

Analysis of Teacher and Student Responses to the Use of a Web-based Learning Management System (LMS) during COVID-19 Pandemic

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This study aims to analyze teacher and student responses to learning using the Learning Management System (LMS) during the COVID-19 pandemic. The respondents in this study were 100 teachers and students in Cilacap Regency, Central Java, Indonesia. 90% of respondents choose Google Classroom as the LMS they use. The information collection method used in this study was a survey with a questionnaire. The data obtained were then analyzed descriptively qualitatively by taking into account the aspects of the software used, content aspects and display aspects. The results of this study show that LMS helps online learning well during the COVID-19 Pandemic

Keywords—Learning Management System, COVID-19, Education, e-learning.

I. INTRODUCTION

Corona virus first appeared in China at the end of 2019 and began to spread to almost all countries including Indonesia. The deadly coronavirus has infected more than 140 million people and more than 3 million confirmed deaths worldwide[1]. With the Corona virus, the government immediately implemented protection to reduce the transmission of the virus during the pandemic. The rapid spread of the corona virus has made it difficult for the government to contain a larger spread. The coronavirus is a danger to the health of all human beings and requires urgent attention and an active response from all countries and all areas of society[2]. So far, the government has tried to provide an active response in the context of handling the corona virus pandemic and to maintain the health of the community by providing free, periodic and comprehensive vaccines[3].

The outbreak of COVID-19 requires the world of teaching in Indonesia to make different changes quickly and to improve and adapt to technological advances so that the teaching and learning process runs well. Especially after the stipulation of PPKM through Surat Edaran (SE) Menteri Nomor 15 Tahun 2021 which is none other than the Limitation of Community Mobility for the Java and Bali regions in mid-2021. It has been more than 1 year that the COVID-19 pandemic condition has pushed the education sector to make changes to the model. The learning prepare where the learning handle changes from traditional learning with a face-to-face classroom to online learning using technologies support[4]. Teachers must be able to quickly adapt to digital learning media[5]. At that point, teacher and students must be able to adjust within the confront of new challenges to changes within

the framework of learning in Indonesia. (LMS) is one of the arrangements utilized by education actor to back and oversee online learning so that the educating and learning handle proceeds to run well amid the COVID-19 widespread.

Learning Management System (LMS) is an information technology system developed to manage and support the learning process, distribute learning materials and enable collaboration between teachers and students[6]. Through the Learning Management System (LMS) students can access the learning materials provided, conduct discussion boards with teachers through discussion forums, conduct chat, and access assignments given by the teacher. Teachers are also encouraged to make learning materials more creative through learning videos that can be uploaded in the Learning Management System (LMS). LMS contributes in terms of utilization. The flexibility of the Learning Management System allows lecturers and students to access the LMS anytime and anywhere and through various devices, either via PC, tablet, or smartphone.

By using LMS, the distribution of learning materials and assessment of the learning process can be done easily. Learning Management System (LMS) is an application or software used to manage or manage online learning which includes various aspects including material, placement, management, and also assessment[7]. Learning Management System (LMS) is a software application that can help plan, and implement a learning process. Learning Management System (LMS) allows course owners or creators to manage them[8].

Learning Management System helps improve time utilization, because Learning Management System can be accessed online or online anywhere and anytime. In addition, LMS also has a learning quality that is not inferior to traditional methods. The characteristics of the LMS are :

- Using “self-service” or self-serving and “self-guided” or self-guided services.
- Collect and deliver substance or learning materials easier and rapidly.
- Consolidate planning activities on a “web scalable” or web-based platform.
- Supports a portability and a standard of content personalization as well as knowledge reuse.

Then, web-based learning management system is an LMS that can be accessed and used as a medium of learning online by simply accessing the website using a browser on a computer or gadget users without the need to download a specific application. Based on several studies conducted by several researchers, it turns out that online learning is also effectively applied at several levels of school level.

The learning system that is usually applied in schools is conventional-based learning. The novelty in this research is using an LMS-based learning system during the corona pandemic. Therefore, this study aims to find out more about the response of education actors (teachers and students) in using LMS during the COVID-19 Pandemic.

II. METHOD

This study uses descriptive qualitative research methods to describe and analyze educational actor reactions to online learning amid the Covid-19 widespread. The study was conducted in Cilacap Regency, Central Java by distributing online questionnaires in July 2021.

The choice of location was based on the researcher's considerations, because the location and distance of the location around the researcher's residence could easily obtain data.

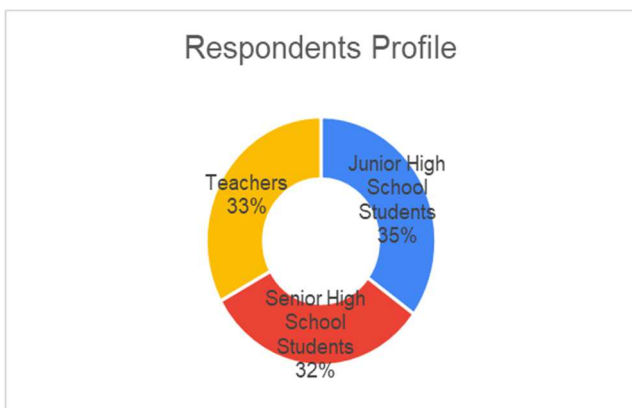


Fig. 1. Respondents Profile

Based on the data above subjects of this study were 100 respondents consisting of 35 junior high school students, 32 high school students and 33 teachers. The information gathering strategy used in this study was developed with the help of Google Forms distributed via links. The author also obtained sources from journals and articles related to the condition of education and the application of online learning in the COVID-19 Pandemic Period, especially in Indonesia.

The flow chart of this research is as follows :

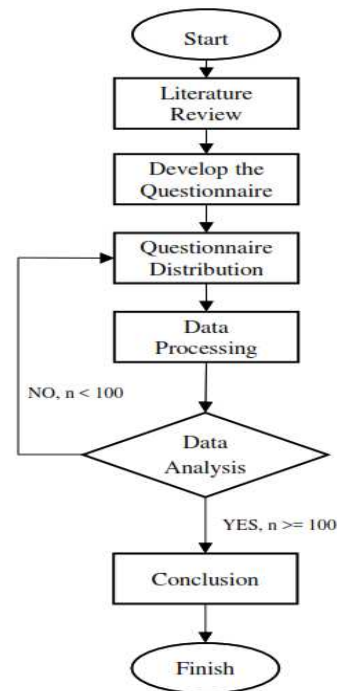


Fig. 2. Flow Diagram

This research was started based on the literature review about LMS. Based on the previous research method, the researcher develops its questionnaire and distribute it to the respondents which are teachers, middle school students, and high school students in Cilacap, Central Java. The data processing begins when the number of the respondents (n) is equal to or more than 100. When the number of respondents has reached the target (n ≥ 100), the research begins with the data analysis and ends with the conclusion.

In this study, the score from each respondent will be calculated and then converted into a percentage for easy analysis. The percentage of teacher and student responses can be calculated by the following formula:

$$\text{Respondent Percentage} = \frac{\text{Score}}{\text{Maximum Score}} 100\%$$

The survey conducted in this study uses a likert scale, where the variables to be measured are translated into indicator variables. These indicators are used as a starting point for compiling instrument items which can be in the form of questions or statements to be answered by respondents. Each instrument is answered using a Likert Scale which has a gradation of choices from very positive to very negative, for example: Very Bad, Bad, Neutral, Good, Very Good

The Likert Scale may be a psychometric scale commonly utilized in surveys and is the foremost broadly utilized scale in study inquire about. There are two forms of inquiry or explanation using Likert Scale, which is a positive question on the level of positive interest, and negative questions to the level of negative interest. Positive question are usually given a score of 5, 4, 3, 2,

and 1, while negative question are usually given a score of 1, 2, 3, 4, and 5.

TABLE I. RESPONDENTS'S ALTERNATIVE ANSWER

Description	Weight
Strongly Disagree	1
Disagree	2
Neutral	3
Agree	4
Strongly Agree	5

III. RESULT & DISCUSSION

To categorize responses from respondents, the authors divide into several categories. where the respondent's response category is determined by the percentage of the respondent's final score divided by the maximum score obtained. To simplify calculations, the author uses Microsoft Excel software as a tool. With the convenience of Microsoft Excel software, the authors categorize the responses into 5 categories : Very Bad, Bad, Neutral, Good and Very Good as the Table II below.

TABLE II. REFERENCE SCORE PERCENTAGE

Category	Reference Score Percentage %
Very Bad	< 36%
Bad	37 - 52 %
Neutral	53 - 68 %
Good	69 - 85 %
Very Good	> 85%

A. Result

From 100 respondents. 90% answered that they often use Google Classroom as an LMS. Another 10% use other LMS such as Quipper, Moodle, Ruangguru, and others. Teaching and learning can still be done remotely without meeting face to face using a number of digital platforms[9]. One of them is Google Classroom, which is widely used by teaching staff around the world to deliver study materials to conduct online exams. Google classroom is a flexible LMS because it can be collaborated with learning media, methods, models, and learning strategies[10].

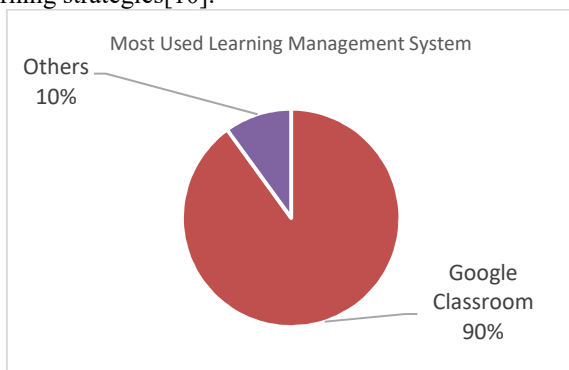


Fig. 3. Most Used LMS by Respondents

Respondents' responses to the use of LMS consist of 3 aspects. There are software used, content, and display.

TABLE III. SOFTWARE USED RESULT

No	Question	Percentage %	Category
1	Is the LMS easy to use in its use ?	82,8	Good
2	Can LMS be used by anyone without having special skills in computers?	80,8	Good
3	Does LMS not cost a lot of money to use?	78	Good
4	Can the LMS be properly accessed under normal conditions	81,6	Good
5	Can learning process be better by using LMS?	77,6	Good
6	Do you enjoy using LMS for learning?	78,2	Good

TABLE IV. CONTENT RESULT

No	Question	Percentage %	Category
1	Can LMS make information clearer and more interactive through images and videos ?	80,4	Good
2	Is the language style used in the LMS easy to understand ?	80	Good
3	Does LMS have forum facilities to ask questions ?	82,2	Good
4	Does LMS have forum facilities to or discuss ?	81,6	Good
5	Is Learning with LMS easy to understand ?	76,8	Good

TABLE V. DISPLAY RESULT

No	Question	Percentage %	Category
1	Does LMS have an attractive appearance ?	78,6	Good
2	Is the LMS website design consistent?	80,4	Good
3	Is the use of LMS colors interesting?	79,8	Good
4	Are the pictures and videos on the LMS clearly visible?	80,8	Good

B. Discussion

Some of us may still hear that online learning is considered less effective. Many technical obstacles that

occur during online learning such as lack of understanding in using LMS, signal difficulties, unavailability of gadgets, and no internet quota. In addition to technical obstacles, there are also non-technical obstacles from both teachers and students such as boredom with monotonous learning materials, teachers are less creative in using LMS as teaching materials, and communication between teachers and students is not smooth like in class. But these obstacles can be overcome according to a survey by the author. Learning with online systems currently uses LMS more as a place for interaction between teachers and students[11]. The learning and communication system continues to run well by utilizing the facilities available in the LMS application[12].

Based on the data from the questionnaire to 100 teacher and student respondents, it can be concluded. The use of LMS during the COVID-19 Pandemic in online learning has good indicators from all aspects. Because 90% of respondents use google classroom. The advantage of Google Classroom as a LMS is that it is free and easy[9]. Google Classroom is a free service for users and provides easy operating features so that it is easy for users to learn. Other than, Google Classroom provides a space for users such as students to ask questions about what they have not understood in learning.

One of the LSM, namely Google Classroom, is the most downloaded free application on the Google Playstore and Apple App Store, since some schools and universities have implemented learning policies[13]. from home, to prevent the spread of the COVID-19 pandemic. The Google Classroom app has been downloaded more than 50 million times. This achievement is quite extraordinary, because based on AppBrain research, Google Classroom is even outside the list of 100 popular applications and this application from Google is very helpful and useful for distance learning or online learning. Google Classroom is an application that can support the online teaching and learning process[14]. The integration of google classroom with collaborative learning methods can increase student character values[15].The majority of teachers use google classroom as one of the learning media because it is very effective[16].

The current study highlights that the study can be effective in understanding and evaluating the quality perspective of teaching and learning of teachers and students through Google Classroom[17]. Using Google Classroom is practically easy and interesting for students. This statement confirms that the use of LMS, one of which is Google Classroom, in the midst of the COVID-19 Pandemic is considered very successful in advancing student talent, changing the way of teaching and learning, as well as meeting government requests to continue the learning process.

Points out the following benefits of using Google Classroom[18].

1. **Easy to use** - Google Classroom's design purposefully simplifies the instructional interface and options used for delivering and tracking assignments; communication with the entire course or individuals is also simplified through announcements, email, and push notifications.

2. **Saves time** - Google classroom is designed to save time. It integrates and automates the use of other Google apps, including docs, slides, and spreadsheets, the process of administering document distribution, grading, formative assessment, and feedback is simplified and streamlined.

Data from teacher and student responses were obtained using Google Form. Response questionnaires were filled out after students used the LMS software. There are three aspects that become the focus of the question, namely Software Used Aspect, Content Aspect and Display Aspect. The results of the student response questionnaire for the Software Used Aspect got a percentage average of 79,8%, meaning that LMS is easy to use, can make learning fun and relatively does not require a lot of cost in its use.

As many as 84.8% of respondents who work as teachers stated that they liked using LMS during online learning during the COVID-19 pandemic. and 53.2% of junior high and junior high school students stated that they liked using LMS during online learning during the COVID-19 pandemic. This proves that enthusiastic educators show an interest in using technological advances in daily teaching and learning.

The percentage of student responses who like learning with LMS is lower than the percentage of teacher responses based on less creative and effective learning. according to students. This should be an evaluation of the teacher to always innovate and be creative in using interesting learning media.

In addition, the availability of features in the LMS is also liked by respondents and has been used during the learning process. This is evidenced by the average result of content aspect is 80.2 %. In the end, the average of display aspect is 79,9% which means good in appearance. Not only teachers who can make good use of LMS. Efforts to optimize online learning are carried out by teachers by providing interesting content references from recommended channels so that they can learn independently[19]. Creative thinking skills and independent learning can be optimally elaborated through the implementation of google classroom[20]. The use of LMS in completing assignments for students can also lead to creativity among students in developing the knowledge they already have. With varied learning methods from teachers, they can create a creative learning product that can develop thinking through their own analysis, without leaving the subject matter that has been delivered by the teacher and of course under the supervision of the teacher.

Recording to content and display aspects, An organization uses an LMS to train its students, so the LMS is only useful to the organization if it is used by a large number of students[21]. For a large number of students to use an online learning platform, you need an LMS that is easy to use – students who find it difficult to use it will tend to dislike learning with an LMS. Patterson believes that the most direct and important aspect of usability is the User Interface (UI). The LMS User Interface (UI) is something that companies are now realizing to be an important and main aspect to continue to develop.

The User Interface of the LMS, among others, is how students interact with the system. How the appearance of Icons, buttons, menus, search bars, welcome screens and news feeds has an attractive and modern design. Therefore, the user interface should be simple, attractive and naturale. The sign of an LMS having a good user interface is the elimination of redundant actions that users have to take to interact with the LMS.

Therefore, further promotion of an LMS is needed so that people can adapt to technology and no longer need to use conventional methods in teaching and learning activities. Teaching and learning is not limited by time, place, and distance in this current era. The younger generation is required to understand the E-learning system from an early age where E-learning is one of the learning support tools in the future era because it has many advantages for them.

IV. CONCLUSION AND SUGGESTIONS

A. Conclusion

Based on the discourse above, from the results of a survey conducted by the authors, teachers and students gave good responses in using LMS as a learning medium. Therefore, it can be concluded that web-based LMS applications such as Google Classroom which are most often used are very suitable for use as online learning media during the COVID-19 pandemic. By LMS, the distance learning process makes communication between teachers and students run well by utilizing technology that has been made quickly according to user needs provided by the LMS owner.

The advantages of an LMS can be seen from 3 aspects: the way it is used, the content, and the appearance it presents. The easier it is to use, the more people will use it. The better it looks, the more people will be interested in using it.

B. Suggestion

Based on the conclusions above, there are several suggestions that can be recommended by the author. For students, they can explore ways of learning even though they cannot meet the teacher directly. The existence of an LMS is one of the platforms that can be used effectively. For teachers, it is recommended to use LMS creatively and not only to deal with this pandemic but also to use it as a process of advancing technology into the teaching and learning process. In the process, other analysts are expected to conduct similar studies in more specific and specific to advance the quality of teaching online and LMS quality, especially in Indonesia.

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