

EFFECTIVENESS AND LIMITATIONS ON LEARNING MANAGEMENT SYSTEMS (LMS) IN LEARNING AND TEACHING: A SYSTEMATIC REVIEW

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ABSTRACT

This systematic review examines the use of application technology in the English language learning process. Some students feel that the use of LMS helps the learning process when offline learning is not possible. Learning Management Systems (LMS) have become vital tools in modern education, transforming traditional learning environments into interactive digital spaces. In Indonesia, platforms like Moodle, Google Classroom, and Schoology are widely used at all educational levels, providing flexible access to resources, assignments, and interactive tools. This review aims to motivate students to use LMS in the student learning process, as technology is widely used by society today. This study evaluated 24 national articles published in 2024 and showed many positive results in the use of LMS. The findings indicate that LMS can be a valuable tool for the learning process, but its effectiveness is influenced by a number of factors. Studies consistently show that LMS can provide a structured and organized learning environment, offering students easy access to learning materials, tools, and assessments. It can be concluded that the use of LMS for the learning process has significant potential to improve language teaching and learning. By addressing the identified limitations and implementing a balanced approach, educators can harness the power of LMS to create engaging and effective learning environments that promote student success.

Keywords: Effectiveness, English Education, Language Teaching, Learning Media, Limitations

BACKGROUND

Technology has a significant impact on many aspects of life in the fast-paced world of today, including education. Learning management systems (LMS) is one of technology most popular in the education sector in recent years. A platform or piece of software called a learning management system (LMS) is used to distribute, organize, and manage educational resources online. Effective management of teaching and learning activities, tracking of trainee or student progress, and the provision of courses are all made possible by learning management systems (LMS). According to (Mahnegar,2012) in (Yenni Arnas et al., 2023) A software program called a Learning Management System (LMS), Course Management System (CMS), or Virtual Learning Environment (VLE) is utilized by educators in both academic institutions and schools as an online learning tool (e-learning).

In the field of education, learning management systems (LMS) act as a single platform for all learning materials, tools, and tests. The learning process is streamlined by the abundance of educational resources available to administrators, teachers, and students in one location. This unified method makes it simpler for students to access pertinent information whenever they're ready and guarantees consistency in the delivery of content. According to (Qamarya et al., 2023) It is beneficial to use learning management systems as a conversation tool to help students develop their skills.

A key advantage of LMS platforms is their ability to promote self-directed learning and increase student engagement. Research indicates that LMS usage helps students build self-regulation skills, including setting goals, planning strategically, and self-evaluating—skills that are critical for academic achievement. Additionally, LMS platforms offer real-time feedback, opportunities for collaborative learning, and interactive content, all of which enhance students' comprehension and retention of material. For example, studies involving EFL learners show that LMS tools significantly boost English language skills, with students reporting improved understanding and active participation in virtual settings.

Overall, the LMS is a crucial component of the teaching and learning process that can have a significant effect on both teachers and students (Garcia-Solorzano, et al., 2012) in (Muruthy & Yamin, 2019). Additionally, the LMS is used for the majority of web-based interactions in learning environments because it combines formal and informal learning, which can empower and inspire users to learn about topics that interest them (Absouchedid & Eid, 2004; Shepherd, 2011) in (Muruthy et al., 2017). Because of this, the education department should use the LMS system to improve the teacher-student relationship.

Even though an LMS is an advantageous instrument to have, nothing is flawless. Sometimes, It could be more difficult if you have an LMS because some limitations. It is commonly known that an LMS has limitations in a normal academic setting. Among these limitations, as listed by (Beer & Jones ,2008), are They commonly adapt more to the needs of the instructor and the organization than the student, Approach instructional technology in a centralized and controlled manner, restricted opportunities for informal learning, and Community development has been limited by a course-based procedure. Moreover, teachers often struggle to use LMS for developing essential skills, such as oral communication, which is crucial in language learning but challenging to teach online. Additionally, some students feel isolated in a fully virtual setting, emphasizing the need for tools that facilitate meaningful interactions and foster a sense of community among students and teachers.

Finally, the Learning Management System (LMS) was carried out to explore the most popular of use technology of the Learning Management System (LMS) in higher education to support the teaching and learning process. This paper will highlight the effectiveness and limitations of LMS, particularly in the field of education.

Due to the development and progress of technology in the world, LMS is a technology that makes the educational process easier. LMS provides opportunities to simplify the learning process between teachers and students, one of which is online learning. Therefore, as a result, the aim of this paper is to explore the effectiveness and limitations of using LMS in teaching and learning. The main research question is as follows “how effective and limited are LMS in teaching and learning?”.

RESEARCH METHOD

This systematic literature review used The Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) 2020 checklist. The PRISMA checklist includes 27 criteria to help with transparency in a systematic review. The PRISMA 2020 statement is specifically tailored for systematic reviews that asses the impact of health intervension, regardless of the research methods used in the included studies (Page et al., 2021). While PRISMA is primarily designed for reporting reviews of randomized trials, it can also serve as a framework for reporting systematic reviews of other research types, especially those evaluating interventions.

Nowadays, there are many people have used technology as a devices to study in classroom. According to Kassim (2024), integrating technology into language education has demonstrably yielded positive outcomes. The use of technology in classroom not only enhances student learning but also empowers teachers. Therefore, this paper aims to describe and explain the effectiveness and limitations of Learning management systems (LMS) in language teaching, this paper serves how the Learning Management Systems can be used in the classroom and what its influence is.

This research explores the key components of how Learning Management Systems in supporting language learning and a critical review of their strength and weaknesses by evaluating selected papers linked to the effectiveness and limitations of LMS. The goal of this systematic literature review is to provide readers a better understanding of the advantages and disadvantages of Language Management Systems in the classroom, particularly in terms of language teaching. This study is based on the analysis of articles sourced from several databases. The literature review included only journal articles published in 2024. Thus, in this study, the researchers utilised four phases to carry out the analysis. These include the identification phase, screening phase, eligibility phase and lastly, inclusion phase.

Phase 1: Identification Phases

The initial stage of the systematic review, known as the identification phase, aimed to gather relevant research. This phase consisted of two key steps. First, a wide range of articles was collected. Then, a selection process was applied, choosing only articles that met specific criteria for inclusion and exclusion. It's important to note that this approach might be susceptible to publication bias, as it solely relied on journal databases and excluded other types of literature, such as book chapters, white papers, and technical reports.

This systematic review focused exclusively on peer-reviewed articles published in 2022-2024. With the rapid growth of scientific publications, it's crucial for literature reviews to consider not only the general trends and accomplishments of a research field but also the most recent findings to avoid becoming outdated. There was a combination of various keywords that were used in this process. These include Learning Management Systems, the effectiveness and limitations, language teaching, and critical review of their strength and weaknesses.

Phase 2: Screening Phase

Researchers search for articles in several journals, there are various types of themes that we need. Then we filter and take only a few articles that we want according to the topic.

Phase 3: Eligibility Phase

The gathered papers were reviewed for eligibility in the third phase, where they had to match the criteria outlined in the table as inclusion section. This is a critical step in ensuring that the data collected in this study were of high quality and dependability.

Table 1. Inclusion Criteria

Inclusion
Learning Management Systems in language learning
Research methodologies: quantitative, qualitative and mixed method
Sample or responden various levels of education
Find the Learning Management Systems' effectiveness and limitations
Journal Articles published in 2024

The papers chosen focus on researchers who used Learning Management Systems in language learning.

Phase 4: Exclusion Phase

Following the eligibility check in the third phase, articles that did not meet the criteria were excluded from the systematic review. The specific exclusion criteria are outlined in the table below. This exclusion step, like the eligibility step, was essential for ensuring the researchers gathered high-quality data for their review.

Table 2. Exclusion Criteria

Exclusion
Learning Management Systems was not implemented in classroom
The studies did not prove the advantages and disadvantages
Teaching and learning which did not used Learning Management Systems
Articles not published in 2022-2024

There were 24 articles that provided information about the role of Learning Management Systems based on their effectiveness and limitations in language teaching. Most of the analysed articles showed the combination of quantitative, qualitative, and mixed-method type studies. The respondents from all of the studies included some levels of education.

RESEARCH FINDINGS

This section delves into a detailed analysis of the findings from the research papers included in this systematic review. After a rigorous four-phase selection process, 20 articles were chosen for their relevance to the study of Learning Management Systems in language teaching. The following table highlights some of the most influential and impactful research papers on this topic, showcasing the diverse perspectives of various researchers.

Table 5. Main Characteristics, Perspectives and perception on Learning Management Systems (Lms)

Authors	Territory	Study Purpose	Participants	Discussion
Shofiyudd in et al., (2022)	Indonesia	To analyze the advantages of the apps as Learning Management Systems	The third semester students of English education in master degree program in Islamic University of Malang (UNISMA)	The study indicates a Moodle was also considered as a good media to learn English.
Nisa, (2024)	Indonesia	To see how LMS could work on pre-service teacher professional education (PPG).	Professional education for pre-service English teachers in Universitas Islam Malang	The study show that LMS is quite effective in supporting learning but needs to be supported by adequate technology and networks, apart from that it also needs to be balanced with social interaction in class such as direct group discussions in class.
Sarja et al., (2023)	Indonesia	To determining the effectiveness of English materials development in the form of learning management system (LMS) implementation.	students from three public elementary schools in Buleleng regency.	Results show that The use of LMS in both online and offline class settings proves its effectiveness in dynamic learning environments.
Adi et al., (2024)	Indonesia	To measure the effectiveness of LMS SIPEJAR as a tool for	Students from the Department of Educational	The findings indicated that LMS SIPEJAR is effective

supporting distance Technology, batch 2019 in supporting learning. at the State University of Malang. distance learning. Some areas for improvement were identified to enhance the LMS's overall functionality and support for online learning.

Berbudi et al., (2024)	Indonesia	To assess the impact of LMS-facilitated asynchronous learning and peer assessment on student understanding in a parasitology course.	247 fifth-semester students enrolled in a parasitology course in higher education institution	The study demonstrated that the LMS is effective and efficient for implementing peer assessment, enhancing feedback and learning outcomes.
Marzuki et al., (2024)	Indonesia	To explore Indonesian EFL teachers' perceptions of Moodle and identify the challenges they face when using Moodle	senior high school teachers from Central, South, and North Sulawesi.	The findings indicate that teachers hold positive views of Moodle in terms of usability, accessibility, and support for various educational activities. However, concerns remain regarding technical robustness, speaking skill development, and feedback effectiveness. The main challenges identified include limited technical skills and insufficient support
Anshary et al., (2024)	Indonesia	To describe students' perceptions of using Open Learning as an LMS in hybrid learning situations and to identify the challenges students face while using it.	English Education Department students at Universitas Muhammadiyah Kalimantan Timur.	Results indicate that Open Learning can be utilized in both face-to-face and virtual learning settings. However, students encounter challenges, including internet connectivity issues, especially for those living in remote

areas, and a lack of motivation in using Open Learning.

Agustyas et al., (2024)	Indonesia	To evaluate the user experience of LMS UNISKA in a blended learning environment, examining how it supports educational practices and where improvements are needed.	Lecturers and students from the English study program at Kadiri Islamic University.	The research found LMS UNISKA helpful for organizing learning materials and enhancing engagement via multimedia. Initial issues included unfamiliarity with the platform and technical challenges like page maintenance and manual quiz entry.
Sanjaya et al., (2024)	Indonesia	To measure the effectiveness of interactive science teaching materials based on LMS and PBL in improving the learning outcomes of fifth grade elementary school students.	Fifth grade students at three elementary schools: SDN 05 Ulakan Tapakis, SDN 14 Ulakan Tapakis, and SDN 14 Nan Sabaris, West Sumatra.	The findings highlight the teaching materials were proven to be effective in improving student learning outcomes, with average scores increasing significantly after using the teaching materials.
Jh et al., (2024)	Indonesia	To evaluate the effectiveness of the MLMS model.	High school students from four schools in South Tangerang	The system showed improvement in student learning outcomes, with medium and high gain scores in static and dynamic electricity materials across different schools.
Andriyani et al., (2024)	Indonesia	To investigate the use of learning management system to promote students' self-regulated learning	Eight EFL learners at University of Surabaya	than 75% the respondents agreed that LMS should improve and build the English teaching and learning, can improve the quality and handle the English problems, can improve some

				component of self-regulated
Zainuddin et al., (2019)	indonesia	To identify the impact of implementing a Learning Management System (LMS) 'TES Teach' on students' learning experiences in a computer-assisted language learning (CALL) course with flipped-class instruction	Ten undergraduate students from Ahmad Dahlan University	The finding of this study suggests that the LMS TES Teach is recommended to be performed in teaching CALL for higher education in Indonesia. It offers students' occasion to practice and enhances their listening, writing, reading and vocabulary skills in and out-of-class times.
Suryani et al., (2024)	indonesia	To focuses on extracting information from educational psychologists regarding cognitive load and its relation to LMS usage	A total of four experts in the cognitive field in University of Indonesia	The finding of this study wa Several components need to be considered to detect cognitive load: prior knowledge of using LMS, motivation, and working memory capacity.
Marmoah et al., (2024)	indonesia	Investigates how primary school teachers are integrating Learning Management Systems (LMS) using the Unified Theory of Acceptance and Use of Technology (UTAUT) approach.	426 teacher respondents involved in 84 public and private elementary schools in Surakarta city, Central Java	The results of the study show that these factors have a strong correlation with teachers' behavioral intentions and user behavior with reference to LMS, demonstrating excellent reliability and validity.
Subiyanto ro et al., (2024)	indonesia	To develop and analyze the effectiveness of gamified Learning Management Systems (LMS) in increasing student engagement in online learning.	Students of one of the private universities in Indonesia who attended online lectures during the pandemic in Malang State University.	The results of interviews with students and lecturers show that using gamified LMS significantly increases student engagement and motivation in learning.

Tukiyo, (2024)	indonesia	To enhance educational models and materials by employing the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) framework for Research and Development.	35 educational administration students At Widya Dharma University Klatin.	These findings confirm that the learning process in educational management courses is significantly enhanced when media and material are appropriately integrated
Rahmi et al., (2024)	indonesia	To analyse, develop and evaluate H5P-based interactive content used in a blended learning environment.	The 88 participants in this study were purposively selected students in the Educational Technology Department, Universitas Negeri Padang, Indonesia.	The H5P activity helped them to understand the lecture objectives and the material presented. This is in line with several previous studies conducted where the object characteristics of the H5P have proven successful in improving and achieving lecture goals.
Asyari, (2024)	indonesia	To analyze university students' perceptions and attitudes regarding LMS-based learning.	607 students from the State Islamic University of Mataram.	The results of the questionnaire indicated that majority of students have a good perception on the LMS usability, learning design, material content, language and communication, interactions with instructors, and interactions with peers.
Zainil et al., (2024)	indonesia	To understand teachers' experiences, digital platform mastery, digital-based pedagogy, and the role of parents in home-based learning	16 students' parents and 96 elementary school teachers in Indonesia.	Results of this recent study revealed that based on their experience, teachers still used videos as the main teaching material in digital learning and they carried out the

using LMS-based
blended learning
during the COVID-
19 pandemic

learning assessment
process using digital
platforms.

Dendi et indonesia al., (2022)	To investigate the implementation of Schoolology for teaching descriptive writing and to identify any problems students faced while using it	Six female students in the eleventh grade at SMK Bhinneka Karawang.	The result showed that the main features used for implemented LMS in Schoolology for learning descriptive writing such as: Updates menu to give sources about descriptive text and discussed them, Materials menu to create multiple choice and create descriptive writing, and Attendance menu for checking the students' attendance that teacher used.
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DISCUSSION

This systematic review analyzes 20 articles published in 2024, investigating the effectiveness and limitations of Learning Management Systems (LMS) in language teaching and learning. The findings indicate that LMS have great potential to enhance the learning process, particularly in reading comprehension. LMS have been shown to provide a structured and organized learning environment, offering students easy access to learning materials, tools, and assessments, thus allowing them to focus more on learning and not have to spend time searching for the information they need. Interactive features, such as quizzes, discussion forums, and learning videos, enhance student engagement and understanding by providing a more engaging and interactive learning experience.

LMS are also crucial in supporting distance learning, especially during the COVID-19 pandemic, by providing a platform for students to stay connected with their teachers and classmates, as well as access learning materials and complete assignments remotely. Some studies suggest that LMS can personalize the learning experience, tailoring content and feedback to the individual needs and learning styles of students, which can help to enhance student motivation and engagement. LMS can help students to learn at their own pace and according to their learning styles, as well as provide more personalized and specific feedback to each student, allowing them to better understand their strengths and weaknesses and improve their shortcomings. Based on the analysis of 20 articles, the most frequently used LMS application in the research is Moodle. Moodle is widely used in various levels of education in Indonesia, from elementary schools to universities.

However, the research also highlights a number of challenges related to the implementation of LMS. Technical issues, such as poor internet connectivity, unstable LMS platforms, and lack of technical support, can cause disruptions in the learning process and lead to student frustration. While LMS can help students to interact with their teachers and classmates online, these interactions may not be as effective as face-to-face interactions, and LMS may not be able to fully replace the benefits of the social interaction and collaboration that occur in traditional classrooms. The success of LMS implementation often depends on adequate teacher training and support. If teachers are not properly trained, they may not be able to utilize all the features of LMS and may not be able to use it effectively to support student

learning. Maintaining student motivation and engagement in online learning environments can be challenging, especially if the LMS is not well-designed and not engaging for students.

The effectiveness of LMS depends heavily on careful planning, implementation, and evaluation to maximize their benefits. It is important to carefully plan the implementation of LMS and to ensure that the LMS is aligned with the needs and learning objectives of students. Teachers also need to regularly evaluate the effectiveness of LMS and make necessary adjustments to ensure that the LMS is providing optimal benefits to students. Future research should focus on the long-term impact of LMS on student learning outcomes and language proficiency, as well as how to ensure equitable access to LMS for all students. Overall, LMS have great potential to enhance language teaching and learning, but a balanced approach is needed that addresses existing limitations to create engaging and effective learning environments that promote student success.

CONCLUSION

Learning Management Systems (LMS) have become a crucial component in the teaching and learning process, especially in language instruction. LMS offers various advantages, including providing a structured and organized learning environment, easy access to learning materials, and assessment tools that support online learning. LMS can also personalize the learning experience by tailoring content and feedback to meet the needs of students, thus enhancing their motivation and engagement. This is particularly relevant in the technological era, where online learning is increasingly utilized, especially during the COVID-19 pandemic.

However, LMS also has several limitations that need to be addressed for optimal use. Some challenges identified include technical issues such as unstable internet connectivity, insufficient training for teachers in operating the system, and limited face-to-face interaction. LMS is often designed to cater more to the needs of instructors and institutions rather than students, restricting informal learning and offering limited support for community development through a course-based approach.

Studies reviewed indicate that the effectiveness of LMS largely depends on the context of its implementation, including learning objectives, student demographics, and available resources. To address these limitations, a combination of online learning with traditional classroom methods is essential. Adequate technology and network support, teacher training, and effective instructional design are also key factors in the successful use of LMS.

Overall, LMS holds significant potential to improve the teaching and learning process for language education if carefully planned and implemented. For the future, further research is recommended to explore the long-term impact of LMS on student learning outcomes, strategies to enhance accessibility for students from diverse backgrounds, and methods to integrate LMS more effectively into teaching practices. By overcoming the existing challenges, LMS can become a powerful tool for creating engaging learning environments and supporting student success.

REFERENCES

- Adi, E. P., Praherdhiono, H., Hatun, D. I., Prihatmoko, Y., & Pradana, D. A. (2024). Effectiveness of Learning Management System of Universitas Negeri Malang in Supporting Distance Learning. *JTP - Jurnal Teknologi Pendidikan*, 26(1), 183–197. <https://doi.org/10.21009/jtp.v26i1.39468>
- Agustyas, R. D., Kurniawan, E. H., & Sulistyanto, I. (2024). User Experience Of LMS UNISKA As An E-Learning Platform With The Tam Method. *Jurnal Pendidikan Bahasa Inggris Proficiency*, 6(1), 237–253.
- Andriyani, S., Purwati, O., & Anam, S. (2024). *Usage of Learning Management System (LMS): A Qualitative Study of Self-Regulated Learning on EFL Learners in University Between Hopes and Challenges*. 80–89. <https://doi.org/10.5220/0012196800003738>
- Anshary, P., Rachman, D., & Khatimah, K. (2024). *The Students ' Perceptions of Using Open Learning as a Learning Management System In Hybrid Class*. 6, 79–91.

- Asyari, A. (2024). Students' Perceptions and Attitudes toward Learning Based on Learning Management System: A Future Recommendation on Blended Learning Design. *Pegem Journal of Education and Instruction*, 14(2), 78–85. <https://doi.org/10.47750/pegegog.14.02.09>
- Berbudi, A., Rabbani, F. A., & Wahyudi, K. (2024). Effectiveness of Learning Management System and Peer Assessment Method in Parasitology Learning at Padjadjaran University, Faculty of Medicine. *Studies in Learning and Teaching*, 5(1), 11–19. <https://doi.org/10.46627/silet.v5i1.351>
- Dendi, Al-baekani, A. K., & Puspitaloka, N. (2022). *The Utilization Of Schoology As A Learning Management System (LMS) In Learning Writing Instruction*. 2(1), 11–22.
- Jh, T. S., Annas, S., & Saud, S. (2024). Development of a web-based Multimedia Learning Management System (MIMS) in High School Physics Learning. *Journal of Multidisciplinary Academic and Practice Studies*, 2(1), 47–65. <https://doi.org/10.35912/jomaps.v2i1.1955>
- Kassim, W. Z. W. (2024). Google Classroom: Malaysian University Students' attitudes towards its use as learning management system. *Brazilian Journal of Development*, 10(1), 207–223. <https://doi.org/10.34117/bjdv10n1-015>
- Marmoah, S., Supianto, Sukmawati, F., Poerwanti, J. I. S., & Yantoro. (2024). The Elementary School Teachers Adoption of Learning Management System: A UTAUT Model Analysis. *Ingenierie Des Systemes d'Information*, 29(2), 715–722. <https://doi.org/10.18280/isi.290233>
- Marzuki, Wulyani, A. N., Hidayati, Sata, M. R. I. M., & Rusdin, D. (2024). Overcoming Challenges: Indonesian EFL Teachers' Strategies For Using Moodle In High Schools. *Social Sciences and Humanities Open*, 10(July), 101175. <https://doi.org/10.1016/j.ssaho.2024.101175>
- Muruthy, A. E., & Yamin, F. M. (2019). The Perception And Effectiveness Of Learning Management System (LMS) Usage Among The Higher Education Students. *Journal of Technology and Operations Management*, 12(1), 86–98. <https://doi.org/10.32890/jtom2017.12.1.10>
- Nisa, I. (2024). Offline But Connected: Professional Education For Pre-Service English Teachers' Views On Learning Management System Utilization For Tasksubmission. *International Conference on Humanity Education and Sosial*, 3(1), 11.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *The BMJ*, 372. <https://doi.org/10.1136/bmj.n71>
- Qamarya, N., Sriyanah, N., Wijayanti, L. A., Sari, I., & Suprpto, S. (2023). Effectiveness of Learning Management System in the Student Learning Process in the Pandemic Era of the Covid-19. *Jurnal Penelitian Pendidikan IPA*, 9(5), 4049–4054. <https://doi.org/10.29303/jppipa.v9i5.3223>
- Rahmi, U., Fajri, B. R., & Azrul, A. (2024). Effectiveness of Interactive Content with H5P for Moodle-Learning Management System in Blended Learning. *Journal of Learning for Development*, 11(1), 66–81. <https://doi.org/10.56059/jl4d.v11i1.1135>
- Sanjaya, W., Desyandri, D., Miaz, Y., & Rahmi, U. (2024). Innovation of Interactive Science Teaching Materials Based on Problem Based Learning Model through Learning Management System in Elementary School. *Jurnal Penelitian Pendidikan IPA*, 10(7), 4442–4452. <https://doi.org/10.29303/jppipa.v10i7.7802>
- Sarja, N. L. A. K. Y., Nugroho, I. M. R. A., Gayatri, N. K. P., Widana, I. P. K. A., & Laksana, I. P. Y. (2023). *Enhancing Student's English Achievement through English Materials Development in the Form of Learning Management System (LMS)* (Vol. 2023). Atlantis Press SARL. https://doi.org/10.2991/978-2-38476-202-6_43
- Shofiyuddin, M., Mustofa, M., Umam, M. R., & Elfiyanto, S. (2022). Postgraduate Students' Perceptions on Moodle As Learning Management System for Online English Language Learning During Covid-19 Pandemic. *Research and Development Journal of Education*, 8(2), 580.

<https://doi.org/10.30998/rdje.v8i2.13338>

- Subiyantoro, S., Degeng, I. N. S., Kuswandi, D., & Ulfa, S. (2024). Developing Gamified Learning Management Systems to Increase Student Engagement in Online Learning Environments. *International Journal of Information and Education Technology*, 14(1), 26–33. <https://doi.org/10.18178/ijiet.2024.14.1.2020>
- Suryani, M., Sensuse, D. I., Santoso, H. B., Aji, R. F., Hadi, S., Suryono, R. R., & Kautsarina. (2024). An initial user model design for adaptive interface development in learning management system based on cognitive load. *Cognition, Technology and Work*, 653–672. <https://doi.org/10.1007/s10111-024-00772-8>
- Tukiyo, T. (2024). Enhancing Educational Courses through A Collaborative Learning Management System: A Study on Effectiveness. *AL-ISHLAH: Jurnal Pendidikan*, 16(2), 1560–1572. <https://doi.org/10.35445/alishlah.v16i2.4091>
- Yenni Arnas, Andy Ahmad, & Fajarianto, O. (2023). The Effectiveness of Learning Management System in Higher Education: A Case Study of Social Sciences Course Content. *IJESS International Journal of Education and Social Science*, 4(2), 114–118. <https://doi.org/10.56371/ijess.v4i2.185>
- Zainil, M., Helsa, Y., Sutarsih, C., Nisa, S., Sartono, & Suparman. (2024). A needs analysis on the utilization of learning management systems as blended learning media in elementary school. *Journal of Education and E-Learning Research*, 11(1), 56–65. <https://doi.org/10.20448/jeelr.v11i1.5310>
- Zainuddin, Z., Hermawan, H. D., Nuraini, F., & Prayitno, S. M. (2019). Students' Learning Experiences With LMS Tes Teach In Flipped-Class Instruction. *Elinvo (Electronics, Informatics, and Vocational Education)*, 4(1), 1–11. <https://doi.org/10.21831/elinvo.v4i1.24405>