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Research Article

The Enhancement of Learning Management System for Effective Learning: University Students' Perspective

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ABSTRACT

Learning Management System (LMS) is one of the most significant innovations used to enhance the delivery of educational knowledge to students globally, and this has been enabled by the rapid growth in information technologies. Despite the widespread adoption, numerous studies highlight the need to enhance LMS platforms to better support effective learning, particularly from the perspective of higher education institutions especially the university students who are the primary users. Therefore, this research aims to determine how learning management system (LMS) can be enhanced for effective teaching and learning outcomes. The study employed a qualitative research approach and utilized convenience sampling method to select 25 students at a university. Thematic analysis was employed for data analysis and the four themes that emerged are awareness, user friendly interface, personalized learning and infrastructure. It can be deduced from the findings of the study that for effective learning, it is crucial that the educational officials consider enhancing LMS platforms to align with the student needs by improving usability, personalization, collaboration, infrastructure and institutional support. Policy makers should ensure that all these are taking into consideration for increased engagement, effective teaching and seamless learning outcomes.

Keywords: Learning Management System, technology, student, personalized learning, university

Introduction

With the recent advancement in digital technologies, universities are gradually unlocking the potentials used via information and communication technologies (ICT) to improve teaching method and learning process. Learning Management System (LMS) is one of the most significant innovations used to enhance the delivery of intellect and education to students globally, and this has been enabled by the rapid growth in information technologies. The advancement of learning management system provides instructors with interesting tools which facilitates educator-to-student communication, tracking of students' progress and sharing of course-content online.

Simon et al. (2024) assert that learning management system also provides students with interactive features such as threaded discussions, video conferencing, and discussion forums. Moreover, Papadakis, Kalogiannakis, Sifaki and Vidakis (2017) highlights that students' perception should be considered in the implementation of LMS because they are the main users of the system. A recent study by Maune (2023) posits that there has been an increase in the adoption and use of learning management systems (LMS) in sub-Saharan Africa with the aim of improving the quality of delivery and increasing the access to education via distance learning.

However, despite the widespread adoption of LMS, there are concerns about their effectiveness in fostering, engaging, interactive, and personalized learning experiences. Therefore, this research study seeks to determine how learning management system (LMS) can be improved to enhance teaching and learning.

Literature review

Information and Communication Technology (ICT) is an essential requirement for the development of a knowledge-based economy hence, the adoption of Learning Management System (LMS). Alizadeh (2019) indicated that this (LMS) has been used at the universities to enhance teaching and learning environment. It has been established that the advancement of technology in education provides opportunities for developing countries to advance to the global knowledge economy (Kahiigi and Semwanga, 2019). There are various online learning technologies used in learning, amongst them, the learning management system (LMS) is popularly used as online delivery medium within higher education institutions. Akwene (2024) asserts that learning management systems (LMS) have been in existence for many decades but their integration in education was limited until the outbreak of COVID-19 in 2019 which made it to receive global attention. Some of the popular LMS platforms are Moodle, Canvas, Blackboard, Google Classroom and Schoology.

According to Chigozie-Okwum et. al. (2018), learning management system (LMS) is a software application used to plan, implement and assess a specific learning process. The authors assert that LMS allows instructors to distribute materials, assignments, communications and other aspects of instructions of their courses to students. The effective use of LMS depends on certain factors related to the behavioural attitudes of instructors and students, university support and applied information technologies (Findik-Coşkunçay, Alkiş and Özkan-Yildirim, 2018). LMS have been acknowledge by researchers to have comprehensive features, enhanced communication, cost-effectiveness as well as easily accessible and flexible.

Masaeid et al. (2022) posit that learning management system has a great influence on the progress of both instructors and students, as well as improve the quality of teaching methods. However, the adoption of LMS in developing countries have been negatively affected by unreliable power supply, inadequate ICT infrastructures and resources (Kahiigi and Semwanga, 2019). Maina and Nzuki (2015) listed the barriers that affects LMS to include infrastructure, faculty effort, technology satisfaction, and graduate's competency, high cost of technology, poor decisions, competition and the absence of a business strategy while Akwene (2024) described ease of use, time, exposure, network challenges as factors hindering the use of LMS.

In this 21st century, teaching has become a more complex and difficult profession because students are exposed to digital technologies, thereby driving teachers to the direction of integrating technology in an effective and suitable way into instructional tasks (Ammade, Mahmud, Jabu and Tahmir, 2020). It is assumed that higher education contributes significantly to social change, individual development, and economic growth, thereby leading to the general growth of a nation (Ghahramanian et al., 2023). Therefore, the education sector has the responsibility and vital role to play in the preparation of societies to face a technology-oriented working environment, hence integrating technology into the classroom, creates a more conducive environments towards the improvement in teaching and learning (Ammade et al., 2020).

According to Andreas (2020), technology enables teachers and students to have access to specialized materials which is beyond textbooks, in various formats, and in ways that time and space are bridged. The successful use of these systems in higher education is important for the implementation, management and continuous improvement of learning management systems to increase the quality of learning (Findik-Conkuncay et al., 2018). Şahin and Yurdugül (2022) acknowledge that LMS supports students learning autonomy, as students who take responsibility for their own learning tend to be more successful in online learning environments. In other words, the success of LMS integration depends, in a considerable extent, on students' acceptance and use of the technology. While LMS platforms facilitate various educational activities, this research seeks to explore ways to improve LMS to enhance the learning process.

Research methodology

The study employed a qualitative research approach. Qualitative research method allows the researcher to evaluate the quality of the subject, level of findings, and the kind of picture they are presenting based on the researcher's point of view (Ansari et al., 2022). The choice of using a qualitative research approach arose from the fact that the researcher will be able to gather in-depth insights on how students perceive that LMS can be improved for effective learning outcome. Convenience sampling method was used to select 25 students at a university. Thematic analysis was employed for data analysis. According to Naeem, Ozuem, Howell and Ranfagni (2023), thematic analysis is used to identify and interpret patterns or themes in a data set, leading to the creation of new insights and understanding. The data set collected was coded, after which themes emerged from the responses, the themes were refined, and the findings were reported accordingly.

Results and discussion

This section presents a comprehensive thematic content analysis of the qualitative data that was gathered in the field. Twenty-five participants took part in this study. The transcript was reduced to codes and gave rise to four themes (awareness, user friendly interface, personalized learning and infrastructure) that form the focus of the qualitative analysis. Below is the detailed presentation of the results:

Theme 1: Awareness

LMS is designed to connect teachers and students in an online platform. Majority of the students believe that LMS makes them to learn from the comfort of their homes without going to a conventional learning centre, however, there is need to do more by creating awareness on the usefulness of LMS. One of the students highlighted that "creating awareness about LMS and its importance" is crucial for effective learning outcomes. Another student mentioned that it should be introduced from first year and making it available for every student because it will ease a lot of burden on both the students and the parents. The cost of buying handout (photocopied printed reading course materials) and other study materials is very high. But, with the lecture materials posted on the LMS, students will have less to worry about on the cost of textbooks and other hard copies of study materials. This finding is in line with Akwene (2023) who iterated that lack of awareness are part of the numerous challenges faced by higher education institutions.

When students are not aware or familiar with LMS, it makes it difficult for them to access the learning materials or even participate in online courses thereby hindering their overall learning experience. Previous studies have shown that awareness is a strong determinant of students' learning outcomes (Bafunso and Kolawole, 2021; Olatunji and Akinsulire, 2022). Hence the need for institution to organize seminars, workshops or tutorials on the effective use of LMS for efficient and effective learning outcome.

Theme 2: User friendly interface

Some students claim that the interface of the LMS is not user friendly. One of the factors influencing the effective use of any educational technology is the ease of use of the system. When a system is not user friendly, it makes it difficult for the students to navigate the system. Another student asserts that lecturers should ensure that all the students are on board with integrating tools and functionality of the LMS into their day-to-day activities. In other words, the designers of the LMS should design it in such a way that the interface is friendly while ensuring that all necessary functionalities or features are included. According to Olugbade, Ojo and Tolorunleke (2023), the usability of learning management systems as well as the overall user experience have a significant impact on its adoption and effectiveness. Therefore, it is essential that the designers understand the usability issues and work towards identifying potential improvements which is crucial for ensuring that the learners enjoy a positive user experience. Additionally, Şahin and Yurdugül (2022) posit that designs that are based on learning analytics have the capability to improve students' self-regulation skills.

Theme 3: Personalized learning

Personalized learning is an educational approach used by educators to customize learning to the needs of each student. It has been established by scholars that personalization of LMS platforms can significantly enhance students' engagement. Benabbes et al. (2023) specified that students come from different background, they have their strength and weaknesses, they understand and see things differently therefore, their learning systems should be tailored to their preferred learning style to meet their unique needs. Responses from the students suggests that personalized learning paths should be enabled for effective learning outcomes. A significant point highlighted by a student is that "*LMS will help improve my problem-solving skills, which will boost my learning speed in my field of study*" while another student asserts that "*admins can take advantage of powerful personalisation functionality and tools to create an engaging and tailor-made learning experience for users*". These findings indicate the need for educators to create personalized learning environments and prioritize accessibility features to cater for diverse learners. According to Şahin and Yurdugül (2022), LMS should be personalized according to the needs of the students while keeping track of students' learning process. A study by Shaame et al. (2023) also found that personalized Moodle LMS increased students' motivation and the understanding of course content.

Theme 4: Infrastructure

Poor infrastructure has been identified by scholars as factors that hinder the effective use of LMS. Infrastructure in this regard refers to ICT infrastructure, internet access, lack of training as well as high internet cost (Mtani and Mbelwa, 2022; Akwene, 2024). Some of the students suggested that the LMS platform should have an offline modality where they can use it while their data is off. The reason for this is because of the high cost of internet accessibility, which is not affordable by many students. Another reason could be unstable internet connectivity and the cost of internet data. They perceive that the offline modality could remove many hurdles while enhancing learning outcomes. One of the students suggested that data should be provided for students on monthly basis to motivate for the use of the LMS. These findings are in line with the findings of Alizadeh (2019) who clamours that free quality internet, and the equipment required for using the LMS should be provided for the students to enhance effective teaching and learning outcomes.

Recommendations and Conclusion

This research explores the current state of Learning Management Systems (LMS) in higher educational settings and identifies opportunities for improvement to enhance students learning outcomes. Through a comprehensive review of existing literature on LMS, this study aims to provide feasible improvements that align with the evolving needs of the students. The findings suggests that LMS platforms does have a significant influence on students' engagement, motivation, and academic success. However, for effective student learning outcomes, more awareness needs to be created to equip students on how to access and interact with the LMS. Secondly, the effective use of LMS depends on the usability of the system, in terms of user friendliness and how personalized the system is. And lastly, the process of learning via the LMS will be smoothly facilitated significantly if the students are provided with enough data to be able to work with the system properly and appropriately.

By evaluating the usability, interactivity, accessibility, and integration of LMS, this research provides actionable recommendations for enhancing the learning experience such as improved user interface to make the system more intuitive for students and instructors, implementing adaptive learning technologies to tailor contents to individual student needs, ensuring that the LMS platforms is mobile friendly to cater for students who prefer learning from anywhere and at any time with their mobile devices. Additionally, more features should be added for real-time collaboration and integrate the LMS with AI and tools like Google Docs or Zoom to create a more interactive learning environment.

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