

Research Article

The Utilizing of Moodle During Covid-19 Online Learning in Indonesia

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Abstract.

The use of information and communication technology during the pandemic was felt, especially in the education aspect. Indonesia is one of the countries most affected by COVID-19, which requires learning to be done online. The big challenge for teachers in providing online learning is creating effective and interactive learning. One of the learning media that can support the creation of these two aspects is LMS Moodle. This study aims to find out how much Moodle is used in Indonesian education during the Covid-19 pandemic. The method used is a literature review. The results of this study show that the use of Moodle has begun to be widely used at the university and high school levels, while at the junior high school level, elementary school is still rarely used. In addition, Moodle is proven to increase students' interest in learning, improve students' ability to think critically and creatively, also improve student learning outcomes.

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1. INTRODUCTION

The development of information and communication technology is indispensable for all aspects of life. The Covid-19 pandemic that has occurred has proven how important the use of information and communication technology is. Everyone is required to stay at home and all activities are carried out remotely for years to reduce the spread of the virus. One of the activities that must not stop during the covid-19 pandemic and must replace face-to-face interactions with distance interactions is learning activities in schools (1,2). The beginning of the pandemic was one of the phases where learning was carried out fully online until it gradually turned into face-to-face learning again with a limited number of students.

The necessity of distance learning certainly makes educators need to find ways so that learning can still be effective. One of the effective learning processes is the establishment of two-way interactions between teachers and students, students with



teachers, and students with students. This interaction can be built with asynchronous and synchronous learning (3). However, it can be seen that the facts on the ground are that there are still many teachers who have not been able to use information and communication technology as a learning medium (4). Some teachers also still use monotonous learning methods such as using the zoom platform face-to-face or just google meet. The process of learning and giving assignments is not varied so students are less able to capture learning in its entirety (5).

There needs to be a platform that can be used easily and has varied features, one of which is LMS Moodle. Moodle is a platform that has been widely used in various parts of the world as a learning medium. Moodle has several features that can build interaction in the learning process (6–8). These features include uploading material of various types (modules, videos, ppt), discussion forums, various evaluation models such as multiple choice, short entries, long entries (9,10). Moodle is one of the popular platforms used in various countries around the world because it has high effectiveness for teaching and learning activities.

Based on the above background, the researcher wants to research the application of Moodle-based e-learning at all levels of education to know how much Moodle is used as an interactive learning medium during the covid-19 pandemic in Indonesia.

2. METHOD

This study uses a literature review study method, which is a method carried out to analyze several selected kinds of literature from several sources so that they become the latest conclusions and results. The journals taken are journals that discuss the use of Moodle in Indonesia during the COVID-19 pandemic. The journals that we collect 72 International Journals published in 2020-2022 and after a review of journals that meet the number of 56 journals. Journal traces were obtained from Mendeley. This study takes a multidisciplinary approach covering all subjects at all levels of education in Indonesia. The data we want to take is how many Moodle users are at each level of education and the effectiveness of Moodle usage data.

3. RESULTS AND DISCUSSIONS

3.1. LMS Moodle

Modular Object-Oriented Dynamic Learning Environment (Moodle) is a Learning Management System (LMS) that is widely used in the learning process. Moodle is a dynamic learning environment using an object-oriented model. In providing it, Moodle provides a complete software package (Moodle + Apache + MySQL + PHP). Moodle was built to create a space for interaction between students and teachers. Moodle can be used as a learning medium where Moodle can be accessed free of charge. Moodle is software that is open source and provides freedom in its use, users can create and modify learning. Moodle can provide classroom learning situations digitally. Moodle uses “connectivism” which means teachers can share experiences and allow people to build on previous experiences or people can learn from each other (11).

Moodle was first launched in August 2002 by Martin Daugiamas with Moodle version 1.0. Initially, he saw that many students wanted to use the internet, so that's where he got the idea to create an e-learning platform, namely Moodle (11). Until now, Moodle continues to be developed both in terms of features and appearance. The latest version is the 2014 version, namely Moodle 2.5.1+. based on a book published by Dr. Ambar Sri Lestari (12) The latest version of Moodle has features such as:

1. Course Chatting
2. Course List
3. Navigation Block
4. My Mobile Theme
5. Gravatars
6. More Plugins

3.2. Moodle Feature

Moodle has several features that can support online learning activities (12). Some of the supported learning activities are video learning, discussion forums, chats, materials, and quizzes. The following are common features provided by Moodle.

1. User Management

Moodle has easy features to manage who can access learning materials. Users can add, edit, and delete users. Registered users can be assigned as administrators, course creators, teachers, and students. Each role can be arranged in more detail regarding its access rights to the Moodle application.

2. Course Management

This feature makes it easy for users to add various forms of learning. Users can manage learning by adding new material, editing, and deleting existing material. This feature has various activities such as adding material, quizzes, surveys, and discussion forums. The material to be taught is not only in written form, in Moodle the user can add material in the form of videos, and experimental simulations. Moodle also displays reports on quiz results as well as course access reports.

Learning can be grouped according to desire. Each source has locked access, limited by determining which student users can access learning. In addition to managing access to learning, learning can also be hidden and disabled.

3. Language Setting

The default language for Moodle is English. However, the user can set the language he wants to use according to his wishes. This language activation can be found in the language packs menu.

4. Modules Management

Moodle provides many customizable modules/plugins. Users can use the provided modules and add new plugins that have been developed by other users for free. Plugins in Moodle include modules for training activities, modules for display, and content filtering modules. Copy that, and users can also create and develop their plugins according to their needs.

5. Application security management

Moodle provides several application security measures such as site policies, module security, and anti-virus. These features can be activated and deactivated according to user needs.

6. Appearance Setting

Moodle can be customised with a display theme to make learning more comfortable. Moodle provides a variety of free themes available on the Moodle web and other webs. Moodle provides specific instructions on how to create themes, or we can download and import them into the Moodle web.

7. Server Setting

System requirements for applications can be managed through applications, such as connectivity with email application servers (SMTP servers), application sessions, website access statistics, server performance, upload and download files, and PHP info.

8. Developer Documentation

The official Moodle website provides documentation for developers to facilitate application development according to user needs. During application development, various discussion forums can provide solutions to the problems found. In this forum, there are many developers from various countries who participate and contribute.

3.3. The Utilization of Moodle Before the Pandemic COVID-19

The COVID-19 pandemic situation that occurred in the past two years has changed many aspects of life, including the education sector. The existence of government regulations that require all people to stay at home and limit activities causes changes in learning patterns in schools. Face-to-face learning is transferred to online learning. So that requires educators to innovate, one of which is by utilizing electronic learning applications, one of which is Moodle. Before the pandemic, many electronic learning applications had been used. Here are some of the benefits of using Moodle before the pandemic:

In Utami's research, moodle can be used as an interactive medium that can help improve the quality of learning and support learning in the classroom. Students who miss lessons can access learning materials at any time, making learning more dynamic. In addition, e-learning also functions as a discussion forum between teachers and students and can also be used as an online quiz, so that all learning process activities become very effective and efficient (13). In another study, the use of Moodle as an electronic learning tool will provide a new learning atmosphere, which can stimulate creativity and increase students' learning desires. In addition, because Moodle is an internet-based medium, this can be used as a support for internet technology knowledge for both students and teachers (14).

Moodle can be used for distance learning as well as face-to-face learning. Before the COVID-19 pandemic, Moodle was used for blended learning, where students got social experiences and experiences using technology in learning. The use of blended learning from an early age is very important because they get two learning experiences

simultaneously (15). Moodle is used as a distance learning medium. When the COVID-19 pandemic hit, this made it very easy for many teachers because of the complete Moodle features, so that students still got a social experience even though learning was done online. Moodle features that support distance learning include uploading and sharing materials, forums and chats, quizzes, gathering and reviewing assignments, and recording grades (16). Moodle is also one of the media that can be used on all devices, both laptops, computers, and cellphones. This allows students to easily access learning materials anywhere and anytime

The results and discussion should be presented in the same part, clearly and briefly. The discussion part should contain the benefit of the research result, not the repeat result part. The results and discussion part can be written in the same part to avoid the extensive quotation. Tables or graphs must present different results. The results of data analysis must be reliable in answering research problems. References to the discussion should not repeat the references in the introduction. Comparisons to the findings of previous studies must be included. If this template is applied when writing the full paper, headers and footers will be set automatically.

3.4. The Utilization of Moodle in Indonesia During the Pandemic COVID-19

Using Moodle During a pandemic, it is an alternative for teachers to facilitate distance learning. Moodle is used from the very basic level up to the university level. 56 studies have been collected and divided according to the level of education.

From the diagram above, it can be seen that the use of Moodle at the early childhood and kindergarten levels was 1.8%, at the elementary school level and at the junior high school level it was 3.6%, at the senior high school level it was 34%, and at the university level it was 57%.

3.5. The Utilization of Moodle at the Kindergarten and Elementary Levels

The use of Moodle at the early childhood and kindergarten levels is relatively small, namely 1.8%. This is due to the difficulty of students using technology, media, and Moodle. It is not possible to provide knowledge about the use of Moodle during preschool. The kindergarten school in Indonesia has been finding progress lately

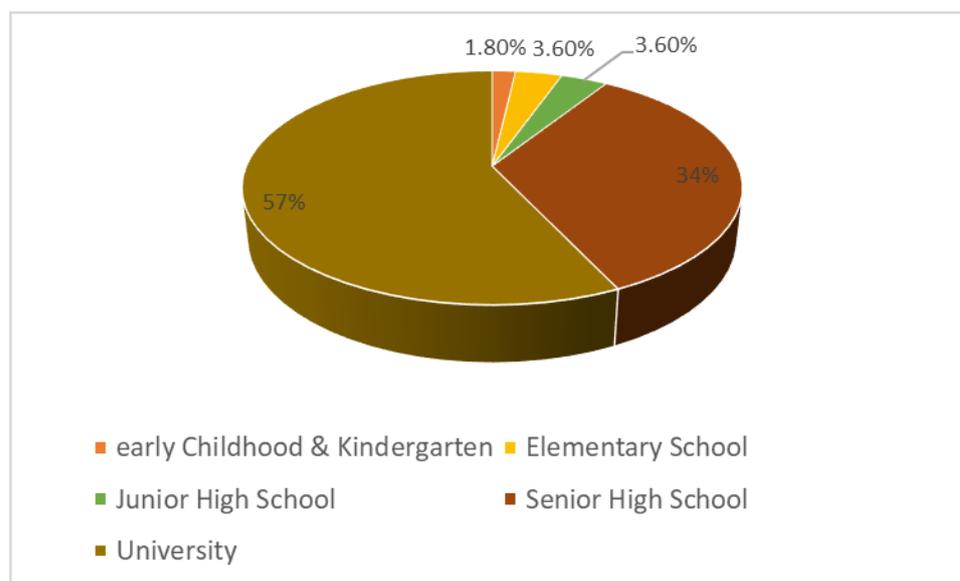


Figure 1: The Utilizing of Moodle in Indonesia During The Pandemic Covid-19.

because there were pre-kindergarten students who received 2-3-year-old students. Of course, this is supplying basic knowledge to early childhood (17).

The use of Moodle at the elementary level is also fairly small. In all the journals we reviewed, only 3.6% researched the use of Moodle at the elementary school level. The conveniences of using Moodle and the number of features that are fairly complete compared to other platforms make teachers use Moodle. Moodle is used at SDIT Lukman At-Taqwa in Surabaya and a private school in Palembang. The results show that the teacher needs to master Moodle because it is very helpful in the learning process. Students will not be bored learning a lot of material because it is packed with varied activities. Moodle can accommodate various learning material formats, such as Word, PowerPoint, PDF, and SWF. In addition, teachers can also include material in the form of links as additional learning references for students (7). However, there are still many teachers who have never used Moodle before. Research conducted by Lisnani et al. shows that only 2 out of 8 teachers have ever used Moodle as a learning medium. Therefore, there is a need for training or modules that teachers can use to deepen Moodle. The most important thing in Moodle is the guidebook (18).

3.6. The Utilization of Moodle at the Middle and High School Levels

The data obtained from the journals that we reviewed on the use of Moodle at the junior high school level was low, at 3.6%. This research was conducted at SMPN 7 Medan,

SMPN 7 Yogyakarta, and MTsN 1 Yogyakarta. The results we get are that many students feel bored with learning that tends to be monotonous. The use of Moodle at the junior high school level is quite effective in improving students' high-order thinking skills in a fun way. can attract students' interest in learning to listen with one of Moodle's features, such as Moodle Cloud (19). For teachers, Moodle can be used as an alternative learning medium that can improve students' high-order thinking skills (20).

At the high school level, Moodle has begun to be widely used as a learning medium. The data we obtained were from 34% of all the journals we reviewed. Several studies show that online learning tends to be monotonous because learning focuses on the teacher. Learning media is needed so that students can enjoy learning and not get bored (21,22). Moodle can be one of the learning media that is not monotonous because the teacher can provide learning materials in various forms. Students are not bored with learning because they can access learning materials in various forms that can be accessed anytime and anywhere. Materials that can be uploaded on Moodle can be in the form of PowerPoints, modules, or videos. This supports students who have different ways of learning to understand the material provided by the teacher (23–27).

The features found in Moodle will focus on students. One example of student-centred activities is the discussion forum. With the discussion, students will try to find answers to the discussion topics being discussed, and if they have difficulties, they can ask questions. The role of the teacher during discussions is very necessary to liven up the discussion and help students if there are mistakes or ignorance. The discussion forum on Moodle can be used to solve problems, answer questions, and find out student knowledge and decision-making processes (6,28,29). With the discussion, students will get used to thinking broadly, which can train their high-order thinking skills. Where the results show that learning using Moodle media can improve communication, collaboration, problem-solving, critical thinking, and thinking skills (8,30–32). The results of research conducted by Permana et al. also show that various student evaluation features can also improve students' ability to think critically. The evaluation features contained in Moodle include long descriptions, short descriptions, and multiple choice. An interactive and maximal learning process will produce good learning outputs, one of which is an increase in students' ability to explore the material (33–35).

One of the difficulties faced by high school teachers in teaching during the COVID-19 pandemic was the absence of interactive and easy-to-use learning media. In addition, students also find it difficult to capture learning because teachers do not use varied learning methods. The ease with which teachers can operate Moodle is one of the

advantages of Moodle as a learning medium. Moodle has all the complex features so that the design is not too complicated, which can make it easier for teachers to use it (36–38). However, at the beginning of learning, the teacher must provide information on how to use Moodle and provide clear directions when learning takes place. This can make it easier for students during the learning process (39).

3.7. The Utilization of Moodle at the University Level

The most data on Moodle usage is at the university level, with a percentage of 57%. Moodle's complete interactive features give students higher learning motivation than when studying conventionally or just listening to lectures (40–44). The increase in student motivation is in line with the research conducted by Asrini et al. (45) which found that Moodle has 56 features that have been approved by experts. Increased student motivation to learn is also in line with improving learning outcomes, student capacity for interest in learning, critical thinking, problem-solving, self-confidence, creativity, and communication between students and lecturers (46–54). The recommended learning activity is blended learning with various activities that can lead to effective learning outcomes (55). These activities can include discussions to solve problems or developing a project that can improve students' high-order thinking skills (23,56). With an online discussion forum, students can ask questions more freely because they are not limited by time and place. Learning flexibility is one of the advantages of online learning when supported by the right learning media (57,58).

Feriandi et al. (59) proved that Moodle provides convenience for students who have not passed the competency test due to limited time to repeat it. In addition, many studies agree that Moodle can be easily used by both students and lecturers. One of the things that makes it easier for users to use Moodle is its simple layout and well-functioning system (53,60). In addition to the many advantages it has, Moodle also has several weaknesses, including the absence of voicemail features, video conferencing, auto refresh, and task reminder features so lecturers have to use other platforms (61). In addition to the constraints of the Moodle system itself, the external constraints experienced by students are internet network access which is different in each region (62). Another obstacle that will be experienced is the passive attitude of students in responding to learning and plagiarism (62,63). To monitor student activities during the learning process, lecturers can see student activities through activity logs and can perform analyses as done by (64,65). By analyzing the data, the lecturer can evaluate to

find out how far the deepening of students' and students' experiences in using Moodle is. Student's learning readiness can also be seen with self-assessment to assess the achievement of learning objectives and make improvements in the learning process (66).

4. CONCLUSION

The use of Moodle in Indonesia has not been evenly distributed, as can be seen from the percentages at the kindergarten level: 1.8%; Elementary School 3.6%; Junior High School 3.6%; Senior High School 34%; and Universities 57%. The many interactive features found in Moodle can increase student motivation to learn and students' ability to think critically and creatively, which can improve student learning outcomes. Moodle can be used for blended learning, so it can still be used for face-to-face learning.

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