ability to fully utilize this technology will determine its capacity to deliver quality, flexible education in a rapidly evolving academic landscape.

Recommendations

The following recommendations were provided in line with the Objectives of the Study and findings of the study:

1. The Management of Ahmadu Bello University, Zaria should subscribe and register other relevant LMS like claroline, schoology, ATutor, blackboard etc so that academic staff can adopt them for their teaching activities in ABU, Zaria.
2. The Management of Ahmadu Bello University, Zaria should boost the skills of the academic staff by creating a platform that will provide hands-on training on the skills required to adopt LMS for teaching like Database Management skills, adaptability skills, web technology skills, collaborative skills and the host of others.

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