



# ANALYZING THE UTILIZATION OF LEARNING MANAGEMENT SYSTEMS TO SUPPORT STUDENT LEARNING IN AN ONLINE LEARNING ENVIRONMENT

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## ABSTRACT

*As online learning continues to gain prominence in educational settings, the role of Learning Management Systems (LMS) becomes increasingly crucial in facilitating and enhancing student learning experiences. This research aims to investigate the utilization of learning management systems and their impact on supporting student learning in the context of online education. The study employs a study literature method by identifying related research on learning management systems and how they support student learning. The primary objectives are to identify patterns in LMS usage, assess the effectiveness of various features, and explore the challenges faced by students in adapting to online learning environments. Key areas of analysis include the impact of LMS access as a learning tool, the impact of LMS on students, the features of LMS that support student learning, and the challenge of using LMS itself. Additionally, the study delves into the perceptions of students regarding the use of the LMS interface, the adequacy of the instructional materials provided, and the overall impact on their learning outcomes. Through the integration of data analytics and qualitative feedback, this research aims to provide a comprehensive understanding of how Learning Management Systems contribute to student learning in online environments. The findings are expected to inform educators, administrators, and instructional designers about optimizing the design and implementation of online courses, ultimately enhancing the quality of education in the digital era.*

**Keywords:** *Learning Management Systems, Online Learning Environment*

## 1. INTRODUCTION

In the ever-evolving landscape of education, the advent of online learning has brought forth a paradigm shift, transforming the traditional classroom experience into a digital realm. The COVID-19 pandemic also brought a challenging movement to our learning process. E-learning nowadays is not only a concept that we have known since 1999, but it has already become part of our daily lives. Due to the growth of developing technology, we need to adapt and also follow the trends in our learning environment. Research has shown that the deeper a student knows about technology, the better they can face the ever-changing job market and develop their creativity and innovation (Mulyana, 2023).

As educational institutions globally embrace the potential of online learning, the role of learning management systems (LMS) has become increasingly pivotal in shaping the future of student education. The Learning Management System (LMS) is an information technology system developed to manage and support the learning process, distribute lecture materials, and enable collaboration between lecturers and students (Fitriani, 2021). LMS helps students learn independently anytime and anywhere.

This article aims to delve into the multifaceted aspects of LMS utilization, unraveling its impact on student learning in an online learning environment. The contemporary educational landscape is marked by diverse pedagogical approaches, with a significant emphasis on leveraging technology to enhance the learning experience. In the traditional way, we usually used a blackboard and marker to learn; now, in the technological era, LMS provides us with many tools to use. Learning management systems, encompassing platforms such as Moodle, Blackboard, Canvas, and others, have emerged as linchpins in



the facilitation of online education. These systems act as virtual hubs, providing a centralized space for course content, collaboration, assessments, and communication to support student learning.

As we navigate the digital corridors of education, understanding how LMS is employed to support student learning is crucial for educators, administrators, and policymakers alike. Our comprehension of technology is really important to gain more benefit from technology itself. As we know, technology is also challenging to use in other hands. The utilization of LMS had a positive impact on learning. Bradley (2021) said that LMS reinforces the learning process through an online learning environment. But on the other hand, Fatmi et al., (2023) said that one of the LMS did not make a significant contribution to student learning outcomes.

The data above brings us to many questions that will be answered in this research. This analysis aims to explore the diverse functionalities of LMS and their impact on student engagement, achievement, and overall satisfaction in an online learning environment. The utilization of LMS is not merely confined to the administration of courses but extends to fostering a dynamic and interactive learning experience. Features such as discussion forums, multimedia content integration, real-time feedback, and personalized learning paths are integral components that contribute to the effectiveness of LMS in catering to the diverse needs of online learners. By exploring these dimensions, we aim to unravel the transformative potential of learning management systems for creating a more equitable and learner-centric online educational environment.

## 2. METHODS

### Systematic Literature Review

The method used is a systematic literature review. Systematic literature review (Sangadji & Sopiah, 2010) is research conducted using literature, either in the form of books, notes, or research reports from previous studies. The research approach is survey-based qualitative because the resulting data is in the form of words or descriptions. The research was conducted on secondary data from primary research on the utilization of learning management systems to support student learning in an online learning environment. There are three stages, those are data collection, data analysis, and drawing conclusions. Sources of data in this research from primary studies that have been published are indexed journal articles. Data collection used indexed electronic databases such as Garuda Portal, Google Scholar, Research Gate, Doaj, direct journal URLs, theses, and dissertations. All articles were extracted to select relevant articles. All articles that have been extracted will enter the analysis stage.

### Inclusion Criteria

The criteria for selection used in this research are inclusion criteria. Notoadmodjo (2018) said that inclusion criteria are criteria for research subjects to represent research samples that qualify as samples. The inclusion criteria that have been determined are as follows:

1. The article comes from research on education.
2. The research comes from the utilization of learning management systems
3. The sample used is research in the online learning environment.



## Research Instrument

The research instrument was an observation sheet or matters related to the inclusion criteria. Criteria, namely based on the utilization of learning management systems to support student learning in an online learning environment.

## Population Sample

The focus of this research is on the utilization of learning management systems to support student learning in an online learning environment. The number of article samples obtained was 36 relevant according to the inclusion criteria.

## Data Collection Technique

Data collection techniques in this study used articles related to the utilization of learning management systems to support student learning in an online learning environment. The articles found using a search engine (Google) included as many as 50 articles using the keywords “learning management system,” “Online Learning Environment”, and “journals”. After that, the next step was to select 42 articles that matched the research questions about the utilization of learning management systems to support student learning in an online learning environment. In the final stage, 34 specific articles were found with research questions and inclusion criteria.

## 3. RESULTS & DISCUSSION

In this part, we will show the research results that have been processed by the data. It will be shown in tables and graphs to explain the results of the study. The previous study will be disclosed and explained by comparing or confirming it. The journals that published the selected articles are presented in **Table 1**.

**Table 1. Journal Publishing or Sources Selected Articles**

No	Journal	Frequency
1	Turkish Online Journal of Distance Education	1
2	Ar-Raniry State Islamic University, Thesis	1
3	International Journal of Technology in Education	1
4	Linnaeus University, Thesis	1
5	University of Northern Colorado, Dissertation	1
6	Islamic University of Riau, Thesis	1
7	Elsevier	2
8	International Journal of Advanced Science and Technology	1



9	International Journal of Research and Innovation in Social Science	1
10	Journal of English Language Teaching and Learning	1
11	Journal of Information System, Informatics and Computing	1
12	Proceeding International Conference of Social Research with Multidisciplinary Approach	1
13	Mantik Journal	1
14	Al-Ishlah: Journal of Education	1
15	New Language Dimensions	1
16	International Journal for Educational and Vocational Studies	1
17	Journal of English in Academic and Professional Communication	1
18	Edulingua	1
19	Journal of Mathematical Pedagogy	1
20	INTENSIF	1
21	Journal of Special Education Research and Development	1
22	Indonesian Journal of Multidisciplinary Research	1
23	International Journal of Language Education	1
24	Scientific Journal of Technical and Vocational Education	1
25	Southeast Asian Journal of Islamic Education Management	1
26	IEEE Global Engineering Education Conference (EDUCON)	1
27	International Young Scholars Journal of Language	1
28	Australasian Journal of Educational Technology	1
29	State Islamic University Prof. K.H. Saifuddin Zuhri Purwokerto, Thesis	1
30	Journal of Education Technology	1
31	Proceedings of the Tenth International Conference on Languages and Arts (ICLA 2021)	1
32	The University of Michigan- Dissertation	1
33	TEM Journal	1



### **The utilization of LMS based on level of study**

Research on the utilization of LMS in learning has been done at each level of education. It has been shown that LMS has been used in each level of education nowadays in learning mathematics due to the e-learning process era since the pandemic of COVID 19. Research showed that of the 34 studies about the utilization of LMS in learning, 26 were conducted by students in elementary through senior high school, and 14 were conducted in higher education. There are a lot of types of LMS that can be used in learning, such as blackboard LMS, Google Classroom, Edmodo, Moodle, SEVIMA Edlink, LMS provided or developed by a university or government, Schoology, and Learnboost.

Wiratomo (2020) said that it's better to have an Android-based application if we want to apply LMS to learning and get a good learning outcome. The type of LMS that is used in every learning situation can be different based on needs. In Saudi Arabia, Aldiab et al., (2018) said that most of the universities used blackboard LMS to help students study. Meanwhile, in Indonesia, Utomo et al., (2021) mentioned that at college study levels, Moodle is the most frequently used LMS. It can be adapted based on the needs of each level of study and learning environment. The discussion above has shown us that LMS can be applied in many kinds of online environments, but we still need to adjust the learning process so that it can still support student learning.

### **The utilization of LMS to support student learning**

The use of LMS to support student learning has been mentioned in 20 papers out of 34 that are analyzed in this research. Most of them mention the positive impact of using LMS for student learning. Students gave a positive attitude by using LMS in learning. LMS helped students retain their autonomy, enthusiasm, and motivation for learning. It made students learn independently anytime and anywhere. Some researchers also strengthen it by showing that students can raise their voice more by using LMS. They felt more interested and agreed to use the LMS for intensive learning. It all showed a good perception of learning using the LMS.

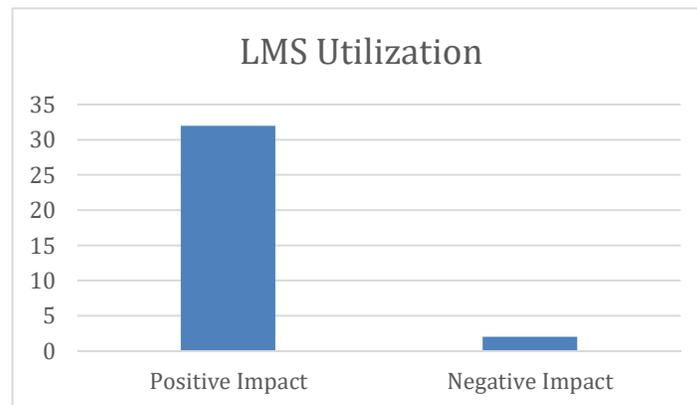
Other than that, LMS also helps students construct and build knowledge. Students get used to technology when using LMSs for learning. Through that process, students show a good improvement in their personal skills, such as speaking, reading, listening, and writing. The technology that is used in the LMS encourages students to have a good strategy for self-learning. That happened because the LMS itself facilitated student-centeredness and could be accessed anytime and anywhere. LMS not only helps students increase their learning activities but also inspires them to compare all tasks and quizzes. Students also have a chance to collaborate and interact with other students and teachers on this learning platform. So, there was no doubt if many papers that were analysed in this research said that by utilizing LMS to support student learning, we found that students could increase their learning outcomes effectively.

### **Feature in LMS that support student learning**

The utilization of LMS in student learning is increasing because of the features inside LMS that make learning effective. LMS is easy to use and gives tasks and assignments. Other than that, it also helps teachers with scheduling and controlling the learning process. It can facilitate and model discussion, plan activities, set learning expectations, provide learners with options, download material, access quizzes, and assist in problem solving with a process for decision-making. Video conference, chat room for personal use, and discussion are also some good features that are recommended to exist in LMS to support student learning.

### **The impact of the utilization of LMS**

In the following, a graph will be presented to show the impact of the utilization of LMS to support student learning. See **Graph 1**.



**Figure 1. Impact of The Utilization of LMS**

**Graph 1** shows that most of the research on the utilization of LMS in learning has a positive impact. Especially during the COVID-19 pandemic (Ayudia, 2021). The negative impact happened for a reason. Research has shown that the utilization of LMS really depends on connection (Putri, 2020). This situation will lead us to find other problems, such as student understanding and lower learning outcomes. The limited technological capabilities experienced by teachers and students and inadequate facilities and infrastructure also become challenges in using LMS as a learning platform. Students and teachers need to have a certain strategy to solve the error situation and other technical problems.

#### **How to use LMS properly to help student learning?**

The utilization of LMS has pros and cons, but through this research, we know that the impact of the utilization is greater than we could have expected. Knowing how to use it properly is the key to leveling up student learning and supporting them properly. The following is a suggestion for several parties related to the learning process.

- Stakeholder  
Stakeholders in the educational community must find scientific studies to support their contributions to LMS platforms and assist scholars in learning and developing the LMS.
- Teacher/Instructor

The teacher or instructor must use more multimedia, such as video conferencing and audio discussion, to enhance students' critical thinking and engagement in LMS activities, thus improving students' outcomes. The preparation of the LMS for teaching and learning activities is also important. It also includes the learning goals, planning for both face-to-face and online learning, the current Bloom Taxonomy, selecting online tools, and interpreting the evaluation to establish future classroom activities. Teachers and instructors need to play a greater role in motivating students to use the LMS via innovative and creative means.

- Designer LMS

Designers of LMS need to make sure that learning management is structured and implemented properly by all related parties. LMS should be simple in the application and use clear tutorials. Additionally, LMS designers and implementers are urged to consider previous literature on computer-supported collaborative learning environments in order to improve these systems.



Further research is needed to identify the best types of scaffolds and overall technological improvements in order to provide support for online collaboration and knowledge construction.

#### 4. CONCLUSION

The results of the review of 34 articles that became the main study in this study have found that the utilization of learning management to support student learning in an online learning environment has proven to have an impact. There are so many benefits we can get from LMS itself to elaborate and develop our learning process in an online learning environment. Despite the benefits, we still need to face the challenging part of using LMS that the connection trouble and technological knowledge from teachers and students need to be developed more. From the results of this diversity, it can be concluded that the utilization of LMS has been done at many levels of education and has had a positive impact on improving learning. The findings are expected to inform educators, administrators, and instructional designers about optimizing the design and implementation of online courses, ultimately enhancing the quality of education in the digital era.

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