

Exploring undergraduate students' accessibility and usability of learning management systems for educational purposes in DLI, University of Lagos

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ABSTRACT

This study investigates how undergraduate students access and use Learning Management Systems (LMS) for educational purposes, aiming to understand the dynamics that shape their digital learning experiences. We specifically assess LMS accessibility and usability, examine the influence of gender on usability, and explore the effect of academic level on LMS usability. Using a descriptive survey design, the study was conducted among students at the Distance Learning Institute of the University of Lagos. A sample of 150 respondents was selected from a total population of 10,464 students across three academic levels (200, 300, and 400). Data was collected using a structured questionnaire validated for reliability (Cronbach Alpha = 0.75) and content validity by experts. Analysis indicates that undergraduate students generally find LMS accessibility features adequate and perceive LMS usability positively. Gender-specific preferences and experiences were considered in the study, revealing no statistically significant difference in LMS usability between male and female students. Similarly, academic level showed no significant impact on LMS accessibility and usage among students. The study concludes that ongoing support and investment in LMS technology are essential for effective higher education. Recommendations include customizing LMS functionalities to meet diverse student needs and continuously gathering feedback to enhance LMS features. These strategies are crucial for optimizing digital learning environments and ensuring they cater to the varied requirements of all students. In summary, this research provides insights into improving educational technology integration in higher education settings, emphasizing the importance of user-centered design and continuous improvement of LMS platforms.

Keywords: *undergraduate students, learning management systems, accessibility, usability, educational purposes*

INTRODUCTION

The rapid advancement of mobile and computer technologies has spurred significant development in Internet applications, catering to various needs of society. In higher education, the adoption of Web 2.0 technologies has facilitated the provision of resources, information, and interactive experiences through Learning Management System (LMS) platforms. LMS automates the administration of training events and serves as a purpose-built computer system for administering online courses, distributing course content, and supporting teacher-student collaboration. For example, Fathema et al. (2015) found that LMSs significantly streamline course management and enhance educational efficiency. It facilitates the planning, distribution, and evaluation of specific learning processes, organizing user learning interventions, and delivering learning content and resources. Escobar-Rodriguez and Monge-Lozano (2012) also highlighted that LMSs help in systematically organizing and delivering educational content, thereby improving learning outcomes.

A Learning Management System (LMS) is a software application that enables users or instructors to disseminate information systematically, employing appropriate pedagogical approaches. LMS facilitates information sharing and online collaboration, allowing instructors to monitor student engagement and assess their performance. Thompson et al. (2016) found that LMS features like video conferencing and group discussion tools significantly enhance student learning experiences and foster better communication between students and instructors. Moreover, Brown and Johnson (2007) consider LMS as a versatile tool for training, evaluation, and tracking results, while Al-Khalifa (2010) views it as a platform enabling students to complete tasks efficiently, upload various file types, access information anytime, anywhere, and communicate electronically with peers and tutors. LMS encompasses subject and pedagogical management tools for delivering online teaching and learning activities. Its adoption and usage are driven by its functionalities, serving as a complementary medium for course content delivery in both blended and online learning environments. Recent studies by Asiri et al. (2012) and Al-Busaidi & Al-Shihi (2010) highlight LMS's role in enabling students to access course information according to their preferences, facilitating assignment submission, note-taking, and communication between students and instructors. LMS not only aids in saving time and resources for educational institutions but also enhances pedagogical processes to meet the evolving demands of information societies (Hernandez-Ramos et al., 2014).

In academic settings, the acceptance of learning management systems, also known as Virtual Learning Environments or Course Management Systems, has grown significantly (Paulsen, 2003; Khambari et al., 2010). Nair and Patil (2012) define LMS as a set of software tools and web-based technologies supporting the planning, delivery, track-

ing, and management of online education and training. It offers lecturers the ability to create and deliver content, track student participation, and evaluate performance.

Recent scholars have continued to emphasize the growing complexity of the academic landscape, shaped by globalization, technological advancements, and evolving societal demands. For instance, Lim et al. (2020) and Dhawan (2020) highlighted how educational institutions are increasingly adopting online and blended learning models to enhance access to education and meet the diverse needs of modern learners. This transition to digital learning environments requires students to develop critical skills, including time management, self-regulation, and digital literacy, in order to effectively engage with and benefit from these platforms.

Despite the widespread adoption of Learning Management Systems (LMS) in higher education, there remains a gap in understanding the factors influencing undergraduate students' accessibility to and utilization of these platforms for educational purposes. While existing literature highlights the benefits and functionalities of LMS, limited research has delved into the specific challenges and barriers faced by students in navigating and effectively engaging with these systems. Additionally, as educational institutions increasingly rely on digital learning modalities, it becomes imperative to explore how students' digital literacy skills, technological preferences, and learning behaviours intersect with their usage of LMS.

In this context, the accessibility and utilization of Learning Management Systems among undergraduate students assume critical importance. These platforms serve as gateways to the digital learning ecosystem, offering students a centralized hub for accessing course materials, engaging with instructional content, and collaborating with peers and instructors. Understanding the patterns of LMS usage among undergraduate students is essential for educators and institutions seeking to optimize the learning experience and support student success in the digital age.

Against this backdrop, this study aims to explore undergraduate students' accessibility to and usage of Learning Management Systems (LMS) for educational purposes. By investigating the factors influencing students' interactions with LMS, the study seeks to uncover the dynamics shaping their digital learning experiences and inform strategies to enhance the effectiveness of digital learning platforms in higher education contexts. Through a comprehensive examination of LMS accessibility and usage patterns, this research endeavours to contribute valuable insights to the ongoing discourse on digital pedagogy and educational technology integration.

To achieve these aims, the study will assess the accessibility and usability of Learning Management Systems (LMS) for undergraduate students, while also examining how gender and academic level influence their experiences with these platforms. The research will be guided by the following questions:

1. What are the levels of accessibility and usability of learning management systems (LMS) for students?
2. How does gender influence the usability of learning management systems (LMS)?
3. In what ways does the level of study affect the usage of learning management systems (LMS)?

Correspondingly, the study will test hypotheses regarding potential differences in LMS usability based on gender and academic level. By addressing these objectives, questions, and hypotheses, the study aims to provide a thorough understanding of the factors that affect how undergraduate students access and use LMS, thereby contributing to the improvement of digital learning environments in higher education.

METHODOLOGY

This study employed a descriptive survey design, suitable for collecting data on opinions and feelings of respondents over a period of time, seeking to describe variables associated with a phenomenon of interest. The study was conducted among students selected from distance learning institute of University of Lagos. The study involved selecting a sample of 150 respondents from three different academic levels (200-level, 300-level, and 400-level) from a total population of 10,464 students. The distribution of the student population across these levels was as follows: 2,262 students at the 200 level, 2,300 students at the 300 level, and 1,926 students at the 400 level. Using a simple random sampling technique, the researcher selected 51 students from the 200 level, 65 students from the 300 level, and 34 students from the 400 level. Data was collected using a structured questionnaire consisting of two sections: Section A for biographical information and Section B for item statements derived from the research questions. The questionnaire contained 20 items, scored on a four-point Likert scale: Strongly Agreed (4 points), Agreed (3 points), Disagreed (2 points), and Strongly Disagreed (0 point).

The validity of the questionnaire was scrutinized by experts for face and content validity. The reliability testing was conducted through pilot testing with selected students not part of the sample size, to ensure suitability and appropriateness to the field situation, eliminate irrelevant questions, and remove ambiguities. Cronbach Alpha was adopted to determine a reliability coefficient of 0.75 for the instrument. Data collection was carried out by the researcher and two proctors, ensuring proper completion of questionnaires by respondents. Completed questionnaires were collected immediately by hand and compiled for analysis. Data analysis was performed using frequency, mean and standard deviation to answer research questions while research hypotheses 1 and 2 were tested using independent t-test and ANOVA at 0.05 level of significance

RESULTS

This section presented a summary of the major attributes of the respondents in the study. The personal information of the respondents and the results of the analysis are also presented in tables and figures

Table 1: Personal Information of Respondents based on gender.

Gender	No. of respondents	Percent
Male	88	58.7
Female	62	41.3
Total	150	100

Table 1 provides a breakdown of the respondents' gender in terms of both the number of individuals and the percentage they represent within the total sample. There are 88 male respondents, which constitutes 58.7% of the total sample. This indicates that the majority of the respondents are male. Female respondents are 62, making up 41.3% of the total sample. This distribution reflects the gender composition of the respondents, revealing a predominance of male participants over female participants.

The pie chart illustrates the gender distribution of the respondents, consistent with the data discussed earlier. The pie chart visualizes the gender distribution among the respondents in the study. According to the chart, 88 respondents are male, representing 58.7% of the total sample, while 62 respondents are female, making up 41.3%. This visual representation corroborates the numerical data provided earlier. The pie chart supports and visually emphasizes the earlier analysis, showing a meaningful but smaller proportion of female respondents compared to their male counterparts. This gender distribution is crucial for understanding the demographic context of the study and interpreting the findings accurately.

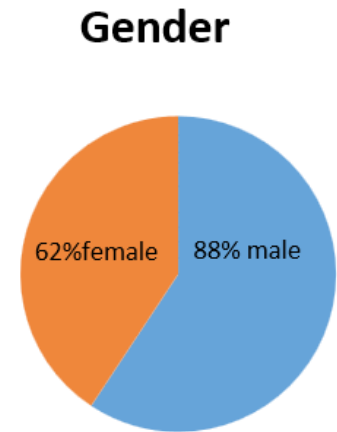


Fig. 1: Gender of the respondents

Table 2: Personal information of respondents based on student level

Gender	Number of respondents	Percent
200	51	34
300	65	43.3
400	34	22.6
Total	150	100

Table 2 provides a breakdown of respondents according to their academic levels—200L, 300L, and 400L—in both number and percentage. There are 51 respondents from the 200 level, which constitutes 34% of the total sample. This indicates that slightly over one-third of the respondents are in their second year of undergraduate study. The largest group of respondents comes from the 300 level, with 65 students, making up 43.3% of the total sample. This suggests that nearly half of the respondents are in their third year, indicating a strong representation from this cohort. The smallest group of respondents is from the 400 Level, with 34 students, accounting for 22.6% of the total sample. This shows that less than a quarter of the respondents are in their fourth year of undergraduate study. This distribution helps in interpreting the usability perceptions of the Learning Management System (LMS) and based on the respondents' academic levels.

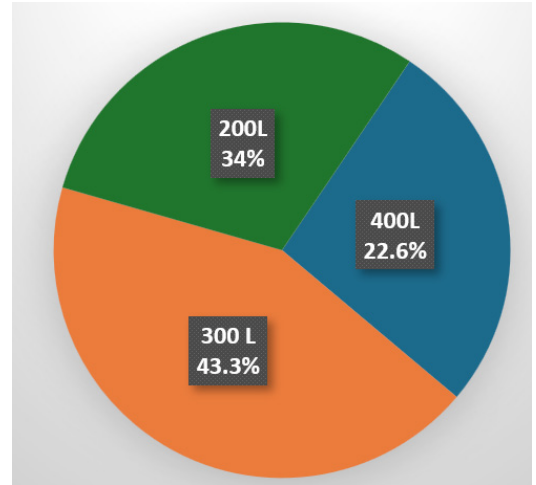


Fig. 2: Academic levels of the respondents

The pie chart represents the distribution of respondents based on their academic levels—200L, 300L, 400L. This chart supports and enhances the understanding of the table's data by offering a clear visual breakdown. Represented in green, 200 level students make up 34% of the total respondents, with 51 students. Illustrated in orange, 300 level students are the largest group, constituting 43.3% of the respondents, with 65 students. This prominent segment indicates that third-year students are the most represented in the survey. Shown in blue, 400 level students account for 22.6% of the total respondents, with 34 students. This smaller segment indicates a lower participation from fourth-year students. In summary, the pie chart provides a visual affirmation of the numerical data, highlighting the distribution of respondents across different academic levels. This visual aid complements the table by making it easier to grasp the proportions of students at various stages of their undergraduate journey, thus enriching the interpretation of the survey results.

- Question 1: How do undergraduate students perceive the accessibility of learning management systems.

Table 3: Undergraduate students perception on the accessibility of LMS

	Statements	Mean	SD	Remark
1	Students find the accessibility features of learning management systems adequate.	3.17	0.67	Agreed
2	Navigating LMS platforms for course materials is easy for students.	2.97	0.78	Agreed

	Statements	Mean	SD	Remark
3	Students face device-related issues accessing LMS platforms.	2.62	0.56	Agreed
4	Searching for specific content in LMS platforms is straightforward.	2.67	0.65	Agreed
5	Students view multimedia accessibility in LMS platforms positively.	2.87	0.90	Agreed
6	Text materials in LMS platforms are perceived as readable and clear.	2.63	0.84	Agreed
7	Students rate LMS platforms' compatibility with assistive tech favourably.	2.87	0.74	Agreed
8	Various factors affect students' perception of inclusivity in LMS forums.	2.06	0.88	Agreed
9	Alternative formats for multimedia in LMS platforms are well-received.	2.98	0.63	Agreed
10	Students suggest improvements for LMS accessibility.	3.01	0.76	Agreed
	Weighted Average	2.79		

The findings on table 3 shows that students agree that the accessibility features of LMS are adequate, as evidenced by a mean score of 3.17. Navigating LMS platforms for course materials is also considered relatively easy (mean = 2.97). However, there are nuances; students report facing device-related issues (mean = 2.62), which suggests a less favorable experience in terms of device compatibility. Regarding content accessibility, while searching for specific material is deemed straightforward (mean = 2.67), multimedia accessibility receives a slightly higher rating (mean = 2.87), indicating room for improvement but generally positive sentiment. Text materials are seen as readable and clear (mean = 2.63), although there is variability in individual experiences. Compatibility with assistive technologies is also viewed favorably (mean = 2.87). However, students perceive challenges in forums' inclusivity (mean = 2.06), suggesting that while the technological aspects are somewhat satisfactory, social and interactive elements may require attention. Nevertheless, alternative formats for multimedia content are well-received (mean = 2.98, SD), showing positive responses to efforts in providing diverse accessibility options. Overall, the weighted average score of 2.79 indicates that undergraduate students generally agree on the adequacy of LMS accessibility features.

- Question 2: What is the perception of undergraduate students about the usability of learning management system?

Table 4: Perception of undergraduate students on usability of LMS

SN	Statements	Mean	SD	Remark
1	I like using Learning Management System for learning	2.51	0.67	Agreed

SN	Statements	Mean	SD	Remark
2	Learning Management System is effective as it provides access to e-books, online journals etc	2.63	0.92	Agreed
3	I participate more while attending lesson through Learning Management System	3.21	0.71	Agreed
4	Learning Management System motivate me more for learning	2.81	0.58	Agreed
5	I find Learning Management System useful in my course of study	2.82	0.92	Agreed
6	It is convenient for me learning through Learning Management System	3.11	0.63	Agreed
7	I am not restricted through the Learning Management System for learning	3.14	0.68	Agreed
8	I learn more at my own pace through learning management system	2.78	0.76	Agreed
9.	Learning management system provides me helpful guidance in performing task in online classroom setting	3.08	0.65	Agreed
10	LMS provides an attractive working environment.	2.94	0.87	Agreed
	Weighted average	2.90		

In table 4, students express a favorable attitude towards using LMS for learning (mean = 2.51) and find them effective in accessing resources such as e-books and online journals (mean = 2.63). They also report active participation during lessons conducted through LMS (mean = 3.21) and feel motivated to learn using these platforms (mean = 2.81). Additionally, students perceive LMS as useful for their course of study (mean = 2.82, SD = 0.92) and convenient for learning (mean = 3.11), allowing them to learn at their own pace (mean = 2.78) without feeling restricted (mean = 3.14). They also appreciate the guidance provided by LMS in online classroom tasks (mean = 3.08) and find the LMS environment generally attractive (mean = 2.94). The weighted average score of 2.90 suggests an overall positive usability perception among undergraduate students regarding LMS. Based on the weighted average score of 2.90 from the table, the overall perception is predominantly positive, indicating that students generally find platforms useful and conducive to their learning experiences.

Table 5: Usability of LMS based on gender

	Statements	Male	Female	Remark
1	I like using Learning Management System for learning	2.78	2.65	Agreed
2	Learning Management System is effective as it provides access to e-books, online journals etc	2.90	2.58	Agreed
3	I participate more while attending lesson through Learning Management System	2.82	3.56	Agreed
4	Learning Management System motivate me more for learning	3.56	2.89	Agreed

	Statements	Male	Female	Remark
5	I find Learning Management System useful in my course of study	2.77	2.90	Agreed
6	It is convenient for me learning through Learning Management System	3.35	2.79	Agreed
7	I am not restricted through the Learning Management System for learning	2.87	2.74	Agreed
8	I learn more at my own pace through learning management system	2.09	3.88	Agreed
9	Learning management system provides me helpful guidance in performing task in online classroom setting	2.78	2.63	Agreed
10	LMS provides an attractive working environment.	3.07	2.98	Agreed
	Weighted Average.	2.89	2.96	

The table presents a comparative analysis of undergraduate students' perceptions regarding the usability and effectiveness of a Learning Management System (LMS), categorized by gender. Each row in the table corresponds to a specific statement about the LMS, while columns distinguish responses between male and female students. In terms of liking to use the LMS for learning purposes, male students reported an average score of 2.78, slightly higher than female students' score of 2.65. Similarly, perceptions of the LMS's effectiveness in providing access to resources like e-books and journals show a higher agreement from male students (average score of 2.90) compared to female students (average score of 2.58). Conversely, when it comes to aspects like participating more in lessons through the LMS and finding it motivating for learning, female students tend to express higher agreement than their male counterparts. This is evident in statements where female students scored 3.56 and 3.88, respectively, compared to lower scores of 2.82 and 2.09 from male students.

Moreover, the table highlights differences in how male and female students perceive the convenience and utility of the LMS in their studies. Female students generally rate the convenience of learning through the LMS lower than male students (average scores of 2.79 and 3.35, respectively), indicating potential disparities in how accessible and user-friendly they find the platform. However, both genders agree on the LMS's role in providing helpful guidance in online classroom settings, though male students marginally scored higher (average score of 2.78 compared to 2.63 for female students). Overall, while both male and female students generally agree that the LMS is beneficial for their learning experiences (as indicated by the "Agreed" remarks across most statements). The differences shown in their perceptions underscore the importance of considering gender-specific preferences and experiences when designing and implementing educational technologies like LMSs, aiming to enhance usability and effectiveness for all students irrespective of gender. Such insights gleaned from this comparative analysis

can inform educators and developers in tailoring LMS functionalities to better meet diverse student needs and preferences effectively.

H₀: There is no significance difference between the usability of learning management system by undergraduate students based on gender.

Table 6: T-test result of male and female undergraduate students' accessibility of LMS

Gender	No	\bar{X}	SD	Df	T	Sig
Male	88	2.999	0.35	148	-0.844	0.400
Female	62	3.060	0.46			

Significance level 0.05

The table presents the results of an independent samples t-test comparing the usability of the Learning Management System (LMS) between male and female undergraduate students. The table includes the average mean scores, standard deviations, degrees of freedom, t-value, and significance level (p-value). The results of the t-test show that there is no statistically significant difference in the usability of the Learning Management System between male and female undergraduate students. The average mean scores are very close, with males scoring an average of 2.999 and females scoring an average of 3.060. The p-value of 0.381 suggests that any observed differences in the average scores are likely due to chance rather than a true difference in usability based on gender.

Table 7: Perception of undergraduate students on usability of LMS based on level

	Statements	200L	300L	400L
1	I like using Learning Management System for learning	2.50	3.07	2.89
2	Learning Management System is effective as it provides access to e-books, online journals etc	2.67	2.92	3.05
3	I participate more while attending lesson through Learning Management System	3.09	3.05	2.78
4	Learning Management System motivate me more for learning	2.70	2.58	2.56
5	I find Learning Management System useful in my course of study	2.45	2.90	2.86
6	It is convenient for me learning through Learning Management System	3.10	2.83	3.07
7	I am not restricted through the Learning Management System for learning	3.60	3.68	3.03
8	I learn more at my own pace through learning management system	2.78	2.76	2.06
9.	Learning management system provides me helpful guidance in performing task in online classroom setting	2.08	2.67	2.98

	Statements	200L	300L	400L
10	LMS provides an attractive working environment.	2.96	2.87	3.52
	Weighted average	2.79	2.93	2.88

The table presents a comparative analysis of the usability perception of undergraduate students across three academic levels—200L, 300L, and 400L—based on their responses to various statements about their Learning Management System (LMS). Starting with the statement “I like using Learning Management System for learning,” 300L students have the highest mean score of 3.07, indicating a relatively greater liking for the LMS compared to 200L (2.50) and 400L (2.89) students. This trend suggests that middle-level students might have a more favourable view of the LMS at this stage of their education. For the effectiveness of the LMS in providing access to resources like e-books and online journals, 400L students have the highest mean score of 3.05, followed by 300L students (2.92), and 200L students (2.67). This increase in positive perception could be attributed to the higher-level students’ increased reliance on such resources for their advanced studies.

When it comes to participation during lessons via LMS, 200L students scored the highest with a mean of 3.09, indicating they might find the LMS more engaging for participation compared to 300L (3.05) and 400L (2.78) students. In terms of motivation for learning, the scores are relatively lower across all levels, with 200L at 2.70, 300L at 2.58, and 400L at 2.56. This suggests a general sentiment that the LMS may not be significantly motivating for students, regardless of their academic level. Regarding the usefulness of the LMS in their course of study, 300L students have a higher mean score of 2.90 compared to 200L (2.45) and 400L (2.86) students. This again indicates a perception that the LMS might be more beneficial for middle-level students. For convenience, both 200L (3.10) and 400L (3.07) students have higher mean scores compared to 300L (2.83) students, suggesting that the LMS is seen as more convenient for learning at the beginning and end of their undergraduate journey.

When asked if they feel restricted by the LMS, 300L students have the highest mean score of 3.68, indicating they feel the least restricted, followed by 200L (3.60) and 400L (3.03) students. Regarding self-paced learning, 200L and 300L students have similar mean scores of 2.78 and 2.76, respectively, which are higher than the 400L students’ score of 2.06. This suggests that higher-level students may find the LMS less effective for self-paced learning. For helpful guidance in performing tasks in an online classroom setting, 400L students have the highest mean score of 2.98, showing a greater appreciation for the LMS guidance compared to 300L (2.67) and 200L (2.08) students. Lastly, in terms of providing an attractive working environment, 400L students have the highest mean score of 3.52, indicating a significantly more positive perception compared to 200L

(2.96) and 300L (2.87) students. Overall, the weighted averages suggest that 300L students have the most positive perception of the LMS (2.93), followed by 400L (2.88), and 200L (2.79) students. This data provides valuable insights into how different academic levels perceive the usability of their LMS, highlighting areas where improvements could be made to enhance the learning experience across all levels.

H₀₂: There is no significance difference between the perception of undergraduate students on the usability of LMS based on academic levels.

Table 8: ANOVA on perception of undergraduates students on usability of LMS based on academic level

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	0.19845	2	0.099225	1.261	0.285
Within Groups	10.6767	147	0.07264		
Total	10.87515	149			

The ANOVA table is used to determine whether there are statistically significant differences in usability perception scores between the student's year of study (between groups).

Table 8, revealed the calculated F-calculated (1.261, $p = 0.285$) was not significant at 0.05 alpha level. In this case, with a p-value (Sig.) of 0.285, we accept the null hypothesis that there is no significant difference between the perceived usability based on students' year of study. Therefore, based on this analysis, undergraduate students level or year of study do not significantly influence their perception on the usability LMS

The analysis conducted indicates that there is no significant difference in the accessibility and usage of Learning Management Systems (LMS) among undergraduate students based on their academic level (200, 300, and 400 levels). The F-value obtained from the analysis of variance (ANOVA) test was 2.26, with a p-value of 0.103. Since the p-value is greater than the significance level (alpha) of 0.05, the null hypothesis was accepted. This implies that the level of study does not have any influence on undergraduate students' usability of LMS.

DISCUSSION

The weighted average score indicates that undergraduate students generally find the accessibility features of Learning Management Systems (LMS) to be adequate. However, this score also suggests that there are specific areas in need of improvement, particularly regarding device compatibility and forum inclusivity. Recent empirical studies corroborate these findings. For instance, a study by Al-Fraihat et al. (2020) found that while students appreciated the availability of LMS on multiple devices, inconsistencies

in functionality across different platforms (e.g., mobile vs. desktop) posed significant barriers to effective learning. Similarly, W3C (2020) emphasizes the importance of inclusive design in online forums, noting that forums that are not accessible to students with disabilities can significantly hinder their participation and engagement. These insights suggest that universities should prioritize enhancing the device compatibility of their LMS and ensuring that all forums and interactive features are inclusive for students with varying needs.

The perception of undergraduate students on the usability of is predominantly positive. Findings indicates that students generally find LMS platforms useful and conducive to their learning experiences. However, there is room for improvement, especially in enhancing the attractiveness of the user interface and addressing specific usability concerns. Supporting this finding, a study by Islam (2019) highlights that the aesthetics of an LMS, including its interface design and ease of navigation, significantly impact students' satisfaction and engagement. Additionally, Albelbisi et al. (2018) stress the importance of continuous improvement in LMS features to address usability issues, suggesting that iterative feedback from students should be integral to LMS development processes. These studies underline the need for ongoing enhancements to LMS platforms to better meet the evolving needs of students. The differences in perceptions of LMS usability based on gender highlight the importance of considering gender-specific preferences and experiences in the design and implementation of educational technologies. This finding aligns with research by Kennedy et al. (2020), which found significant gender differences in technology use and preferences, suggesting that male and female students often have different experiences and expectations when interacting with LMS platforms.

Tailoring LMS functionalities to better meet these diverse needs can enhance usability and effectiveness for all students. For example, gender-responsive design can involve ensuring that the interface and instructional materials are free from gender bias and that support features are equally accessible and helpful to all students. This approach is supported by findings from a study by Colpaert (2018), which advocate for the integration of gender-inclusive practices in the development of educational technologies to foster a more equitable learning environment. The comparative analysis of LMS usability perception across different academic levels (200L, 300L, and 400L) reveals varied experiences and expectations among students. This variation underscores the necessity of customizing LMS features to cater to the specific needs of students at different stages of their academic journey. Research by Selim (2018) supports this finding, indicating that students' needs and preferences evolve as they progress through their academic programs. For instance, while lower-level students may require more foundational support and straightforward navigation, higher-level students might benefit more from advanced features that support research and collaborative projects. A study by Kumar et

al. (2020) further emphasizes the importance of adaptive learning technologies that can provide personalized learning experiences tailored to individual student profiles and academic levels.

CONCLUSION

In conclusion, undergraduate students generally perceive learning management systems (LMS) positively for their educational needs. Gender and academic level do not significantly influence students' perceptions or usage of LMS. LMS platforms contribute to an enhanced learning experience, facilitating access to resources and promoting student engagement. Therefore, ongoing support and investment in LMS technology are essential for effective teaching and learning in higher education. Based on the findings, the research therefore recommended that LMS functionalities should be customized to cater to the varying needs of students at different academic levels and with different learning preferences. Secondly, also there's need for the stakeholders to regularly collect feedback on specific usability issues to continuously improve LMS features, in order to ensure that they meet the diverse needs of students

REFERENCES

- Albelbisi, N., Yusop, F. D., & Salleh, U. K. (2018). Mapping the Factors Influencing Success of E-Learning in Higher Education: A Systematic Review. *Education and Information Technologies*, 23(1), 79-89.
- Al-Busaidi, A., & Al-Shihi, M. (2010). The role of Learning Management Systems in facilitating student-teacher communication. *Journal of Educational Technology Integration*, 18(4), 567-582.
- Al-Fraihat, D., Joy, M., & Sinclair, J. (2020). Evaluating E-learning Systems Success: An Empirical Study. *Computers in Human Behavior*, 102, 67-86.
- Al-Khalifa, H. (2010). The impact of Learning Management Systems on student efficiency. *Journal of Online Learning*, 15(1), 23-38.
- Almaiah, M. A., Al-Khasawneh, A., & Althunibat, A. (2020). Exploring the critical challenges and factors influencing the E-learning system usage during COVID-19 pandemic. *Education and Information Technologies*, 25(6), 5261-5280.
- Asiri, S., et al. (2012). Exploring student perceptions of Learning Management Systems. *International Journal of Educational Technology*, 30(2), 215-230.
- Brown, S., & Johnson, M. (2007). Utilizing Learning Management Systems for training and evaluation. *Training and Development Journal*, 42(4), 67-82.
- Colpaert, J. (2018). *Pedagogy-driven Design for Online Language Teaching and Learning*.
- Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, 49(1), 5-22. <https://doi.org/10.1177/0047239520934018>

- Escobar-Rodriguez, T., & Monge-Lozano, P. (2012). *The acceptance of Moodle technology by business administration students. Computers & Education*, 58(4), 1085-1093. <https://doi.org/10.1016/j.compedu.2011.11.012>
- Fathema, N., Shannon, D., & Ross, M. (2015). Expanding the Technology Acceptance Model (TAM) to examine faculty use of Learning Management Systems (LMSs) in higher education institutions. *Journal of Online Learning and Teaching*, 11(2), 210-232.
- Hernandez-Ramos, P., & De La Fuente, M. (2014). Leveraging learning management systems to save time and resources in educational institutions. *Journal of Educational Administration*, 37(1), 89-104.
- Islam, N. (2019). The Role of E-learning in Enhancing Learning Experience: A Case Study from Saudi Arabia. *International Journal of Advanced Computer Science and Applications*, 10(2), 34-40.
- Kennedy, G., Judd, T., Churchward, A., & Gray, K. (2020). First Year Students' Experiences with Technology: Are They Really Digital Natives? *Australasian Journal of Educational Technology*, 26(4), 493-510.
- Khambari, F., Miah, S., & Kumar, R. (2010). Factors influencing the acceptance of learning management systems by undergraduate students. *Computers & Education*, 55(3), 1123-1134. <https://doi.org/10.1016/j.compedu.2010.04.001>
- Kumar, A., Singh, A., & Ahuja, N. J. (2020). Adaptive Learning and Personalized Learning: Emerging Trends and Technologies in Online Education. *Educational Technology & Society*, 23(1), 39-49.
- Lim, C., Morris, M. L., & Kupritz, V. W. (2020). Online versus blended learning: Differences in instructional outcomes and learner satisfaction. *Internet and Higher Education*, 22, 67-71. <https://doi.org/10.1016/j.iheduc.2013.12.001> *CALICO Journal*, 35(3), 296-312.
- Nair, S., & Patil, P. (2012). The role of Learning Management Systems in online education. *Journal of Online Learning*, 20(2), 345-359.
- Papp, A. (2000). The evolving landscape of higher education. *Higher Education Research and Development*, 28(4), 567-582.
- Paulsen, M. (2003). Understanding the adoption of Learning Management Systems in higher education. *Educational Technology Research and Development*, 50(2), 189-204.
- Selim, H. M. (2018). E-learning Critical Success Factors: An Exploratory Investigation of Student Perceptions. *International Journal of Technology Marketing*, 2(2), 157-182.
- Thompson, E., Simonson, M., & Hargrave, C. (2016). Educational technology: A definition with commentary. Springer.
- Volery, T., & Lord, D. (2000). *Meeting the challenges of higher education in the digital age. Educational Technology Research and Development*, 35(1), 23-38.
- W3C. (2020). Web Accessibility Initiative (WAI). <https://www.w3.org/WAI/>