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UTILIZATION OF A LEARNING MANAGEMENT SYSTEM TO DEVELOP CRITICAL THINKING SKILLS

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Abstract

The concept of a Learning Management System (LMS) is a dynamic concept of critical thinking. This research aims to explain using LMS to develop critical thinking skills. This type of research is qualitative with a literature review. The data sources used secondary data from journals, books, and references. Data collection techniques were carried out with documentation, while data analysis was through content analysis. Learning Management System (LMS) can improve students' critical thinking skills because it will familiarize students with problem-solving and/or learning from problems, as well as the educators in developing thinking skills. It was concluded that the Learning Management System (LMS) based discussion method could improve undergraduate students' critical thinking skills.

Keywords

Critical Thinking, Education Strategy, Education Management, Learning Management System

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INTRODUCTION

Critical thinking is a distinct type of thinking characterized by careful analysis and decision-making (Muhammad Arifin &; Elfrianto, 2017; Rachmad et al., 2023). In improving critical thinking skills, learning methods are required to facilitate students in problem-solving to analyze and make decisions (Saputra, 2020). A learning management system (LMS) is a learning management that has the function of providing material, supporting collaboration, assessing student performance, recording student data, and producing useful reports to maximize the effectiveness of learning (Musa et al., 2023; Suhardi &; Hariawan, 2020).

The concept of LMS is dynamic due to the constant evolution of digital technology, features, and potentials in the learning process (Zuriati et al., 2018). LMS provides many special and unique features, offering many opportunities for its utilization in the field of education. LMS in the ICT-based teaching and learning process can be interpreted in three paradigms. First, ICT as a tool, or LMS as a tool in the form of technology products that can be used for teaching and learning. Second, ICT as content, or LMS as part of the material that can be used as content for the teaching and learning process. Third, ICT as an application program, or LMS as a tool to facilitate effective and efficient teaching and learning processes (Suhardi &; Hariawan, 2020; Supangat et al., 2021).

Some academic problems occur during learning (Agnesiana et al., 2023, 2023). The conventional learning model is one of the learning models used by educational institutions before the existence of LMS. This learning model requires students to memorize a lot of material provided by educators. In this learning process, students only passively receive information from educators, resulting in a one-way flow of knowledge. Consequently, this learning process negatively impacts the learner's ability to solve problems, as they always receive information from the educators, leading to passive learning (Andini, 2019).

The existence of Digital Literation causes major changes in the learning process (Ellyzabeth Sukmawati et al., 2022). Information technology (IT) development has offered a new paradigm in the learning process called e-learning. The concept of e-learning enables interaction between educators and learners that crosses the barriers of space and time. This interaction can occur synchronously (at the same time) or asynchronously (at different times). Various research studies have confirmed the concept of e-learning (Juca-Aulestia et al., 2021).

The results of the study revealed an improvement in critical thinking skills for learning through the exchange of experience and knowledge while using LMS (Ezz Elarab &; Maddy, 2020).

In contrast to, the results of research, it showed that implementing problem-based learning methods can improve students' critical and creative thinking skills. Students are able to solve a given case by conducting appropriate analysis and being able to provide alternative solutions. Students find the learning process more interesting and challenging (Kardoyo et al., 2020). Meanwhile, other studies have also found that learning strategies using blended learning, students are able to obtain relatively higher critical thinking ability scores (Sulisworo et al., 2020). Various collaborative management system developments have been developed to improve students' critical thinking skills (Boonprasom &; Sintanakul, 2020). The results of other research also find that one solution to overcome problems in the field of education is by conducting research and developing an LMS to support the improvement of students' critical thinking ability so that they are able to express opinions, ideas, and thought independently, courageously, and confidently (Wichadee, 2014).

This research is different from previous research. This describes more about the implementation of LMS based on literature studies by classifying and systematically presenting various literature for analysis to become a reference. Based on this literature, this study aims to describe the implementation of LMS in improving critical thinking skills.

METHOD

The research conducted in this study is qualitative research with a literature review approach. The researcher described the LMS methodology from various literature sources to develop critical thinking skills. The data used in this study were secondary data. Data sources included research articles, books, and various media materials related to LMS and critical thinking. The instrument used in this research is in the form of literature studies with previous books and journals. Data collection techniques employed documentation with various primary data. The researcher documented some literature sources on LMS and classified and presented them systematically for analysis. Data analysis techniques were carried out using content analysis. The researcher conducted a critical-descriptive analysis of some of the LMS literature, then narrated discourses from various literature to draw a conclusion.

FINDINGS AND DISCUSSION

Findings

A Learning Management System (LMS) is a web-based system where learners can interact with learning and assessment content/resources and other learners and instructors. LMS has been widely used, especially since the beginning of the information era. *LMS serves as an* online-based integrated learning management system and is commonly better known as *e-learning*. LMS is the digital management of teaching and learning programs. The following LMS platforms are used to improve critical thinking skills listed in Table 1.

Table 1. Utilization of Learning Management System to Improve Critical Thinking

No.	Media	Critical Thinking Stimulus
1.	Google Classroom	Explain, analyze, and interpret
2.	Edmodo	Explain and analyze
3.	ATutor	Explain and analyze
4.	Joomla LMS	Analyze and interpret
5.	Classroom	Explain, analyze, and interpret
6.	Canva	Analyze and interpret
7.	Moodle	Interpret and analyze
8.	LearnPress	Explain, analyze, and interpret
9.	Dokeos	Explain, analyze, and interpret

In Table 1, various LMS platforms developed Google Classroom, Edmodo, Atutor, Joomla LMS, Classroom, Canva, Moodle, LearnPress, Dokeos, etc. (Lwande et al., 2021; Triswidrananta et al., 2022). The various media can stimulate students to be able to explain, analyze, and even interpret. The ability to think critically at the explaining stage is when the LMS media is able to become an educator media to explain the material delivered (Ohliati &; Abbas, 2019). LMS is also able to provide stimulus in the form of analysis, for example, when students are given tasks and need to analyze the given tasks. In addition, the ability to interpret is also one of the stimuli provided by LMS in critical thinking. Interpretation refers to an idea or perspective that emerges after the analytical process (Şahin &; Yurdugül, 2022).

The utilization of LMS is by using various applications. The *LMS* application becomes an *e-learning* that helps teachers carry out online academic activities *as this media facilitates the learning process (Maslov et al., 2021).* Moreover, this media has many integrated features that are very important to facilitate the teaching and learning process, ranging from forming forums and inputting video content in Google Docs, Forms, and PDFs so that students have the ability to think

critically. E-learning is an effective continuous learning solution in current conditions (Kim et al., 2021; Turnbull et al., 2022).

Critical thinking is a competency that must be mastered in facing demands (Balkaya &; Akkucuk, 2021). The development of critical thinking skills is trained in the learning process. Learning innovation can foster students' ability to think critically, which is indispensable for analyzing problems, making choices, and producing important decisions, especially in the current era of information flood; the ability to be able to sort and choose the right thing is needed (Balkaya &; Akkucuk, 2021).

Discussion

Learning provides opportunities for students to acquire problem-solving skills, thereby developing their thinking skills (Widyastuti &; Airlanda, 2021). This experience is used to help students develop a useful conceptual framework for analyzing and evaluating problems. In this ability, students are required to be able to think critically (Zayyini Rusyda, 2021).

Educators, in carrying out learning activities, have strategies or methods used for problem-solving. In this case, the learning process carried out is more student-centered (student-centered instrument) (Akhmadi, 2021). This is in line with the concept of higher-order thinking implemented in the classroom, where students' thinking skills are focused on ideas in solving incidental thinking problems, namely through analysis, interpretation, and manipulation of information (Ritonga et al., 2020).

Learning Management System (LMS) is an information technology system developed to manage and support the learning process, distribute lecture materials and enable collaboration between educators and students. Through the Learning Management System (LMS), students can access lecture materials provided, engage in discussion boards with educators through discussion forums, chat, and access assignments given by educators. They are also encouraged to make learning materials more creative through learning videos that can be uploaded to the Learning Management System (LMS). This system contributes in terms of its utilization. The flexibility of the Learning Management System allows educators and students to access the LMS anytime and anywhere and through various devices, both PCs, tablets, and smartphones. E-learning can bring a new atmosphere to the variety of learning development. Good use of e-learning can improve learning outcomes to the maximum. This research results include space for educators to assess exactly which methods are suitable for improving learners' success in achieving their expected learning outcomes

using the main Learning Management System (LMS) resources, including sharing lesson videos, presentations, PPT, etc., as well as electronic evaluations, quizzes, and assignments (Einggi Gusti Pratama & Andhyka Kusuma, 2021; Putri & Dewi, 2020).

One important element of implementing online learning is the availability of a Learning Management System (LMS). Thus, the distribution of learning materials and assessment of the learning process can be done easily. Mahnegar [5] suggests that Learning Management System (LMS) is an application or software used to set up or manage online learning or online learning, which includes various aspects, including material, placement, management, and assessment. In www.monsoonacademy.com, Jaqueline [3] states that Learning Management System (LMS) is a software application that can help to create a plan and implement a learning process. Learning Management System (LMS) allows course owners or creators to set, manage, deliver, and monitor their students. Learning Management System (LMS) also combines traditional learning with digital media and interactive tools, including online learning, virtual live sessions, and discussion forums. Learning Management System helps improve time utilization because it can be accessed online anywhere and anytime. In addition, LMS also has a quality of learning that is equal to traditional methods (Einggi Gusti Pratama &; Andhyka Kusuma, 2021; Nurhadi, 2020).

Types of Learning Management Systems (LMS) include a. Google Classroom. Google Classroom, or known as a virtual classroom or Google Classroom, provides a place for students to interact, communicate, discuss, and work together in a group in an online or virtual system. As a Learning Management System, Google Classroom provides convenience for users, such as educators and students, in the learning process. Students easily and quickly collect their assignments directly connected via google drive. As teaching staff, educators can easily determine deadlines for submitting assignments, monitor, review, and provide feedback and assessment for assignments that have been submitted (Baihaqi, 2017; Pratiwi, 2019).

The literature results of research show that online-based LMS simultaneously affects learning outcomes (Sulisworo et al., 2020; Yulfianti &; Dewi, 2021). The results of a literature review show that there are potential factors for LMS to be one of the uses of LMS, namely the perceived ease of use, the usefulness felt by students and educators, namely the quality of information, system quality, service quality, and high technology causing the ability to think critically (Alkhateeb &; Abdalla, 2021).

The development of thinking skills in the learning process is an activity that is one of the goals to be achieved in learning activities, aligning with the discourse of improving the quality of education through a learning process that is in accordance with the guidance or learning outcomes (Dela Khoirul Ainia, 2020). Learning that uses thinking skills is an aspect of improving the quality of learning that is oriented toward achieving learning outcomes. Educators must be able and willing to assist the students in engaging in higher thinking through structured assistance. Thinking skills in learning are a significant aspect of developing higher-order thinking skills as part of the learning process (Ansyari, 2021).

One of the thinking skills needed in the learning process is the ability to think critically. Critical thinking directs students to think, which involves mental operations (Sukmawati, 2022). Critical processes are often faced with solving a problem. Thus the learning that should be carried out to improve the higher-order thinking skills of students should be considered some of the above aspects.

Critical thinking and creative thinking indicate that someone needs to master thinking skills at a higher level which is shown by getting someone to think clearly and imaginatively by assessing evidence, playing logic, and looking for imaginative alternatives to conventional ideas (Prasad, 2021; Udayani et al., 2019). Thinking skills are an approach in education that educators use and are structurally designed. Educators should help learners engage in higher-order thinking through structured activities. Therefore, using thinking skills at a higher level provides and familiarizes students to think deeply, intelligently, balanced, and be accountable for their decision (Rott et al., 2021). This is in line with the critical thinking ability of students who obtain learning using LMS is better than those who obtain learning using traditional media (Muhtarom et al., 2022).

Students must be able to find problems and transform complex information. For students to truly understand and apply knowledge, they must work to solve problems and find solutions and new ideas. In this case, students must be able to construct and develop their knowledge. Educators, in this case, are not just teaching but must familiarize students to build their own knowledge by providing students the opportunity to express the ideas they have in their minds by giving a higher understanding (Rott et al., 2021).

Indicators of critical thinking ability are grouped into five aspects of critical thinking ability. These aspects include giving simple explanations, which involve focusing questions, analyzing questions, asking and answering questions about an explanation; developing basic skills that

include considering whether sources are reliable or not, observing and considering an observation report; drawing a conclusion which includes considering the results of deduction, considering the results of induction, making and determining the value of consideration; providing further explanations which include: defining terms and definition considerations in three dimensions and identifying assumptions; as well as developing strategies and tactics that include: determining actions and interacting with others (Cheng et al., 2018).

Students' basic thinking can be elevated to higher levels by cultivating the habit of solving simple problems within their life context, encouraging students to solve problems, and exposing them to challenging situations during the learning process. They will think at a higher or more critical level when taking action or finding solutions to the problem. This is in line with research which states that concrete operational thinking involves the use of operating concepts, using logical thinking in place of intuitive thinking, but still, in concrete situations, improvements in the ability to think logically can flip things through the use of operations, thinking is no longer centered, and problem-solving that is less restricted by egocentric tendencies (Ahyani &; Astuti, 2018).

Higher-order thinking skills in students can be developed by familiarizing students with solving a problem by learning from problems, and educators in developing higher-order thinking skills can see the stages of cognitive development from the stage of understanding to students' creation (Prasad, 2021)

The implementation of technology in the field of education that is currently still being developed is the Learning Management System (LMS). This system is software for administrative purposes, documentation, reports on an activity, teaching and learning activities, as well as online activities (connected to the internet), e-learning, and training materials. LMS is also integrated with several basic modules required to assist an educational institution in providing appropriate and accurate information. The expected result of the implementation of web-based LMS is that there is efficiency and productivity in education management, especially between schools, educators, and students to support the educational process (Einggi Gusti Pratama &; Andhyka Kusuma, 2021)

CONCLUSION

Learning Management System (LMS) is an information technology system developed to manage and support the learning process and improve critical thinking skills. Thinking skills refer to mental, behavioral, and strategic mechanisms used in problem-solving and decision-making. The

use of a Learning Management System (LMS) is a method of effective implementation of the learning process. Some LMS applications used by educators include Google Classroom, Edmodo, and Schoology. However, some lecturers still use Google Forms, Blogs, and various social media as a forum for collecting and sending assignments when implementing the hybrid/blended learning models. Optimizing the use of this application is a step for lecturers and students to master core competencies that align with industries' needs.

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