Artificial: Journal of Technology, Information, and Communication
https://jurnalnalar.com/index.php/artificial
Vol. 1 No. 2 (2026) 64 – 74

Submitted: 09-10-2026 | Accepted: 16-10-2026 | Published: 31-10-2026

UTILIZATION OF *LEARNING MANAGEMENT SYSTEM* (LMS) IN SUPPORTING DIGITAL LEARNING PROCESSES

Lia Novitri[1], Nadia Jannah[2], Al Haqqi M.Pd.[3]

Islamic Education Management Study Program, UIN Raden Fatah Palembang

Email:

liaanvitri@gmail.com, nadiaajannah4@gmail.com, alhaqqi217@gmail.com

Abstract

This study aims to analyze the forms of Learning Management System (LMS) utilization in supporting digital learning, its contribution to learning effectiveness, the factors supporting and hindering its implementation, and strategies for optimizing its use. This study employs a qualitative approach using the library research method. Data were collected through a review of relevant scientific journal articles and academic sources, then analyzed descriptively and thematically through the identification, classification, comparison, and synthesis of findings based on the research themes. The findings indicate that LMS is used to integrate the management of learning materials, assignments, discussions, and assessments. Its utilization has the potential to improve learning access and flexibility, support learner autonomy, and facilitate the management and monitoring of learning activities. However, its implementation still faces several challenges, including limited technological infrastructure, disparities in digital competencies, difficulties in using the platform, and the suboptimal utilization of interactive features. Therefore, optimizing LMS requires improvements in educators' digital competencies, the provision of adequate technological facilities, the design of learner-centered instruction, and continuous evaluation. This study concludes that the successful utilization of LMS depends not only on the availability of technology but also on the quality of its management and integration with learning objectives.

Keywords: *Learning Management System; digital learning; learning effectiveness; educational technology.*

INTRODUCTION

Digital technology has driven changes in the delivery of education, particularly in the presentation of materials, interaction between educators and learners, and the management of learning activities. Learning can now take place through a variety of digital platforms that offer flexible access and support the management of learning

Copyright @ 2026, Artificial: Journal of Technology, Information, and Communication

activities. One technology that plays a role in this transformation is the *Learning Management System* (LMS), a system that enables the integrated management of materials, assignments, assessment, communication, and monitoring of learning activities. Sanchez et al. (2024) describe the characteristics and features of various LMS platforms that can be used to support learning management, particularly in higher education.

The use of an LMS is related not only to the availability of technology but also to educators' ability to integrate it into learning strategies. Gunawan et al. (2024) examined the role of LMS in improving educators' digital literacy, which indicates the relevance of the platform to the development of digital competence. In addition, Haikal et al. (2025) discussed the effectiveness of LMS in supporting learners' autonomy and learning outcomes. This suggests that LMS has the potential to support the learning process by providing learning resources and by supporting assignment management, assessment, and interaction. However, these benefits depend on how the platform is used and how well it fits learning needs.

Despite its potential, implementing an LMS does not automatically guarantee effective learning. Mella-Norambuena et al. (2025) identified personal, technological, social, and institutional factors related to the use of LMS by instructors in higher education. Educators' readiness, digital competence, the availability of infrastructure, and institutional support are aspects that need attention during implementation. Using an LMS only for delivering materials and collecting assignments also risks leaving its interaction, collaboration, and feedback functions underused. Therefore, LMS utilization needs to be understood not only in terms of the features available but also in terms of how it is integrated with pedagogical practice.

Previous studies have examined LMS from various perspectives. Gunawan et al. (2024) focused on educators' digital literacy, Sanchez et al. (2024) compared platform characteristics, Mella-Norambuena et al. (2025) analyzed the factors in instructors' use of LMS, while Haikal et al. (2025) examined learners' autonomy and learning outcomes. These studies provide an important foundation, but their differing foci leave room for a synthesis that links the forms of LMS utilization, its contribution to learning management, and the factors that support and hinder its implementation. Accordingly, an integrated

License: Creative Commons Attribution 4.0 International (CC BY 4.0)

discussion is needed that not only explains the functions of LMS but also examines strategies for optimizing its use in digital learning.

Based on this gap, the novelty of this study lies in synthesizing the relationships among the forms of LMS utilization, its contribution to the implementation of digital learning, the factors that influence implementation, and strategies for optimization. This study does not claim that these aspects have never been researched; rather, it seeks to integrate the findings of previous research into a more comprehensive analytical framework. This approach is expected to clarify the links among technology use, pedagogical practice, and learning management.

The study entitled "Utilization of *Learning Management System* (LMS) in Supporting Digital Learning Processes" aims to analyze the forms of LMS utilization, examine its contribution to the management and implementation of digital learning, identify the factors that support and hinder its implementation, and formulate optimization strategies based on a literature review. This study uses a qualitative approach with the *library research* method, through the review and synthesis of relevant scientific sources. The results are expected to serve as a conceptual foundation for educators and educational institutions in optimizing the use of LMS according to learning needs.

RESEARCH METHODS

This study uses a qualitative approach with the *library research* method. This method was chosen to examine the utilization of *Learning Management System* (LMS) in supporting digital learning processes through a review of various relevant scientific sources. The literature study was conducted by identifying, evaluating, and synthesizing the results of previous research to obtain a comprehensive understanding of a topic (Snyder, 2019).

The research data are secondary data obtained from scientific journal articles, academic books, and research publications that discuss the use of LMS, digital learning, learning effectiveness, and the challenges of implementation. The literature was searched through Google Scholar and journal or scientific publisher websites using keywords such as *learning management system*, LMS utilization, digital learning, learning effectiveness, and educational technology. The literature was selected based on its relevance to the research focus, the credibility of the source, and the connection of its content to the

License: Creative Commons Attribution 4.0 International (CC BY 4.0)

research questions. Studies published between 2020 and 2026 were prioritized, while earlier sources with methodological relevance were still considered.

Data were collected through documentation, namely identifying and compiling suitable literature and then recording key information, including publication details, research objectives, methods, main findings, and their relevance to the focus of the study. The collected data were then analyzed descriptively and thematically through the stages of reading and understanding the literature, grouping findings by theme, comparing research results, and synthesizing related information. The analytical themes included the forms of LMS utilization, its contribution to digital learning processes, supporting and inhibiting factors, and strategies for optimizing its use. The results of the analysis were then interpreted to draw conclusions based on patterns of findings and the relationships among themes identified in the literature.

RESULTS AND DISCUSSION

Forms of Learning Management System Utilization in Digital Learning Processes

Based on the literature review, the *Learning Management System* (LMS) is used as a means of integrating various digital learning activities, from providing materials and managing assignments to conducting discussions and evaluating learning outcomes. Through an LMS, educators can organize materials systematically, provide teaching resources in various formats, give learning instructions, and arrange assignment submission on a single platform. Learners can also revisit materials as needed, so the learning process does not depend entirely on the educator's explanations in the classroom. This utilization shows that LMS plays a role in connecting learning activities, learning resource management, and assessment in a more organized way.

Muntafi'ah et al. (2024), in their study on the use of LMS in Qur'an literacy learning, explain that an LMS platform can be used to store and present materials, collect learners' assignments, share links to video-based learning media, and conduct assessments online. These findings show that LMS utilization can be applied in various fields of learning, including religious education. The use of digital platforms gives educators opportunities to develop more varied presentations of material and makes it easier for learners to access learning resources. However, success is still influenced by

License: Creative Commons Attribution 4.0 International (CC BY 4.0)

educators' creativity in developing learning activities and learners' readiness to use technology.

Similar findings can be seen in the study by Fahrezi et al. (2024) on the development and use of an LMS at Rizky *English Course*. The LMS they developed integrates digital registration, access to learning videos, completion of interactive assignments, score-based evaluation, and the delivery of announcements. The results show that integrating learning features helps with managing materials, monitoring participants' progress, and communication between instructors and learners. Viewed from the digital learning process, LMS utilization can be grouped into three main forms: learning resource management, learning activity management, and evaluation management. These three forms are interrelated because available materials need to be followed by learning activities and assessment to determine learners' level of understanding.

Accordingly, LMS utilization should not be limited to storing materials and collecting assignments. Educators need to make the most of the features available according to the characteristics of the subject and the learning objectives. For example, materials can be accompanied by explanatory videos, assignments can be designed as problem-solving tasks, and discussion forums can be used to encourage the exchange of opinions. Such utilization makes the LMS a digital learning environment that supports a series of learning activities more comprehensively.

Contribution of Learning Management System to the Effectiveness of Digital Learning

The effectiveness of digital learning relates to the achievement of learning objectives through a process that is planned, directed, and responsive to learners' needs. In this context, LMS contributes through easy access to materials, regularity in carrying out learning activities, flexibility of study time, and support for monitoring learners' progress. Educators can provide materials before learning begins, give exercises after presenting the material, and use assessment results to determine follow-up actions. Learners also have the opportunity to revisit material they have not yet understood without always having to wait for a direct re-explanation.

License: Creative Commons Attribution 4.0 International (CC BY 4.0)

Salim et al. (2024), in a literature review on the use of LMS to improve mathematical ability and *self-regulated learning* in primary schools, explain that LMS has the potential to support conceptual understanding, problem-solving ability, and learning autonomy. This finding shows that LMS can contribute beyond the administrative efficiency of learning. Learners have the opportunity to organize, monitor, and evaluate their own learning activities through the materials and assignments available on the platform. Nevertheless, this contribution does not occur automatically. Educators still need to design activities that encourage learners to understand concepts, apply knowledge, and reflect on their learning outcomes.

In the context of learning management in higher education, Hidayati (2024) examined the creation, use, and management of the Sinau Digital Information System (SiDia) LMS at Universitas Negeri Surabaya. The results show that SiDia helps carry out both synchronous and asynchronous learning, but the use of several of its features still faces obstacles because of the platform's complexity for some educators. This finding shows that the effectiveness of LMS is influenced by the fit among system features, user capability, and learning needs. A platform with complete features does not necessarily provide maximum benefit if users find it hard to operate or do not understand how to integrate it into learning activities.

Based on these two studies, the effectiveness of LMS needs to be understood through several indicators: ease of access to materials, regularity of learning implementation, learner engagement, learning autonomy, and support for achieving learning objectives. Educators and educational institutions can use these indicators to evaluate LMS utilization more comprehensively. The number of assignments submitted or the frequency with which learners log in to the platform is not sufficient as the only measure of success. Evaluation also needs to consider the quality of work, participation in discussions, understanding of the material, and learners' ability to apply the knowledge they have learned.

Thus, LMS has the potential to support the effectiveness of digital learning when it is used as part of an integrated instructional design. Technology serves as a means of facilitating the learning process, while the success of learning is still determined by the alignment of objectives, materials, methods, activities, and evaluation. LMS utilization

License: Creative Commons Attribution 4.0 International (CC BY 4.0)

oriented toward learners' needs will be more meaningful than using a platform that merely moves conventional learning activities into a digital space.

Supporting and Inhibiting Factors in the Utilization of Learning Management System

The use of LMS in digital learning is influenced by infrastructure readiness, users' digital competence, the ease of using the platform, and the support of educational institutions. The availability of devices and an internet connection is a prerequisite for learners to access materials, take part in discussions, and submit assignments without significant disruption. In addition, educators need the ability to manage a digital classroom, prepare suitable materials, and use assessment features. Institutional support is also needed through the provision of facilities, training, technical assistance, and clear policies on LMS use.

Zahra (2024), in a study of the perceptions of Teacher Professional Education (PPG) participants regarding the use of LMS in learning the teaching profession for Indonesian language teachers, found four main themes: usefulness, ease of use, social influence, and facilitating conditions. Participants regarded LMS as useful for academic activities and for gaining new knowledge, easy to access, and usable according to their needs. The study also showed that lecturers' recommendations and device suitability formed part of the LMS user experience. This finding shows that the success of LMS utilization is determined not only by the availability of features but also by users' perceptions of the system's benefits and ease of use, as well as by the facilities that support its use.

Meanwhile, Saputri et al. (2024), in a systematic literature review on the use of LMS in junior high schools, identified several problems in LMS implementation, including limited technological infrastructure, teacher readiness, digital literacy, and the need for more comprehensive evaluation tools. The review emphasizes that LMS offers flexibility and accessibility, but its impact on the quality of education requires adequate support. In practice, limited network connectivity can hinder access to audiovisual materials, while uneven digital skills can cause learning features to be used suboptimally. This condition may create differences in learning experiences among learners.

License: Creative Commons Attribution 4.0 International (CC BY 4.0)

Besides technical constraints, obstacles can also arise from the way the LMS is integrated into the learning process. Using a platform only for providing materials and collecting assignments risks reducing academic interaction between educators and learners. Learners may be able to complete assignments online, but they do not necessarily get enough opportunities to discuss, ask questions, or receive feedback. Therefore, problems in LMS implementation need to be understood comprehensively, covering technology, user competence, pedagogical design, and the governance of educational institutions.

Based on this synthesis, the factors that support and hinder LMS utilization are interrelated. Good infrastructure will not yield optimal results without user capability, while adequate digital competence is also difficult to apply when access to technology is limited. Educational institutions need to identify users' needs first before determining the platform and features to be used. This approach can help ensure that LMS implementation fits the institution's conditions and is accessible to educators and learners more equitably.

Strategies for Optimizing the Utilization of Learning Management System in Digital Learning

Optimizing LMS needs to be directed at using technology in line with learning needs, users' abilities, and the conditions of the educational institution. The first strategy is to improve educators' competence in designing digital learning. Training should not merely teach how to upload materials or create assignments, but should also cover designing interactive activities, developing evaluation, providing feedback, and using learning activity data. In this way, educators can choose LMS features based on learning objectives, not simply because those features are available on the platform.

The next strategy is to adapt the LMS platform and features to the characteristics of the educational institution. Rahmah et al. (2025), in a systematic literature review on the use of LMS-based online learning media in vocational high schools, identified the potential of LMS to support flexibility, interactivity, and learning motivation. However, its implementation must also consider learning needs, technology availability, and the characteristics of learning activities. In vocational education, for example, LMS use can be combined with video demonstrations, digital worksheets, quizzes, and practical instructions. In learning that emphasizes discussion and problem-solving, educators can

License: Creative Commons Attribution 4.0 International (CC BY 4.0)

make the most of forums, collaborative assignments, and reflection activities. Choosing the right features will make LMS use more relevant to learning objectives.

Optimization also requires strengthening governance at the institutional level. Educational institutions can establish LMS usage guidelines covering class management, preparation of materials, assignment giving, assessment, and protection of user data. In addition, technical support should be available to help educators and learners when they face difficulties. Regular evaluation is also important to find out whether the platform is easy to use, materials are accessible, activities run as planned, and learners receive the learning support they need. The evaluation results can serve as a basis for continuous improvement of LMS services.

The final strategy is to make the LMS part of active, learner-centered learning. Educators need to combine the delivery of materials with activities that give learners opportunities to apply knowledge, discuss, solve problems, and reflect on their learning outcomes. The use of assessment features also needs to be followed by clear feedback so that learners know their strengths and the aspects that need improvement. To keep access affordable, educational institutions can provide lightweight materials, alternative document formats, and activity arrangements that take limited internet connectivity into account.

Overall, optimizing LMS requires the integration of educator competence, technology selection, instructional design, institutional support, and continuous evaluation. LMS use should not be measured by how many features are used, but by the extent to which those features help learners learn and help educators manage learning. With a focused approach, LMS can become a more flexible, interactive, organized, and need-appropriate means of supporting digital learning in Indonesian education.

CONCLUSION

Learning Management System (LMS) plays an important role in supporting digital learning processes through the integrated management of materials, learning activities, assignments, discussions, and evaluation. LMS utilization provides easy access to learning resources, increases learning flexibility, and supports learner autonomy and educators' monitoring of learning activities. However, the effectiveness of LMS use is

License: Creative Commons Attribution 4.0 International (CC BY 4.0)

determined not only by the availability of technology but also by the quality of learning planning, users' digital competence, the availability of infrastructure, and the support of educational institutions.

In the authors' conclusion, LMS optimization should be pursued through improving educator competence, selecting features that match learning objectives, providing adequate infrastructure, and continuously evaluating platform use. LMS should not be used merely as a means of delivering materials and collecting assignments, but should also be developed to encourage interaction, collaboration, and active learner engagement. With proper management, LMS has the potential to become a more flexible, structured means of supporting digital learning that is oriented toward achieving educational goals. Therefore, the success of LMS implementation should be assessed by its contribution to the quality of the learning process, not merely by the intensity of technology use.

REFERENCES

Fahrezi, E. F., Putra, S. H., Ibrahim, I., Ain, L. T., & Benny, L. (2024). Pemanfaatan Learning Management System Dalam Peningkatan Kemampuan Peserta Belajar Pada Rizky English Course. *Jurnal Minfo Polgan*, *13*(2), 1839–1847.

Gunawan, R. D., Sutisna, A., & Ana, E. F. (2024). Literature review: The role of learning management system (LMS) in improving the digital literacy of educators. *Jurnal Inovasi Teknologi Pendidikan*, *11*(2), 116–123.

Haikal, A., Azahra, N., & Awalia, A. A. (2025). Kajian literatur: Efektivitas Learning Management System (LMS) dalam meningkatkan kemandirian dan hasil belajar siswa di era digital. *Paedagogie*, *20*(2), 343–352.

Hidayati, A. H. (2024). Analisis Penciptaan, Penggunaan Dan Pengelolaan Aplikasi Learning System Management System (Lms) Pada Sistem Informasi Sinau Digital (Sidia) Di Universitas Negeri Surabaya Untuk Meningkatkan Kinerja Mahasiswa, Dosen, Desainer Dan Pembelajaran. *EDUTECH*, *23*(1), 92–115.

Mella-Norambuena, J., Chiappe, A., & Badilla-Quintana, M. G. (2025). Theoretical and empirical models underlying the teaching use of LMS platforms in higher education: a systematic review. *Journal of Computers in Education*, *12*(3), 997–1023.

Muntafi'ah, U., Rusdiyah, E. F., & Tolchah, M. (2024). Transformasi Digital: Pemanfaatan Learning Management System dalam Pembelajaran Literasi Al-Qur'an: Digital Transformation: Use of Learning Management System in Learning Al-Qur'an Literacy. *Anterior Jurnal*, *23*(3), 83–91.

RAHMAH, R. N. N., Wedi, A., & Praherdhiono, H. (2025). Systematic literature review:

License: Creative Commons Attribution 4.0 International (CC BY 4.0)

Penggunaan media pembelajaran online berbasis LMS di sekolah menengah kejuruan. *JURNAL MANAJEMEN*, *6*(2), 1667–1677.

Salim, A., Herpratiwi, H., & Firdaus, R. (2024). Pemanfaatan Learning Management System Berbasis Platform Pembelajaran untuk Meningkatkan Kemampuan Matematis dan Self-Regulated Learning di Sekolah Dasar. *Didaktika*, *4*(4), 415–425.

Sanchez, L., Penarreta, J., & Soria Poma, X. (2024). Learning management systems for higher education: a brief comparison. *Discover Education*, *3*(1), 58.

Saputri, K. A., Baharudin, B., Asyha, A. F., Bahri, S., Hasanah, I. F., & Shabira, Q. (2024). Penggunaan learning management system (lms) di sekolah menegah pertama: A systematic literature review. *Learning: Jurnal Inovasi Penelitian Pendidikan Dan Pembelajaran*, *4*(4), 1264–1273.

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, *104*, 333–339.

Zahra, F. A. (2024). Persepsi Peserta PPG terhadap Pemanfaatan LMS dalam Pembelajaran Profesi Guru Bahasa Indonesia. *Tanjungpura Journal of Language Education*, *1*(2), 63–70.

License: Creative Commons Attribution 4.0 International (CC BY 4.0)