Development of Spada Wimaya Online Learning Course Based on Moodle During and After the Covid-19 Pandemic

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Abstract

In line with advances in information and communication technology, now the learning approach has changed towards distance learning in networks. People can study anywhere, anytime, with anyone. This study aims to develop an online learning model and apply it to improve the effectiveness of lectures at UPN "Veteran" Yogyakarta. One step forward in using network technology and information technology to develop online learning to become full supporting learning and reviewing the results of their use as a learning medium in UPN "Veteran" Yogyakarta. The research method uses qualitative methods and the development methodology used is prototyping. To strengthen the online learning system, several concepts, platforms, scenarios, and procedures for implementing learning can be agreed upon by the academic community. The research output will produce a primary online learning platform and online learning guides that support the moodle-based Learning Management System (LMS).

Keywords: course, Learning Management System, Covid-19, Moodle

I.   INTRODUCTION

Information technology (IT) has now grown to reach almost all areas of human life. One of the technological innovations currently being utilized in higher education institutions, especially in education, is the existence of an e-learning information system or virtual distance learning system. Distance learning is needed during the Covid19 pandemic era and after the pandemic. E-learning is learning at all formal and informal levels that use computer networks either the internet or intranet, to deliver teaching materials, interactions, or facilities (Tinio, 2006). E-learning in general can be used for distance learning media. The learning in question is more about ease in the implementation, including uploading / downloading lecture materials, lecture information, assignment information, assignment submissions, quiz implementation, internal discussions, and online assessments of student quizzes/assignments.

The implementation of e-learning at UPN "Veteran" Yogyakarta has been initiated since 2007. Moodle stands for Modular Object-Oriented Dynamic Learning Environment, which is a CMS (content management system) that specializes in virtual remote learning. This content management system is always developed regularly so that various weaknesses in the previous version can be overcome by upgrading to the latest version. The application of e-learning at UPN in 2009 was able

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to survive until 2013 before 2013 was carried out by upgrading hardware and Moodle to a better version. There are not many academics who have taken advantage of the ease of learning through E-learning due to several obstacles. Constraints/barriers that are often complained about are not familiar/unfamiliar with the use of the system and not knowing how to use e-learning intensively. The Moodle currently used has not been developed to the last version, which hinders online learning because some services are not fully available.

The problem in this research is developing an updated version of Moodle. By migrating and updating to version 3.8, it is hoped that it will support online learning during the COVID19 pandemic. The advantages of Moodle version 3 are able to integrate with streaming applications such as zoom. With the COVID19 outbreak, at least several universities have implemented online lectures (online). Learning model schemes and platforms are an important issue in this research.

Based on several existing references, this study focuses on upgrading moodle version 3 which will support online learning and the uniformity of the LMS platform in each university. Information technology-based learning systems or what is often called online learning, provide an advantage in terms of affordability and can be accessed at various places and times. Various groups of society can access this learning model. The impact of the industrial revolution 4.0 has now been felt by many people to connect online, such as social media, and be able to access information quickly. One of the uses of information and communication technology for developing learning systems in higher education is an online learning system (Mustofa et al, 2019). Students are required to be independent in various matters, especially when trying to study lecture material. The lecturer is here as a motivator and facilitator of learning, students determine everything. This learning process is considered to draw out students' abilities because the delivery of data prepared in the media is fun and easy to digest, so it makes students want to know more. This is in line with the constructivism learning theory that science is built by students through the learning process, not transferred from lecturers to students. Given this, there is no reason to doubt or even reject online learning. UPN "Veteran" Yogyakarta is one of the new state universities that is also affected by Covid19, so it is necessary to develop online learning as a preventive effort and alternative solutions in the future if blended learning is actually implemented. Information technology is no longer a compliment but is a necessity in learning, especially in universities. As information technology advances, the educational process online will make it easier for educational institutions to monitor tri dharma activities. With the COVID19 outbreak, at least several universities have implemented online lectures (online). Learning model schemes and platforms are an essential issue in this research. Based on several existing references, this study focuses on online learning models, platform uniformity, and online learning implementation instructions so that UPN "Veteran" Yogyakarta has one reference for implementing blended learning, especially when conditions are not expected.

II. LITERATURE REVIEW

II.1. System
Quoted from the Enterprise Information System O'Brien and Marakas (2007) defines that a system is a collection of several interconnected components, clear boundaries of the tasks and functions of each part that work together to achieve one goal. The system definition according to Jogiyanto (2006) is a collection of elements that interact to achieve specific goals. This system describes the facts of events such as places, things, and people that happened. Some of the characteristics of the plan (Fatta, 2007), namely

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a) Boundary is a description that shows what is included in the system and outside the system.
b) The environment is everything that is outside the system.
c) Input is a resource or everything from the internal system and is consumed and manipulated by the system.
d) Output, resources which are the result of the system.
e) The process becomes a process in the system that informs the input into an output form.
f) Control, a method of monitoring and managing the subsystems in carrying out the process.
g) Feedback is an assessment mechanism or provides input on what has been processed.

II.2. Information

Understanding information according to Kenneth C. Loudon (2016) is data that has been processed into a form that is useful and can be used for humans. Meanwhile, according to Jogiyanto (2006), information is data that has been processed in a way that is more useful for those who receive the information. Information itself can be in the form of messages, voices, data to have meaning and can provide input to strategic policymakers. Information is the knowledge that is communicated. The report itself has the following characteristics (Davis, 1999):

a. That information can be true or false.
b. Information is new
c. Information can be in additional form
d. Information can be used for correction
e. Information reinforces existing information

II.3. Blended Learning Concept

Blended learning is a term that comes from English, which consists of two syllables, combined and learning. Blended means a good mixture or combination. Blended learning is a combination of the advantages of learning that is done face-to-face and virtually. Semler emphasized that: "Blended learning combines the best aspects of online education, structured face-to-face activities, and real-world practice. Online learning systems, in-class exercises, and on-the-job experiences will provide them with valuable experiences. Blended learning uses an approach that empowers various other sources of information. Blended learning has begun to be widely used and famous in education and training in recent years. Blended learning, hybrid learning, and mixed-mode learning have the same meaning (Dziuban, 2004). Each campus or institution uses a different term. Therefore, Blended learning has no specific purpose. Moebs & Weibelzahl defines Blended learning as the mixing of online and face-to-face meetings in one integrated learning activity. Blended learning also means using various methods that combine face-to-face meetings in traditional classrooms and online teaching to obtain learning objectivity (Akkoyunlu and Soylu, 2006). Meanwhile, Graham said that Blended learning is an approach that integrates face-to-face teaching and computer-mediated instruction in a pedagogic environment. The original meaning and the most common Blended learning refers to learning that combines or mixes face-to-face learning and computer-based learning (Dwiyogo, 2011). According to Thorne, Blended learning is a combination of multimedia technology, streaming video CD ROM, virtual classes, voice-mail, e-mail and teleconferencing, online text animation, and video-streaming. All of this is combined with traditional forms of classroom training and one-on-one training. Blended learning is the most appropriate solution for the learning process that is appropriate not only to the learning needs but also to the learning styles of students.

II.4. E-learning

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E-learning is the delivery of learning, training, or educational programs using electronic means such as computers or other electronic devices such as mobile phones in various ways to provide training, education, or teaching materials (Stockley, 2013). E-Learning, as the application of electronic technology to create learning experiences (learning), cannot be seen as discrete. But, in practice, e-learning is a continuum. The three categories are continuum (Noirid, 2007), namely:

1. Adjunct, namely face-to-face (traditional) learning supported by an online delivery system as enrichment. The existence of an online submission system is an addition. For example, to keep learning in class, a teacher/lecturer assigns students/students to search for information from the internet, use computers and LCD projectors and multimedia in the classroom, etc.

2. Mixed/blended; namely placing the online delivery system as an inseparable part of the overall learning process. This means that both the face-to-face process and online learning form a complete unit. Unlike the adjunct model which only puts an online submission system as an addition.

3. Fully Online; that is, all learning interactions and the delivery of learning materials occur entirely online. For example, learning materials in the form of videos are uploaded and received via the internet, or learning is linked via hyperlinks to other sources in text or images.

III. RESEARCH METHODOLOGY

This research is qualitative descriptive research. This study seeks to study problems related to a bold learning system (online) and disparities in the quality of higher education. The data techniques used in this study were observation and document review (Suharsimi, 2006). Some of the components observed were a list of courses, a list of lecturers, a list of available materials, consultation and questions and answers, lecturer discussion rooms, and student discussion rooms. The software development model uses a prototype model. The prototype model is presented in the following figure.
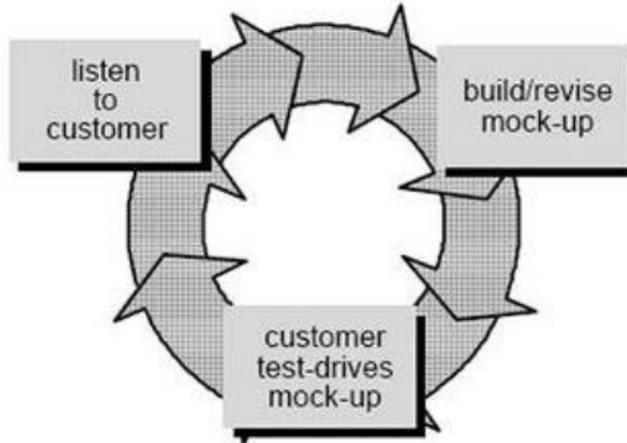

Figure 1. Prototype Model

The stages in system development using this prototype go through several recursive steps:

a. Listening to user input: One of the instruments used in this learning development process was a questionnaire filled in by nearly 85% of UPN "Veteran" Yogyakarta students at the start of the Covid pandemic. Almost all students want the official LMS official platform developed by UPN "Veteran" Yogyakarta.

b. b. Designing and revising the initial appearance: The prototype process allows rapid system development. User input is sufficient to create the initial design of the application.

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c.   c. Testing: The system generated by the prototype concept is far from perfect. Improvements are always made recursively after getting input from users repeatedly.

IV. FINDING AND DISCUSSION

The implementation of LMS development in Spada Wimaya by upgrading to version 3.8 has been successfully carried out and is currently still in the initial trial scheme. The initial appearance of the online learning platform for UPN "Veteran" Yogyakarta can be seen in Figure 2.

Figure 2. The main view of the wimaya Spada

The next menu is the user account login menu. In Moodle version 3.8, there are several access rights such as admin, manager, course creator, teacher, non-editing teacher, student, and guest. Each account has the right to log in. The following is the display after the user logs in as a manager.
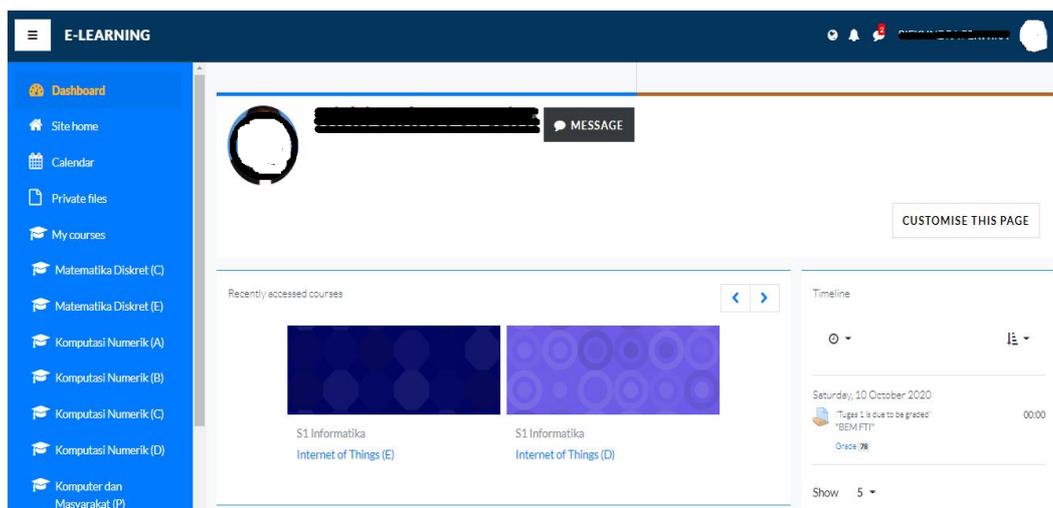

Figure 3. User login menu

The new appearance in Moodle 3.8 gives users a unique atmosphere because it is equipped with a dashboard, course search, and my course. Spada Wimaya has been equipped with various activities.

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These activities include assignments, attendance, bigbluebutton, conference platforms, chat, choice, forums, quizzes, and zoom. The detailed menu of the course also looks more user friendly and attractive. On the course menu, a teacher can display various activities. The following is a detailed view of the course menu.
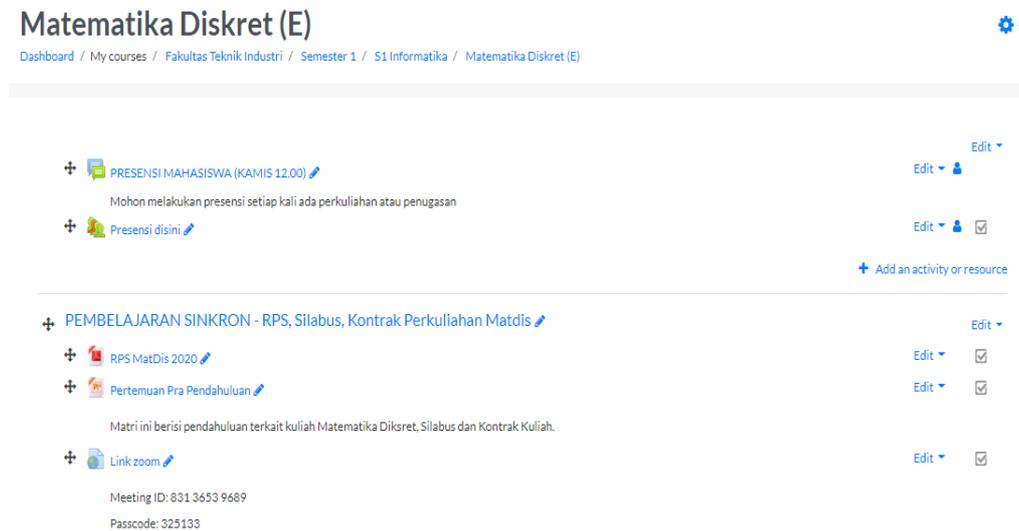

Figure 4. Course Menu

The advantages of LMS spade Wimaya compared to previous versions are the presence and conference platform features such as bigbluebutton, zoom, and google meet which can be embedded using the concept of URL.

V. CONCLUSION AND FURTHER RESEARCH

The conclusion resulting from this study is

1. This research is able to produce the development of online learning based on moodle version 3.8 of Spada Wimaya
2. The Spada Wimaya application has been implemented starting from the odd semester 2020/2021 lectures
3. The results of the test using the User Acceptance Test (UAT) resulted in 85% of users, especially satisfied and Spada students, accepted by the UPN "Veteran" Yogyakarta academic community.

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