The Effectiveness of Learning Management System in the Student Learning Process in the Pandemic Era of the Covid-19

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Abstract: The purpose of the study is to determine the effectiveness of the learning management system in improving the ability of the student learning process. This research is a quantitative descriptive study. The data analysis used is to use the one-sample t-test. The data normality test is carried out before the test of one sample t-test as a prerequisite. The sample in this study was 35 students. The results showed that the average student activity while using the learning management system in the learning process of the teaching material development course has increased. In addition, the average ability score of students who obtain learning using the learning management system > 77 is met so that it can be said to be effective. Based on the results of the normality test calculations shows that the normal distribution data with a Shapiro-Wilk significance of 0.060 > 0.05. Meanwhile, based on the One Sample t-test shows that the learning management system significantly impacts students' abilities with a significance value of 0.005 < 0.05, which means that the learning management system is effectively used in the learning process.

Keywords: Covid-19; Learning Management System; Learning Process; Pandemic Era

Introduction

The Covid-19 pandemic has hit all countries in parts of the world, including Indonesia. Most universities are closed, so universities do not carry out face-to-face learning (Christianto et al., 2021). This is because it prevents widespread transmission due to massive interactions. For learning to continue even though it is not face-to-face, the Ministry of Education and Culture gave instructions to all education providers ranging from elementary schools to tertiary institutions to carry out the distance learning process through online media and encouraged students to study from their respective homes (Gusty et al., 2020).

Along with the COVID-19 pandemic, information technology and telecommunications systems have undergone rapid changes and extraordinary developments due to the pandemic (Putra, 2020). The learning carried out during the pandemic is all online, requiring all lecturers to utilize technology in conveying information. The learning process that is carried out online requires a strong internet network, connectivity, flexibility, and accessibility to bring out various learning interactions (Pratama et al., 2020). The school carries out education about coronavirus dangers in various ways, both by socializing the dangers of COVID-19 in the school and by giving direction to teachers to exemplify COVID-19 prevention behaviour (Nurmalahayati et al. 2022).

The use of information technology or internet-based multimedia can provide significant changes in the way knowledge is transferred. In addition, it is also an alternative to learning carried out in online classes (Zhang et al., 2017). One of the online learning platforms

that adopt conventional learning but are managed online is to use a learning management system (Aldowah et al. 2019). The learning management system activities can record all student and teacher activities; it can collect data on student interaction activities, including when, how long and how often students access files in the form of materials, quizzes, virtual classes, and other activities. With a learning management system, teachers can also help teachers to track and monitor student learning processes (Fathema et al., 2015).

In online learning, using a learning management system alone is not enough without good planning. In the roles compiled, they must still be able to increase student activity in learning. Student activity in online learning can be seen from student responses and activities. Student responses and activities are seen in student interactions because this has an important role in online learning (Zimmerman & Nimon, 2017). Even though learning is carried out online, it is possible that students can still develop their abilities. By utilizing the learning management system features, we can still see students' abilities. These abilities are the most important part of critical thinking (Singh & Thurman, 2019).

The use of online-based learning media, including learning management systems, is an effective application used during the learning process. The learning management system is easy to use and helps encourage self-study in a social environment for students and puts control into student learning (Setiawan & Aden, 2020). Online-based Media can be used not only to socialize with friends but also to learn and even learn a new language (Wu et al., 2020). Almost 70% of students stated that students enjoy learning online by using the Learning management system (Mtebe, 2015). Students feel that the Learning management system allows them to express themselves in a free environment to dig deeper into students' skills (Nortvig et al., 2018). This research aims to determine the effectiveness of the learning management system as a lesson to develop the learning system and ensure that digital-based technology is necessary for progress in the education and learning process during the Covid-19 pandemic.

Method

This quantitative descriptive research aims to raise facts, circumstances, variables, and phenomena. The research population of all students from the nursing study program at Polytechnic Sandi Karsa used a media learning management system, a sample of 35 people.

Data collection through student activity sheets and the final score is an instrument used in research. It is said to be effective if there is an increase in the number of students carrying out activities during the learning process. It is said to be effective if the average student ability score is > 77. The data is analyzed with the help of SPSS software, with a test one sample t-test. Before going through the one-sample t-test stage, conduct a data normality test as a prerequisite.

Result and Discussion

Researchers made observations during the learning process and recorded the number of active students. The student ability test score of 35 people obtained an average of 82.51 with a standard deviation of 10.84. Based on Figure 1, there appears to be an increase in the number of students carrying out activities during the learning process.

Table 1. Student Ability Score

N	Mean	Std. Deviation	Std. Error Mean
35	82.51	10.842	18.333
	Kolmogorov-Smirnov		
Statistic	df	Sig.	
.151	35	.043	
	Shapiro-Wilk		
Statistic	df	Sig.	
0.941	35	.060	

Table 2. One Sample t-test

t	df	sig.(2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
				Lower	Upper
3.009	34	0.005	5.514	1.79	9.24

The results of the above data normality showed that a significance value of 0.060 was obtained for the Shapiro-Wilk test and a significance value of 0.043 for the Kolmogrov-Smirnov test. Of the two significance scores, > 0.05 indicates that the student's ability test score is normally distributed. The results of the One Sample t-test above show that the significance value (2-tailed) is 0.005, which means that the significance value is < 0.05, so the H0 hypothesis is rejected. This means that the research hypothesis states that the use of moodle-based in the learning process has a significant effect on the average score of students; that is, the average student's final test is greater than 77. In other words, learning using the learning management system as a medium to improve student abilities is very effective.
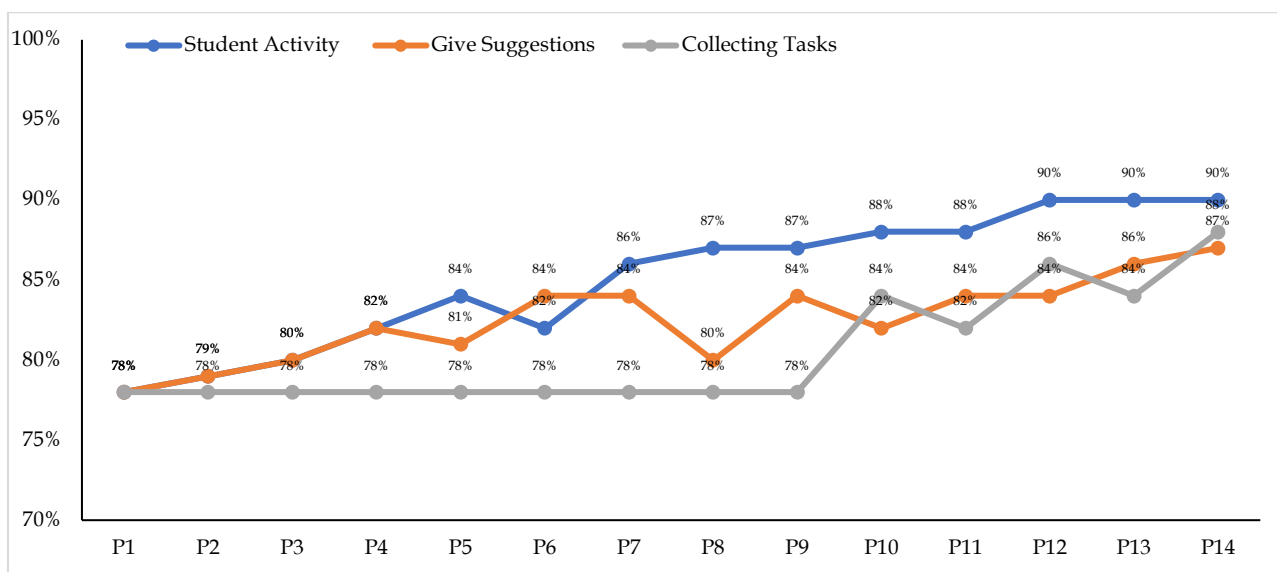
Figure 1. Activity of Student

The researchers' findings show that the learning management system significantly impacts students' abilities. The online or online-based learning function implemented in Indonesia does not replace the conventional learning system implemented through a face-to-face system. However, it is limited to supplements, complements and substitutions (Dewi et al., 2021). In the current conditions of the Covid-19 pandemic, online-based learning models such as learning management systems are one of the learning media solutions that can be used as a reference in the learning process today (Yumnah, 2021). The use of ICT is very necessary for every teacher to master and make the most of this application as application in the learning process (Illeris, 2018). The results of this study are also strengthened by several researchers that the application of technology in learning is very well used to improve student activities and learning outcomes in the type and technical application of technology in learning (Haßler et al., 2016).

Computerized Technology Media is an alternative in realizing the learning process because it allows it to be used as an e-learning medium and provides various features for communication. One of the innovations that can help is Learning Management Systems (LMS) that enable communication and interaction between teachers and students in virtual spaces (Oliveira et al., 2016). However, there are several disadvantages to using a learning management system in the learning process, namely the lack of academic and social control between teachers and students so that the motivation that students have to participate in the online learning process in virtual classes is low (Fatawi et al., 2020). Factors that make remote lectures with e-learning ineffective are that they have not significantly impacted learning outcomes (Fahmi, 2020). This multimedia learning, lack of interaction between educators and students, and low utilization of LMS features are factors in the low effectiveness of e-learning (Sabarini et al., 2021).

The use of the LMS platform also has another impact on students, namely the tendency of students to access social media platforms. Similarly, it was also found that students' behavioral intentions and facilitation conditions also seemed to strongly influence student behavior (Al-Mamary, 2022).

Based on the analysis of several studies, it was found that the concept mapping model was more effective for increasing critical thinking skills compared to conventional learning. We include studies that measure students' critical thinking through standardized tests, comparing the experimental group (concept mapping) to the control group (traditional teaching) (Barta et al., 2022). Although many studies have revealed the various efforts implemented to implement networked learning are heavily influenced by students' ability to adapt using digital platforms, youth e-learning technology and how this profile is related to adolescents' contextual background and advanced technology use (Cheng et al., 2022). The implementation of distance learning during the COVID-19 pandemic found that the blended learning model was an effective solution for increasing student activity and learning outcomes. The best benefits for teachers and students are obtained by maximizing the advantages of each teaching method and by combining the advantages of online and face-to-face teaching (Tong et al., 2022).

In academia, self-efficacy is an important facilitator of success. While proficiency in tasks such as information retrieval plays an important factor in performance proficiency, the confidence to perform learned skills is equally important (Tang et al., 2022). The impact of COVID-19, many students may not be able to learn English in physical classrooms the traditional way.

The effectiveness and results of students' English learning are threatened when English learning is forced online (Yao-Ping Peng, Xu, and Xu, 2023) effective in developing critical thinking skills of elementary school students, and requiring students to respond to SRPs is very beneficial for improving students' analytical skills. The implications of the findings for designing video-based learning systems are discussed along with the Socratic reflection guide (Hsu et al., 2022). The pandemic Corona Virus Disease 2019 (COVID-19) presents several challenges to the education system, including technical, cognitive, managerial and behavioral challenges. As a result of this pressure, the education system underwent dramatic changes. The ongoing pandemic situation has led to increased connectivity between teacher and student devices, and online learning is changing the way students learn. They have to manage the risk themselves (Yao et al., 2022).

The interaction between teachers and students is reduced because there are limited space and time during the learning process. This requires learning that can accommodate these limitations by combining the learning process with face-to-face interaction to interact with students virtually.

Conclusion

It can be concluded that learning using learning management is effective as a means of discussion to improve the abilities of student students. This can be seen in an increase in the number of students in activities during the learning process; These activities include asking, responding, and providing suggestions in discussion forums. Learning uses a learning management system as a means of discussion to improve students' argumentation skills effectively. However, online learning requires various preparations in applying learning management systems, Strong internet networks, devices or materials so that learning can run smoothly.

Author Contribution
Nurul Qamarya, Nour Sriyanah, Lumastari Ajeng Wijayanti, Ramaya Sari designed the study and validated data. Ramaya Sari and Suprapto conducted the research, performed the analysis, and interpreted the data. Ramaya Sari, Nour Sriyanah, and Lumastari Ajeng Wijayanti wrote the script. Suprapto revised the manuscript and had primary responsibility for the final content and publication.

Conflicts of interest
The authors declare that they have no conflicts of interest.

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