

Institutionalizing Learning Management System: An Open Distance Learning Approach

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Abstract

Learning Management Systems (LMSs) are increasingly used in modern education as a technology to reshape the teaching-learning process. While LMSs are widely adopted in higher education institutions across many countries, they are still considered a new technology in some regions, including Nigeria, where they are becoming integral to educational delivery, especially following the COVID-19 pandemic and the associated lockdowns. This study utilized the Modular Object-Oriented Dynamic Learning Environment (MOODLE) as an open-source software to implement an LMS at a Nigerian university. A pragmatic, mixed-methods methodology was adopted, emphasizing practical implementation through structured stages of planning, setup, training, deployment, and evaluation. This approach allowed for continual assessment and improvement, ensuring that the deployment was adaptable to the needs of the university. The research aimed to deploy the platform and train lecturers on utilizing standard pedagogical designs to create open distance learning activities for their courses. Through qualitative and quantitative data collection methods, the study assessed the acceptance of the LMS among lecturers and promoted awareness of the benefits of using MOODLE in the university. The research successfully achieved its objectives by effectively deploying the learning platform, training the lecturers, and enhancing awareness of MOODLE as a learning management system within the Nigerian higher education context.

Keywords: Learning Management System, Moodle, E-Learning, Teaching and Learning, Open Distance Learning

1. Introduction

The Federal University Lokoja was established along with other eight (8) Federal universities on the 16th of February 2011. The University is located in Lokoja, the Capital city of Kogi State, North Central political zone of Nigeria. It currently has an undergraduate student population of 10,679 and a postgraduate population of 690. Because of the cosmopolitan nature of the city of Lokoja and its historical place as the

confluence city where the two dominant rivers in Nigeria meet; the university has continued to attract students from diverse backgrounds. It has six faculties and a college of medicine. The new normal, brought about by COVID-19 has many implications for the education sector in the following three key areas which are: i) the Learning Management System, the Lecturers, and iii) the Learner. The new normal has trumped up the need to innovatively identify means and ways of averting the situation in which students will suffer when they are out of their university premises. This challenge can be surmounted if universities have an effective Learning Management System (LMS) in place. Further to this, the three (3) core areas of LMS mentioned above need to be expatiated and strengthened as follows: (a). Learning Management System (LMS: This is the platform that enables teachers and learners to positively engage in learning 24/7 anywhere. There are so many of these platforms available for institutions to leverage. One of such is the MOODLE (Modular Object-Oriented Dynamic Learning Environment) which is available as a free and open-source software (FOSS); (b). Lecturers: Once an appropriate LMS has been developed or adopted, the next appropriate thing to do is for lecturers to develop their lecture notes in a format that meets the LMS standard. Lecture note preparation does not come ease as plagiarism must be adequately taken care of before an upload is made. Lecturers also need to be supported to be able to achieve this effectively. To enhance the use of the LMS, some form of pedagogy training may be required by lecturers or teachers; (c). Learners: The learner is the most important stakeholder in the school system. It is required that whatever platform is adopted must be such that the learner gets the best out of the learning system. For a successful implementation of an LMS, adequate training must be given to the learner so he/she can get the best out of it. The advent of COVID-19 has necessitated the need for universities to take proactive steps at administering course lectures to their students in an online fashion to cater to the ever-increasing student population that needs to be attended to in the face of inadequate infrastructure. The power to achieve these hinges on the ability of institutions to administer courses to students anywhere they may be in a 24/7 manner. While this should be a necessity, many activities need to be carried out to make a success of the LMS implementation in any environment. To get on board the LMS vehicle means that the university must be internet-ready, have adequate infrastructure put in place, install a free and open source LMS that does not require the payment of a yearly subscription, especially for low-income universities in developing countries, get all lecturers engaged with the LMS by designing instructional materials and all learners trained in its usage. All these are lacking in most institutions of learning, especially in the developing nations on whose behalf we want to change the narratives. This research seeks to create innovative means of solving this problem to the advantage of the institution.

The study aims to institutionalize a Learning Management System for open distance learning for institutions in the developing world. The Federal University Lokoja is used as a case study where the MOODLE

platform is implemented. The specific objectives are to: (i). Install and enhance the MOODLE software in the university portal; (ii). Facilitate the training of Lecturers on instruction material design to meet Open Distance Learning (ODL) standards; (iii). Facilitate the training of Lecturers/teachers on how to manage their courses on the Learning Management platform; (iv). Facilitate the training of students on the use of MOODLE to get the best from the LMS; (v). Facilitate the use of the of the LMS in enhancing teaching at the Federal University Lokoja. .

2. Related Works

Ja'ashan (2020) explored the potential of e-learning as a tool to enhance learning among students at Bisha University, focusing specifically on the teaching of English. The study aimed to investigate whether e-learning was perceived as beneficial to students' learning and how the university could best adopt this technology to improve the learning process and communication. Data were collected through questionnaires administered to students and teaching staff in the Department of English at the university. The results indicated that e-learning was considered an important factor in improving the quality of teaching and learning at the university and should be adopted. However, the study also identified several challenges that could hinder the successful implementation of e-learning, including administrative, technical, and academic factors. These challenges must be addressed to ensure a smooth transition from traditional teaching methods to e-learning. According to Al Rawashdeh et al. (2021), e-learning is an effective method that promotes learning and must be introduced in institutions. The study aimed to identify the advantages and disadvantages of e-learning in universities, using Ajman University as a case study. The author employed a descriptive method of analysis, administering a structured closed-ended questionnaire to collect sample data from students in each department enrolled in the academic year. The sample data were analyzed using bar charts along with percentile and frequency tables. The results showed that 81% of the students confirmed that the e-learning method made learning and communication much easier and faster. The study demonstrated that e-learning increases communication and cooperation between students and lecturers during the learning process. Likewise, Noesgaard and Orngreen (2025) conducted a study highlighting the importance of modern teaching methods in education, particularly the effectiveness of e-learning, which should be promoted. The research also presents strategies that can be implemented to optimize the e-learning process. The study utilized an integrative review to examine the effectiveness of e-learning, focusing on the use of the e-learning solution itself as an artifact. The research emphasizes the need for appropriate design and development of e-learning solutions that align with the intended learning outcomes.

In the same vein, Zhao et al. (2025) proposed that the pedagogical functions of arts and cultural heritage using technology represent an improvement over ancient method. The FINNA and Google Art Project were used as a case study to justify their research. The results showed that digital methods could be adopted for curricular activities in arts-related courses to stimulate creativity. They further explained how modern technological methods help enrich innovation, access, and interpretation of culture and art. The research provides recommendations to digital museums and internet development sites on the pedagogical functions for the future. Samir et al. (2014) researched e-learning and its effect on students in higher institutions in Egypt. They described the challenges faced by Egypt in the aspect of education and how technology must be adopted as a valid solution. The analysis method involved open-source platforms such as the Moodle e-learning platform, implemented by many Egyptian universities. Moodle can be used to deliver e-content and provide various possibilities for implementing asynchronous e-learning web-based modules. The research showed that the use of these interactive features for e-learning helped increase the motivation of undergraduate students during the learning process. In his study, Goyal (2012) emphasized the importance of e-learning in contemporary education, examining its technical aspects, advantages, disadvantages, and potential to supplant traditional classroom teaching methods. The findings indicated that e-learning represents the future of education and that higher education institutions should transition towards it. Additionally, the study suggested that e-learning is engaging and likely to gradually replace textbooks with electronic devices. Gede et al. (2022) evaluated the efficacy of revised Bloom's taxonomy-based learning activities in enhancing students' metacognitive abilities. The study aimed to demonstrate that traditional learning activities used in most schools lack innovative and diverse approaches. The authors described how learning activities can enhance students' metacognitive abilities and assessed the effectiveness of using revised Bloom's taxonomy-based learning activities for this purpose. A quasi-experimental design with a post-test was employed, involving 132 fourth graders as participants. The researchers randomly selected 44 students using a sampling method and collected data through a 10-item descriptive test. The data analysis involved inferential statistical analysis using an independent sample t-test in SPSS. The results revealed that the development of learning activities based on the revised Bloom's taxonomy classification was a potent approach for enhancing students' metacognitive skills, with a significance level of $0.00 < 0.05$. Oguguo et al. (2021) identified the influence of a Learning Management System (LMS) on the academic performance of students in a course on educational assessment and evaluation and suggested ways to improve its effectiveness. The research employed a non-equivalent group quasi-experimental design with a population of all undergraduate students at Imo State University in Nigeria. A total of 232 students, comprising 109 males and 123 females, were randomly selected, and data were collected using the "Measurement and Evaluation Achievement Test (MEAT)" instrument. Mean and standard deviation were used to analyze the data, and analysis of covariance (ANCOVA) was employed to test the null hypotheses.

The study revealed that students taught using an LMS (Moodle) performed better than those taught using the CAI4ME Package. Based on these results, the researchers recommended that instructors teaching Educational Measurement and Evaluation courses adopt LMS packages such as Moodle. Nicholas-Omoregbe et al. (2017) examined the factors that could influence the adoption of an e-Learning Management System (eLMS) in higher institutions. Using the Social Learning Theory (SLT), the Unified Theory of Acceptance and Use of Technology (UTAUT), and Technology Culturation and Power (electricity), an empirically based model was developed to identify predictors of eLMS adoption. The study employed a survey method that administered questionnaires to 472 undergraduate students from three selected private universities in Ogun State, Nigeria. The findings indicated that Attitude, Social Influence, and Technology Culturation were the main determinants of students' intention to adopt eLMS, while Performance Expectancy and Power had no impact on behavioral intention to adopt eLMS. The study also found a positive correlation between Performance Expectancy and Behavioral Intention, which led to improved student grades. These findings provide theoretical insights into the factors influencing eLMS adoption and can be valuable to researchers and educators in their planning and decision-making. Saroia and Gao (2019) investigated the effectiveness of using mobile learning management systems (m-LMS) in higher education for quality assurance in teaching and learning. The research model was based on the technology acceptance model (TAM), and nine research hypotheses were developed for analysis. The research model included external variables such as academic relevance, university management support, and perceived mobility value from previous literature to study the adoption of m-LMS. To test the proposed research model and hypotheses, 130 university students in Sweden were used as a case study. The study found that seven out of the nine research hypotheses were supported, validating the extended TAM for mobile learning. The study also demonstrated how the hypothesized model moderately predicted students' intention to use m-LMS in Swedish higher education. These findings contribute to understanding the factors that influence the adoption of m-LMS and can inform educators and policymakers about its potential for improving the quality of teaching and learning in higher education. A research study conducted by Aldiab et al. (2019) received international recognition for highlighting the significance of Learning Management Systems (LMSs) in enhancing the teaching and learning experience within academic institutions. The study revealed that a majority of universities in countries such as the United States, the United Kingdom, Canada, and Australia, as well as 28 universities in Saudi Arabia, use various LMS platforms. These LMS systems rely on existing ICT infrastructure and computer technology. Additionally, the study conducted a comparative analysis of commercially available modern LMS systems, using Saudi Arabian universities as a case study, which proved to be successful. Binyamin et al. (2019) discovered in his research that although Learning Management Systems (LMSs) are widely used by higher education institutions in many countries, they are still considered a new technology in Saudi Arabia. To identify six factors that can influence ease

of use, he employed Partial Least Squares Structural Equations Modeling (PLS-SEM) as a method. The findings from his study also revealed that perceived usefulness is determined by five factors: content quality, learning support, system interactivity, instructional assessment, and perceived ease of use. These findings are valuable to researchers, decision-makers, and e-learning system designers working to enhance students' use of e-learning systems in higher education, particularly in areas where adoption is still limited. Liu et al. (2019) developed a 14-item instrument for research into learning management systems by applying knowledge from previous literature and utilizing the Diffusion of Innovations theory. The instrument, called the Faculty LMS Functionality Instrument (FLFI), was validated through a face validity test with 243 response sets. Subsequent analysis yielded a Cronbach alpha of 0.88 and a Kaiser-Meyer-Olkin (KMO) score of 0.87. Principal component analysis (PCA) and confirmatory factor analysis (CFA) were employed for the initial validation of the three-construct instrument. Hingorani and McNeal (2015) demonstrated how LMSs have become a popular and improved method of teaching in over 95% of higher education institutions in the United States. He highlighted Blackboard (Bb) as one of the most widely used LMSs, offering a freemium component that enables users to manually record and track student attendance in different classes. The study also discussed an in-house RFID system that automates the process of tracking students' attendance in the current Blackboard attendance system. In another study, Cavus (2006) demonstrated the effectiveness of using Moodle LMS and the GREWPtool collaborative editor for teaching and learning in pilot research conducted at Near East University during the fall of 2004/5. The study involved 36 students enrolled in Java and Pascal programming classes. Results showed that incorporating a collaborative learning tool into an LMS improved learning efficiency. The study also demonstrated the effectiveness of using LMS and collaborative tools in teaching programming languages such as Pascal and Java in a web-based environment. These findings align with Cavus's later study in 2014, which suggested that learning management systems have become increasingly popular and that technology plays a significant role in modern education, reshaping the teaching and learning process. He argued that learning management systems positively impact education and that natural sciences can greatly benefit from these systems as they enable the representation of phenomena, experimental research, and the creation of models and problem-solving applications (Cavus and Alhih, 20214). Meinel et al. (2012) discussed the evolution of the LMS from a basic tool for lab course and exam sign-ups to a comprehensive system that supports the administration of entire university courses. LMSs now perform tasks such as course registration, student data management, webpage creation, exercise and test sheet design and administration, and certificate design. They are also largely free to use and can be adapted to any course management system. Finally, regarding the importance of LMSs, Cantabella et al. (2019) presented a paper on their growing significance in higher education teaching models. He used the Catholic University of Murcia as a case study to analyze student behavior over four academic years, based on their learning modality (on-campus, online, and

blended). The study assessed the number of LMS accesses, tools used by students, and events associated with them. Due to the significant volume of data generated by users in the LMS (up to 70 GB in this study), statistical and association rule techniques were employed alongside a Big Data framework to expedite statistical analysis of the data. Visual analytic techniques were used to evaluate the results and identify deficiencies in students' use of the LMS. Topazal et al. (2021) created a stable and trustworthy framework for end-users. In his study, he discussed the evaluation and deployment of a CMS to address issues in existing systems. By lowering costs, eliminating operator errors, and saving time, the university could increase its reach. The proposed CMS and administrator would be able to manage the course, register new students, and change student passwords. The proposed system has numerous benefits, including portability and extraordinary flexibility. The findings showed that the CMS is safe, effective, reduces time wastage, decreases reliance on paper-based work, and encourages the use of online-based course registration. In 2021, the advent of the COVID-19 pandemic demonstrated that online education helped restore learning. After COVID-19, many educational institutions have continued to offer synchronous and asynchronous learning, with teaching taking place via the internet. The institutional LMS played a vital role in ensuring uninterrupted learning and student engagement during the pandemic-induced large-scale migration to online curriculum delivery. Veluvali and Suriseti (2021) highlighted existing literature on how effective LMS can make the learning process interactive, student-centric, and responsive to the needs of diverse learners in higher education by drawing heavily from previous works, learnings from MOOC platforms, and observations from LMS applications in corporate training. Turnbull et al. (2021) outlines the creation of an e-learning platform for the Lamia Technological Educational Institute's Department of Electronics. The departmental database is used by the e-learning platform to automatically enroll students in courses and assign teachers as course tutors. It provides students access to information such as their past exam grades, courses completed, and current status, while also giving teachers access to statistical information about their pupils' progress. The architecture and implementation of the e-learning platform are detailed in (Turnbull et al., 2021). Graham (2019) noted that technology and online education are on the rise. Distance education is one of the most important trends in today's historically black colleges and universities. This phenomenological research report presents the results of 12 experiences of higher education faculty members at an HBCU who transitioned from face-to-face teaching to distance education instructional delivery and then back to face-to-face teaching. Ishaq and Walugembe (2022) investigated teachers' and students' perceptions of using the e-LMS at Gombe State College of Nursing and Midwifery in Nigeria, considering a population of 550 teachers and students. The sample was determined using the Krejcie and Morgan table, resulting in a sample size of 226, which was analyzed using Structural Equation Modeling (SEM) and AMOS. The results indicated that awareness and attitudes negatively impacted teachers' and students' use of the e-LMS (ELMS), while knowledge and environmental factors had a positive impact. The

study suggested additional funding and recommended further reorientation and bridging of the skills gap among teachers and students regarding ELMS. A study conducted by Anand and Eswaran (2018) indicates that we are in the era of the Internet and smart devices, where learning materials and archives are widely available. The Learning and Content Management System (LCMS) supports the needs of both teachers and e-learners, providing seamless synchronization between them to enhance their experience. MOODLE, a free and open-source software, is utilized as a tool for creating an LCMS for an engineering course (Computer Architecture). MOODLE's features were leveraged to meet various requirements such as content creation, course scheduling, course registration, creative learning, quizzes, assignments, blogs, assessments, and analysis. It was found that MOODLE is a rich platform for LCMS and is well-suited for academic environments. Snowball and Mostert (2008) discusses the challenges of teaching large classes, which are well-documented in higher education literature. Noting that ICTs have the potential to address some of these issues, he cautions that when used incorrectly, they can perpetuate entrenched practices and merely support performance models of teaching that encourage transmission learning approaches. The article discusses the impact of implementing a learning management system (LMS) in a first-year introductory macroeconomics course with 600 students in a blended learning environment. The course coordinator, lecturers, and an educational technologist shared their experiences, and data on student perceptions were collected via a course evaluation questionnaire. The findings indicated that the LMS was successful in several areas, including improving lecturers' accessibility to students and encouraging interaction and participation in online discussion forums. Rukkayya et al. (2020) explored the factors that influence the use of the Moodle e-learning platform for teaching at Ahmadu Bello University, Zaria. A qualitative case study research design was adopted, and a purposive criterion-based sampling technique was employed to select ten participants from the Faculty of Education. Data were analyzed using qualitative content analysis. The study found that the factors influencing the use of the Moodle e-learning platform by lecturers include a lack of technical support and lack of awareness. The research recommended that the faculty management request two technical support Literature has shown that LMSs are increasingly used in modern education as a technology to reshape the teaching-learning process. Also, they are widely used in higher education institutions in many countries, but they are still considered a new technology in some countries like Saudi Arabia (Binyamin et al. (2019). In Nigeria, it is equally a new technology occasioned by the advent of the COVID19 pandemic. The literature review underscores the global recognition and adoption of Learning Management Systems (LMSs) as integral tools for enhancing teaching and learning experiences, particularly in countries like the United States, the United Kingdom, Canada, Australia, and increasingly in Saudi Arabia, where Binyamin et al. (2019) notes they are still considered a new technology. The studies identify key factors influencing LMS effectiveness, such as perceived usefulness, content quality, learning support, and system interactivity, which are crucial for educators, system designers, and

policymakers to improve implementation and user satisfaction. The evolution of LMSs from basic tools to comprehensive systems capable of supporting various educational tasks is particularly relevant given the acceleration of technology's role in education, as highlighted by Meinel et al. (2012) and Cantabella et al. (2019). The rigorous research methodologies employed, including Partial Least Squares Structural Equations Modeling and exploratory and confirmatory factor analyses, demonstrate a commitment to understanding user acceptance and effectiveness in different contexts. However, challenges remain in specific regions like Nigeria and Saudi Arabia, where issues such as infrastructure and resistance to change hinder adoption. The COVID-19 pandemic has further accelerated the adoption of online learning platforms, with LMSs playing a pivotal role in ensuring continuity of education during this period, as noted by Veluvali and Suriseti (2021). The diverse applications of LMSs in various educational settings, including collaborative learning and data analytics, illustrate their adaptability to meet the needs of different learner profiles. Lastly, the literature suggests future research directions focused on user training, technical support, and context-specific applications of LMSs, thereby enhancing their effectiveness in improving educational outcomes.

3. Methodology

The methodology adopted in this work is the **pragmatic methodology** or **mixed-methods approach**. The methodology emphasizes practical implementation through a series of well-defined stages, such as planning, setup, training, deployment, and evaluation, which are crucial for real-world applications of educational technology. The structured flow through various stages allows for continual assessment and improvement, highlighting adaptability and responsiveness to the needs of the university. The use of both qualitative and quantitative data collection methods—such as surveys for evaluating acceptance among lecturers and students—indicates a mixed-methods approach, which combines numerical data with in-depth feedback. Involving lecturers and students in training and evaluation signifies a participatory approach, which is essential in educational research to ensure that the solutions developed are user-centered and contextually relevant. This is depicted in the LMS Implementation Process Flowchart in Figure 1.

The following five (5) stages were taken:

1. **Planning and Preparation:** This stage involves researching and selecting the right LMS for the University's needs, understanding the scope of the project, and creating an implementation plan. Table 1 shows the study timeline

Table 1: Timelines of Activities

<i>Activities</i>	<i>Duration</i>
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A review of the existing MOODLE and installation of any necessary software	2 weeks
Identification of lecturers from various departments to be trained on instructional material design	2 weeks
Training of Lecturers on instructional material design using ODL standard with their lecture notes.	1 week
Train Lecturers/Teachers on how to manage their courses on the LMS	8 weeks
Train students on the use of the LMS	8 weeks
Upload of lecture notes/contents by lecturers	5 weeks
Carryout a survey on lecturers' acceptance of the LMS at the university	6 weeks
Carryout a survey of students' acceptance of the implementation of the LMS on Campus	6 weeks

2. Setup and Configuration: During this stage, the LMS was installed and configured with the ODL specifications. This includes setting up the user database, creating courses, and uploading content.
3. Training and Testing: Once the LMS was set up and configured, it was tested to be sure of its functionality. At this stage, training was also conducted for administrators and lecturers. A total of 23 lecturers drawn from various departments of the university participated in the training, in addition to this, 9 research committee members also participated. Participants were drawn from various departments and faculties to act as champions in the departments they came from. The training programme was divided into 2 days and each day has 2 sessions namely; theoretical and practical. The first day focused essentially on the theory of LMS while the second day focused on the practical aspect of the platform. The training was adjudged a success as most of the participants left the workshop feeling confident and empowered to create and upload their courses to the LMS platform.
4. Deployment: This stage includes making the LMS available to users and providing support for any issues that may arise. It also included course development reviews. The deployment was implemented on a subdomain in the university website.
5. Evaluation and Maintenance: After the LMS was deployed, it is monitored and maintained to ensure that it meets the University needs. Maintenance is also conducted to ensure that it is up to date and functioning properly. Backups are regularly taking to ensure there will be no occasion for downtimes. The evaluation is also performed by carrying out a survey on lecturers' acceptance of the LMS at the university as well as the students' acceptance of the implementation of the LMS on Campus. As we write, most lecturers are still working on their courses, making efforts to get them uploaded to Moodle platform.

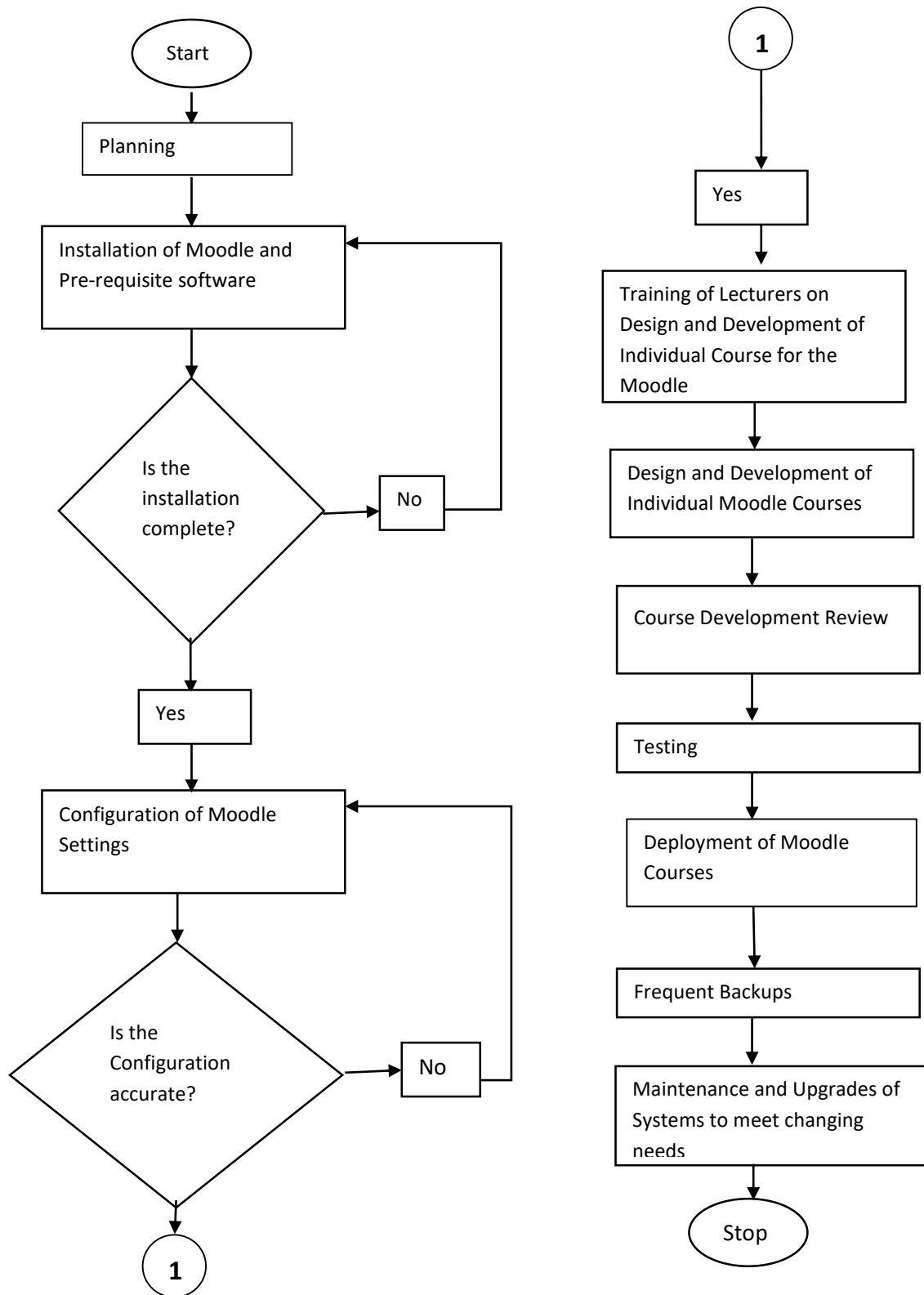


Figure 1: LMS Implementation Process Flowchart on Moodle eLearning Platform at Federal University Lokoja

4. Results and discussion

The results of this study led to the successful deployment of a Learning Management System (LMS) at the local university, now accessible via the live URL: <https://lms.fulokoja.edu.ng/>. This platform represents a significant enhancement for the university's educational infrastructure, addressing the urgent need for online learning solutions in the wake of the COVID-19 pandemic. Initial projections indicate that approximately 50% of lecture notes in an Open Distance Learning (ODL) format are expected to be uploaded by lecturers for teaching in a blended mode during the initial rollout phase. This is a critical milestone, as it aligns with the study's objectives of increasing accessibility to course materials and fostering a more flexible learning environment. The commitment of the faculty to embrace this transition to blended learning is essential for its success, as it not only modernizes the delivery of education but also caters to the diverse needs of students who may not be able to attend physical lectures due to various constraints. Moreover, the phased approach to uploading additional courses reflects an understanding of the evolving educational landscape. As the university adapts to post-COVID-19 realities, it aims to incorporate more courses into the LMS, further enriching the learning experience for students. This gradual implementation allows for continuous feedback and adjustments, ensuring that both lecturers and students are adequately supported throughout the transition. The feedback received from the training workshops conducted as part of the LMS implementation has been overwhelmingly positive. Participants expressed enthusiasm and optimism regarding the platform's potential to enhance teaching and learning outcomes. This enthusiasm is vital, as it indicates a readiness among faculty and students to engage with the LMS and integrate it into their educational practices. In addition to enhancing course delivery, the implementation of the LMS fosters a culture of continuous learning and improvement within the university. By providing a centralized platform for course materials, students have the opportunity to access resources at their convenience, promoting self-directed learning and allowing for greater flexibility in managing their academic schedules. The implications of this study extend beyond the immediate benefits of improved access to course materials. The deployment of an LMS can serve as a model for other institutions facing similar challenges in developing countries, showcasing how technology can be leveraged to enhance educational delivery. As such, this initiative not only addresses the needs of the university but also contributes to a broader movement towards digital education, ensuring that institutions are better equipped to handle future disruptions. The results of this study underscore the potential of the LMS to transform the educational landscape at the university. By committing to the development and implementation of a blended learning model, the institution is taking proactive steps to ensure that it meets the needs of its students in a changing educational environment. The focus on uploading lecture notes in ODL format and the ongoing expansion of courses available through the LMS represents a significant advancement in the university's

efforts to enhance the quality and accessibility of its educational offerings. Figure 2 shows the screenshot of the deployed LMS site interface.

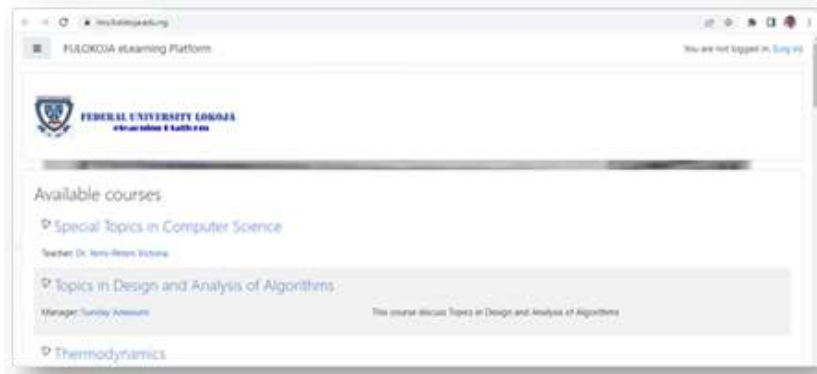


Figure 2: Screenshot of deployed LMS

5. Conclusion

This study was conducted to institutionalize the use of a Learning Management System (LMS) in a local university to facilitate open distance learning, particularly in response to the disruptions caused by the COVID-19 pandemic. The findings indicate that adopting an existing open-source LMS platform can effectively address the challenges of inadequate infrastructure and the growing demand for online education in developing countries. The implementation of the LMS, coupled with training workshops for lecturers and students, has generated significant enthusiasm and commitment among participants. These workshops served as a crucial initial step toward actualizing a blended mode of lecture delivery within the university. By empowering educators to design instructional materials and equipping learners with the necessary skills to navigate the LMS, the institution is poised to enhance its educational offerings and reach a broader student population. The work demonstrated that with proper planning, adequate infrastructure, and a focus on training, universities can successfully integrate LMS solutions into their systems. This will not only improve the quality of education but also ensure accessibility for all students, thereby changing the narrative for institutions in developing nations and establishing a sustainable model for future educational delivery.

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