

Comparison of Learning Management System Moodle, Edmodo and Jejak Bali

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Abstract— E-learning, some features can be used by students and teachers from making online competency tests, student activity, learning process graphs, or value recapitulation. In this study, analyzing the LMS in the comparison of Moodle, Edmodo, and Jejak Bali so that users can compare and distinguish LMS and their respective uses. The results of this study are to provide an understanding of the differences from LMS so that the use of LMS can be maximized. As a material for consideration of the application of electronic learning that is evenly distributed in every school in Indonesia. This type of LMS is widely used by users, especially among educators, knowing the function details are expected to provide convenience in the current learning system.

Keywords: *e-learning, Edmodo, Jejak Bali*

I. INTRODUCTION

With the development of an increasingly modern era and increasingly rapid technology, facilitating work, especially in the field of education. The developing education system demands significant use of technology. Teachers can use technology to support classroom learning, and students can use technology to facilitate learning activities. The form of learning is always illustrated by the teacher and student face-to-face meetings that take place in class or indoors, in this context it is a place to convey and explain learning material directly in the same room. The concept of learning can be better through different teaching methods. Activities related to science can be easily obtained through the internet, making it easier to obtain this information. Technology plays an important role in the accuracy of data and information that can be easily obtained. In this case, the role of technology in the field of education is e-learning.

The use of the internet as a medium of learning is possible to occur by providing online learning facilities. Online learning

is defined as a type of learning that allows the delivery of teaching materials to students using internet media or other computer network media. Online learning can be done by providing LMS (Learning Management System) software that provides features that support learning activities [1].

With the existence of e-learning, it can develop the interest of students or teachers in teaching and learning activities, and the effectiveness can save time and optimize the delivery of material or discussion that can be easily accessed by students through the teacher concerned. Like learning activities in schools, teachers can deliver material and practice questions or competency tests through e-learning. Various aspects of life are inseparable from computers and networks, so e-learning is already available for educators and training providers who want to display their programs online that are already available in this advanced age such as Moodle, Edmodo and Jejak Bali.

LMS that we rely on as a learning tool has considerable potential in the development of knowledge and development of competencies. Thanks to the various services offered by this e-learning platform, individuals can access and use interactively various information sources available to them anywhere, anytime. They can also arrange customized training programs and thus develop their abilities to the highest potential level according to their needs [2].

This application is made to facilitate learning activities that can optimize the process of understanding and delivering the material. The concept of education that utilizes technology can develop because it is considered an effective way to deliver and evaluate learning. Learning that focuses on the process will be a more promising understanding of the material presented because the original learning is only done indoors and in class, this time can be done anytime and anywhere. The concept of web-based electronic learning is a form of learning concept that prioritizes the ease of access to time and place.

II. METHOD

The writing method used to collect material in the form of a survey conducted on several users who use e-learning analyzes the LMS and collects theories taken from sources on the internet via Google and by studying and reading sources of information data that are related to the purpose of writing this scientific article.

This method is a research method that requires a lot of activity to read data, analysis, and information that has been collected. Literacy studies are also a method of collecting and searching various sources of books, magazines, articles, and journals and documents relating to research.

Research conducted based on a qualitative descriptive approach, which examines the status of an object, condition, system of thought, function, and perception because it does not use the calculations in this study.

III. DISCUSSION

LMS is used to create web-based online learning material and manage learning activities and results. This LMS is often referred to as the e-learning or learning content management system (LCMS) platform. The point is LMS is an application that automates and virtualizes the teaching and learning process electronically [3]. Many terms are used to explain opinions about e-learning, namely: virtual learning, online learning, internet-enabled learning, or web-based learning. There are things that need to be considered as electronic learning requirements that can be done, namely: Teaching and learning activities carried out by connecting to the internet network or online. There is support for learning services that can be used by students or teachers. The positive and open attitude in understanding the use of technology for users.

The term e-learning has many meanings due to various uses of e-learning today. Basically, e-learning has two types, namely synchronous and asynchronous. Synchronous means at the same time. Asynchronous means not at the same time. Students can take different learning times with educators providing material. Asynchronous training is popular in e-learning because students can access learning materials wherever and whenever. Students can carry out learning and complete it at any time according to a predetermined schedule range. Learning can take the form of reading, animation, simulation, educational games, tests, quizzes, and task collection [4].

Basically, e-learning is a learning process that focuses on teachers and students interacting directly with one another, both of which must be connected to the internet or online network and access to e-learning together. In its implementation, synchronous e-learning meetings require students and educators to access the internet and open e-learning simultaneously. The concept of learning with e-learning is that there is a process of developing knowledge that does not occur in a classroom or room. The teacher can centrally review the development of students by making competency tests, graphs of learning processes, or recapitulation of student grades. All students can communicate and discuss the material discussed and delivered anytime and anywhere by accessing the system available online. Such a

system will increase the knowledge of all students in the development of technology and science. In this case, it will also help in learning activities so that the teacher's burden is reduced. Because in this system, there are several features that work to facilitate the work of the teacher because some tasks can be taken over in a computer program.

The features available in LMS for educational institutions are the management of user access rights (user), management of courses, management of teaching materials (resources), management of activities (value), management of grades (grades), displaying scores and transcripts, and management of e-learning visualization so that it can be accessed with a web browser [5]. The advantages of e-learning can save time and facilitate the process of delivering material, not bound by the place because it can be done anywhere, reaching a wide area and place, training students to learn more independently to get knowledge because information can be easily accessed through the internet. The use of internet networks for e-learning is also inseparable from shortcomings, namely the lack of direct interaction in the sense of lack of good social interaction between the teacher and other students who ignore social aspects, and not all places have good network facilities — availability of electricity, telephone, and internet.

Indonesia is a country that has a positive impact on the application of electronic learning. According to the report data docebo.com in 2017, Indonesia ranks 8th in the world based on the total e-learning market each year, which is 25%.



Fig. 1. Use of E-Learning around the world

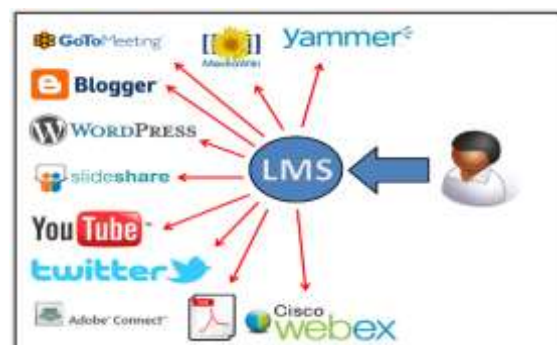


Fig. 2. LMS Support

The implementation of e-learning is categorized into three parts, depending on the needs and proportion of internet users for the needs of electronic learning activities. The Web Course is the first implementation of e-learning where users use it intensively and do not require face-to-face meetings between

teachers and students. Discussion of material, exercises, assignments, and full exams are carried out in e-learning. Web-Centric Course is the second implementation of e-learning where the use of the internet is done for learning that is done remotely and can be face-to-face, some material is passed through e-learning while some are done directly through face to face in class or room. This method is used to create balance and function to complement each other. Web-Enhanced Course uses the internet network to support the quality of education and learning done in the room that takes place face to face. The internet functions as a support in the creation of teaching and learning activities to facilitate teachers and students in the activities of e-learning.

Moodle, Edmodo, and Jejak Bali are LMS that is popular among educators. Choose between existing LMS to determine which electronic learning system is best because each LMS has advantages and disadvantages. Basically, Edmodo's appearance is almost the same as Facebook, which is intended so that students can be interested and more enthusiastic in learning activities using e-learning, the more complex appearance of Moodle, and the simple display of Distance Bali make it easier for users to use the e-learning. Of the three popular LMS, there are the most important things as follows:

TABLE I. E-LEARNING COMPARISON




	Edmodo	Moodle	Jejak Bali
			
Basic	Cloud and Social Network	Course Management System and Web	Web
User Interface	Simple	Complex	Simple
Integration With Mobile Applications	Integrated Application Android & OS	Integrated Development Options	None
Tools	None	Plugin and Module	None
Compatible Format File	pdf, pptx, html, swf, doc, xls, txt	pdf, pptx, html, swf, doc, xls, txt	pdf, pptx, doc, xls, txt
Language Support	English	English & Indonesian Language	Indonesian Language
Basic Price	Free Version and Premium Version costs \$2,500/year	Open Source and free to download	Free Version



Fig. 3. Edmodo's Main Page



Fig. 4. The Main Page Of Moodle



Fig. 5. The Main Page Of The Jejak Bali

A. Edmodo

Edmodo is a social networking based learning platform that is intended for teachers, students, and parents of students. Edmodo is arguably an e-learning program that implements an easy, efficient, and enjoyable learning system. Electronic learning tools used to present learning connected with mobile applications on smartphones that allow teachers, students, and parent's students to easily interact online outside the classroom without limitation of place and time, anywhere and anytime. This web-based learning media is easy to use because the features and views in Edmodo keep up with the development of social networks that are often used by students.

Edmodo bears similarities to Facebook social networks but the significant difference Edmodo is intended for educational and educational purposes, Edmodo, is also used for all subjects except subjects that require direct activities such as sports or arts, for learning that requires direct activity, so students need theory and direction in its implementation.

The features contained in Edmodo can be used for the implementation of learning that can be utilized according to the needs of teachers, students, and parents of students who each have different needs. Edmodo's features include: Polling is one of the features that can be used in Edmodo specifically for teachers to know student interactions and responses to certain things. Gradebook is a student value record that can be used by teachers to give an automatic or manual value, and the teacher has full access while students can only see grades in graphical form or direct assessment. The quiz is only made by the teacher to give online evaluation examinations to students in the form of multiple choices or problem descriptions. File and Links which functions to send file attachments. The library that serves to upload learning materials such as material, images, presentations, animations, videos that can be used by teachers or students. The assignment is a feature of giving assignments online to students equipped with deadlines. Badge Awards are a feature for awarding students or groups. The Parent Code is a special feature for parents to see the activities of their children.

The advantages obtained using e-learning are: learning activities that do not depend on time and place, ease the task of the teacher to discuss material and provide student assessment, provide opportunities for parents to monitor the development and learning activities of their children. While the shortcomings of Edmodo are: language support used is still English and not fully Indonesian, making it difficult for teachers or students.

B. Moodle

Moodle is the name for a free web-based application program for educators who can transform learning media into web media, one of the most popular open source LMS. Modular Object Oriented Dynamic Learning Environment or Moodle is a Course Management System (CMS) software that is open source so that it can be upgraded and developed or used by anyone with a General Public License (GNU) license. To develop Moodle, there is a need for third parties to adjust the platform to suit their needs.

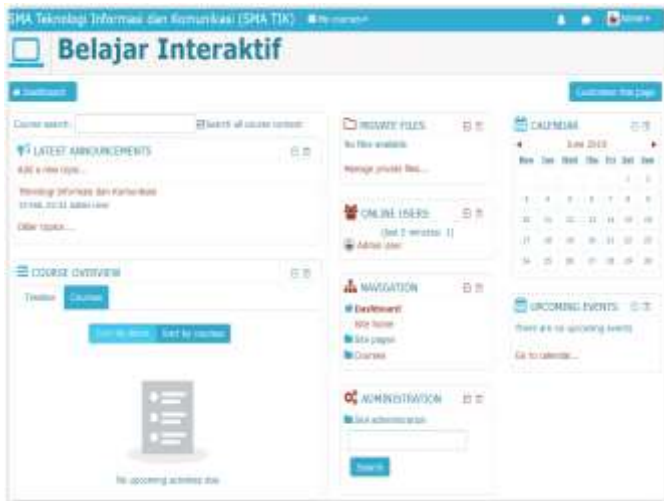


Fig. 6. LMS Moodle Dashboard

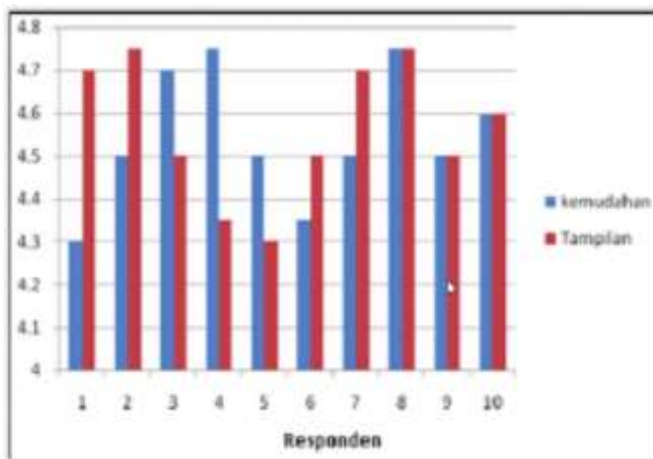


Fig. 7. Survey of the Use of Ease and Moodle Display of Teachers and Students

Currently Moodle has been used in more than 150,000 institutions in more than 160 countries worldwide. The Moodle

application was first developed by Martin Dougiamas in August 2002 with Moodle Version 1.0. Currently Moodle can be used by anyone on Open Source. Some learning activities supported by Moodle include chat, assignment, forums, quizzes and many other features [6].

The SCROM (Sharable Content Object Reference Model) used by Moodle is a standard learning package that can use several formats of learning material in the form of text, animation, audio or video that is electronic in nature. With the SCROM format, learning can be done anywhere, so that educational institutions or schools can share and exchange learning materials to support each other e-learning. Educators are tasked with making and preparing learning material that will be delivered to students in the form of writing, audio, video or animation. Storage in SCROM format can be shared anytime and anywhere the educator is on duty.

The advantages obtained from e-learning using Moodle are: simple, effective, compatible with various browsers, easy installation process and supports Indonesian, there is a site management feature that functions to manage all, user management, there are several features that can be used in the form of : chat, elections, forums, quizzes, surveys and workshops. Moodle is free and open source so it can be adapted to the needs of the educational environment besides it can be developed and adapted to the educational needs in Indonesia. But from these advantages Moodle also lacks one of the necessities of understanding the system, experts to become administrators for maintenance in building the system.

C. Jejak Bali

The Bali Creativity Explore Network or the Bali Trail is a virtual class originating from Bali, intended for every school in the geographical area of Bali. From 333 high schools / vocational schools as organizers who have utilized the internet network and can understand the use of technology using LMS Jejak Bali as electronic learning. Virtual classes are learning based on a learning environment that is held without direct meeting between teachers and students, where the teacher provides learning materials in digital content that can be shared, accessed and stored through e-learning used. Virtual classes facilitate teachers to upload learning materials so that they can be downloaded directly by students who join groups or classes.



Fig. 8. Statistics using the Bali Creativity Exploration Network

Currently the Bali Footprint has features that can be used by users, namely: creating a class to discuss one specific subject only teachers who can make classes and add content to classes such as modules, quizzes or add evaluation questions online, see the development of students in in class and giving assessments and announcements, discussion forums can be used by teachers or students, there are training in teacher classes to discuss and discuss immediately the problems that exist.

There are advantages in learning using e-learning. The Bali trail, namely: interactive and flexible learning can foster student interest in learning activities compared to other media, not bound by space and time because it can be accessed anytime and anywhere and students can be more active in learning material distributed by teachers through the web. From the advantages of Jejak Bali, there are shortcomings: teachers or students must have a good internet connection to be able to access e-learning Jejak Bali, not integrated with mobile applications so they have to use laptops or personal computers to access web-based e-learning.

IV. CONCLUSION

With the existence of e-learning it can be concluded that electronic learning can realize an education system that is more effective in its application and efficient, compared to other learning media. E-learning can develop the interest of students or teachers in teaching and learning activities, the effectiveness of which can save time and optimize the delivery of material or discussion delivered along with evaluation and assessment carried out. But in the implementation of e-learning there is still a need for direct interaction between the teacher and student to create good social interaction.

LMS has the ability as a learning tool that has considerable potential in knowledge development and competency development. Thanks to the various services offered by this e-learning platform, individuals can access and use interactively various information sources available to them anywhere and

anytime. This facility is very supportive of the existing education system in Indonesia so that it can advance the existing system for the better, the use and application of LMS should be evenly distributed throughout Indonesia.

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