

Needs Assessment of Alternative Learning Management Systems in Online Learning with Massive Users

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Abstract. Learning Management System (LMS) is a software that is used for Administration, Documentation, and Reporting of activity, both teaching and learning activities or other activities carried out online. LMS is a tool for the success of learning. This web/online-based learning is supported by lots of software that can be applied in teaching and learning activities. This application can make students and lecturers interact well. The effectiveness of the alternative LMS is assessed by how capable the LMS can be used as a tool in reducing the obstacles that occur in the LMS system that is commonly used. This research aims to see how effectively alternative LMS is used in learning. The method of analysis uses descriptive statistics on a questionnaire of needs and responses from users to the difficulties experienced by the commonly used basic learning LMS. The results of the research show that an alternative LMS is needed to overcome the problem of user density when the exam is carried out simultaneously. In addition, it is needed as an alternative task collection that can contain a larger storage capacity.

Keywords: Learning; Management; Systems; Effectiveness.

1 Introduction

The COVID-19 pandemic that has occurred in Indonesia since 2020 has hampered many community activities in this country, one of which is in the field of education. Many activities, such as teaching and learning at schools and universities, have changed, from what used to be face-to-face or offline learning to online [1]–[3]. These changes more or less make students and educators have to work together and get used to online learning. This change makes lecturers required to be creative in conducting online learning, one of which is by choosing effective media so that the material presented can be well received by students [4]–[6].

The implementation of ICT-based learning has been supported by the government by making laws that regulate the implementation of ICT-based learning, including Law on National Education System Number 20 of 2003; Decree of the Minister of National Education Number 107/U/2001 concerning the implementation of the Distance Education Program; Circular Letter of the Director General of Higher Education Number 3040/D/T2005 concerning the Implementation of Distance Classes, September 8, 2005; Explanation of the Minister of National Education 1 September 2005; and other applicable laws and regulations. Based on these regulations, the government allows universities to conduct distance learning based on information and communication technology for reasons of effectiveness and efficiency of education costs on the condition that it is carried out based on established rules and procedures.

The rapid development of information and communication technology has encouraged various educational institutions to utilize e-learning systems to increase the effectiveness and flexibility of learning. Although in terms of the effectiveness of using e-learning, it tends to be the same as conventional learning, the advantages that can be obtained with e-learning are in terms of flexibility [7]–[10]. Through e-learning, learning materials can be accessed anytime and anywhere, besides that the material obtained is also more because it is enriched with various sources that can be accessed online including the use of multimedia which can be quickly updated by the teacher. E-learning is a learning method that involves electronic devices as media such as computers, laptops, tablets, and so on [11]–[13].

In this form of web/online-based learning, there is a lot of software that can be applied in teaching and learning activities. This application can make students and lecturers interact well. In addition, technological developments also make electronic access to multimedia sources easier in the form of text, images, audio, video, animation, and also links to databases, search engines, and online libraries. One of the software that provides web/online-based learning is known as an online learning management system (Learning Management System or LMS) such as Blackboard, WebCT, First Class, Moodle, Lotus Learning, Space, Edmodo, Schoology, Latitude Learning, Academy of Mine, Dokeos, Sakai, ATutor, ILIAS, SmartSchool, Google Classroom and so on. All of them with all their advantages and disadvantages provide various facilities that can be used for web-based/online learning. Lots of features that support online learning activities or other administrative activities, including a User Interface that is easy to use; Registration; Virtual Class and Video Conference; Quizzes and Exams; Discussion Room; and Reports.

Learning Management System (LMS) is a software (software) that is used for Administration, Documentation, and Reports of activity, both teaching and learning activities or other activities carried out online. LMS is designed to make it easier to create, distribute, and manage the delivery of learning content [14]–[16]. This system can help lecturers to design learning activities, manage learning materials, manage learning activities, manage grades, recapitulate student attendance, display grade transcripts, and manage e-learning displays to make them more attractive. This system is digital based, besides making it easier for lecturers to plan the online learning process, LMS also makes it easy for students to access learning content from anywhere and anytime [16]–[18].

2 Methods

The method of analysis uses descriptive statistics on a questionnaire of needs and responses from users to the difficulties experienced by the commonly used basic learning LMS. Each indicator is analyzed based on an overview of the data distribution. The results of the response analysis show a link between the use of features and the benefits of using alternative LMS in learning. For data processing, the IBM SPSS Statistics 27 software is used to help facilitate the analysis of data as a whole.

3 Results and Discussions

The results of the research show that an alternative LMS is needed to overcome the problem of user density when the exam is carried out simultaneously. In addition, it is needed as an alternative task collection that can contain a larger storage capacity. Based on Figure 1, user needs are more dominant in assignments and testing as the basis for assessing learning outcomes. This is because in an emergency the use of the LMS becomes very heavy when assignments and assessments are carried out at the same time as the user capacity is too dense [19]–[21]. In this situation, an alternative LMS is very much needed by users, especially for Lecturers in adjusting the administrative implementation time of education when the exam is carried out. This is indicated by the very large demand value, which is 75%. This value is a description of the approval of the Lecturer as an alternative LMS user [8], [12], [13], [20], [21]. The alternative LMS is considered very useful when users cannot access the LMS that is commonly used due to several factors that occur.

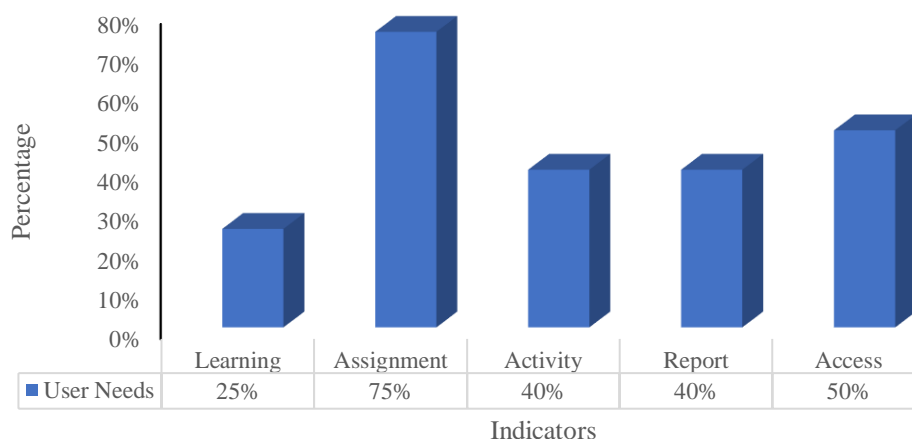


Figure 1. Lecturer Response as User Needs alternative LMS

Learning carried out with the system cannot be concluded only with the needs of users as learning service providers. As service users, students deserve various facilities as learning resources to be able to access various important information provided in learning. This underlies

the need to analyze user needs in terms of students [21]–[24]. In Figure 2, it can be seen that user needs from the assessment of student responses are more likely to prioritize alternative LMS as a medium for collecting and reporting learning activities. This is because students are an important part of using LMS. For the needs with the largest response to the access indicator because students are the biggest consumers in the user system. This makes LMS the most important information service in learning activities at the university level [25]–[27]. This is already a general assessment that contradicts the needs of users as lecturers and students. This difference is the relevance and usefulness of alternative LMS which is used as a service to assist learning activities. With the existence of an alternative LMS, it will be easier for users to prepare and run an online learning system without being hampered by problems that may occur in commonly used systems.

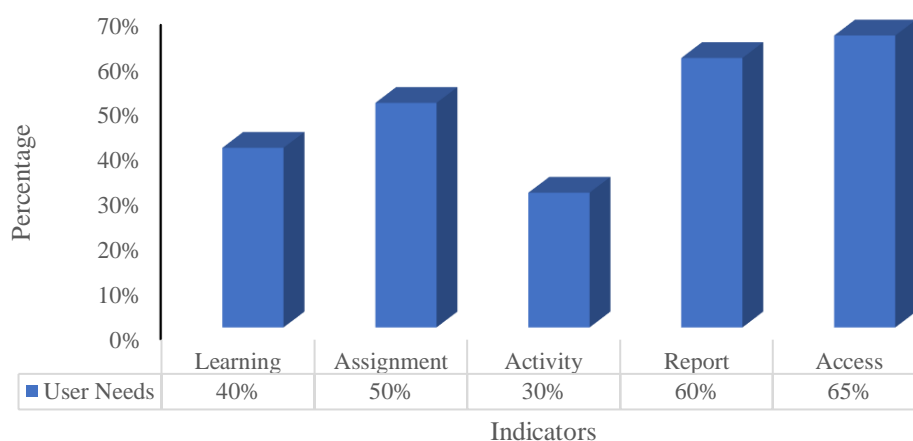


Figure 2. Student Response as User Needs alternative LMS

Based on the comparison of the needs of the two users (figure 3), it appears that students have a higher level of need for alternative LMS than lecturers. This is because the alternative LMS is only used for problems that occur with the LMS used. This shows a very high level of importance for alternative LMS to be considered in learning to achieve optimal services for Education. However, the alternative LMS will not be a substitute for the existing main LMS. This is because the alternative functions contained in the alternative LMS as a solution to the problems faced by the main LMS users [28]–[30]. Anticipation made by procuring alternative LMS is one of the efforts made to continue to expedite learning activities. In addition to being a second access door, it can be used as a backup from the main LMS system usage.

Alternative LMS is highly recommended for smooth learning service activities. This activity is one of the managerial steps taken and agreed upon by considering the possibility of errors in the system used [31]–[33]. From a management perspective, this needs to be done as a preventive measure. Prevention can not only occur due to failure or weakness of the designed learning

system but can be in the form of problems from the LMS that was built. The LMS used in teaching and learning activities also has several advantages, namely: The costs incurred for using the LMS are much cheaper; Facilitate Lecturers to analyze student learning outcomes data in a short time; Make it easier for lecturers to find and organize student learning materials; Learning time becomes more efficient; Encouraging students to do their learning, and Facilitate interaction between Lecturers and Students by utilizing the available features [34]–[36]. LMS has become a very helpful thing in online learning during a pandemic. This is the only way that can be used so that learning does not stop. Thus, students can always access all the information needed for independent learning and improve their skills in using LMS. Therefore, it is important to assess the learning manager to be able to prepare a system that is always accessible and on standby. This is a special assessment of the quality of learning services offered.

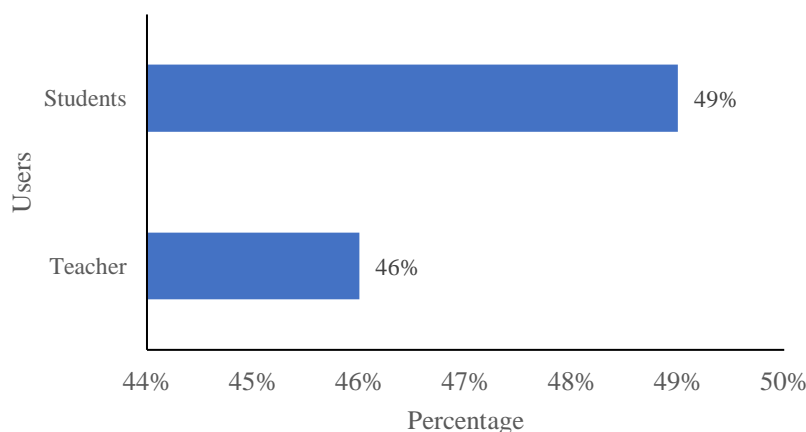


Figure 1. Comparison of User Needs Responses for alternative LMS

4 Conclusion

The results of the research show that an alternative LMS is needed to overcome the problem of user density when the exam is carried out simultaneously. In addition, it is needed as an alternative task collection that can contain a larger storage capacity. Alternative LMS is needed at crucial times that require data transfer and operation in a short time so that it can be accessed quickly. This will make it easier for users and optimize time in lecture activities as an educational managerial step. Thus the problems encountered can be directly resolved and minimized with the existence of an alternative LMS.

Acknowledgments. Thanks to the Institute for Research and Community Service-Universitas Negeri Medan for being a facilitator in the basic research funding in 2022 so that this research can be carried out and published through this article. This has become a source of funding for learning development at the university level, especially at Universitas Negeri Medan.

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