



## *Wehousebelda*: Learning Management System as Online Learning Media at Universitas Muhammadiyah Parepare

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### **Abstract**

*The research proposed to be funded with the title Wehousebelda: Learning Management System as an Online Learning Media at Universitas Muhammadiyah Parepare has a long-term goal of finding a Blended Learning Formulation on an online basis using LMS (Learning Management System Wehousebelda UMPAR) which can later be integrated with Virtual and Augmented Reality. To achieve the long-term goals of this research, the initial stage of research this year will focus on the use of Wehousebelda:*

*Students have the perception of being able to learn and use the Wehousebelada LMS easily. Students have the perception that the Wehousebelda LMS is easier to use when compared to other online applications used by lecturers. The features provided on the Wehousebelda LMS are easy for students to understand and use. The Wehousebelda LMS really supports students as a tool in collecting assignments and accessing assignments again anywhere and at any time. Students' perceptions state they have sufficient time to access the Wehousebelda LMS to study and submit assignments.*

*Student perceptions stated that they preferred to continue using the Wehousebelda LMS for studying and submitting assignments in the following semesters. Student perceptions of the Wehousebelda LMS are very positive, in this case, the LMS supports online learning, especially in ICT-based learning media courses.*

**Keywords:***1 or more words or phrases that are important, specific, or representative of this article*

## Introduction

Almost all lines of life are very dependent on the digital world as technology develops so rapidly. Moreover, when the Covid-19 pandemic hit the world at the end of 2019, early 2020 in Indonesia in particular. On the one hand, this disaster is an opportunity for certain sectors, on the other hand, of course, the majority of sectors are a threat. This pandemic disaster means that people's daily activities are forced to use the world of technology as a solution to support the smooth process of achieving every goal.

As is the case in other sectors, the world of education is one that has been greatly affected by the outbreak of the Covid-19 virus because humans are not allowed to interact with each other directly. This means that the world of education is very limited in carrying out the learning process, which previously was mostly done face to face or is now termed offline, which can then be said to be one hundred percent carried out virtually or often termed online.

As is known, education, especially in Indonesia, especially in remote areas, finds that the learning process in the classroom is still far from using technology, not only in terms of network availability but also in terms of the availability of hardware and software as well as knowledge of the use of technology from students and educators. And not only from primary and secondary level education but also to higher education, meaning that even lecturers and students still have limited knowledge in maximizing technology in learning, if it is available at all.

As time goes by, human life has left behind the Covid-19 pandemic, but has begun to move into an endemic era where restrictions are becoming looser, allowing offline learning to be carried out, but online learning is still a relatively new behavior and a habit that cannot be abandoned. Only by education actors in certain circles, it has even become one of the targeted learning process

solutions, which is currently still in the process of searching for a model that can be effective so that online learning becomes a method that can still be carried out in all educational institutions.

### **Learning Management System (LMS)**

Muflikah stated that the Learning Management System (LMS) is software intended for administration, reporting, assignments, recording, and creating teaching materials in online learning using the Internet network. (Rina & Sugiarto, 2022). The general definition of a Learning Management System (LMS) is software designed to create, distribute, and organize the delivery of learning material. (Sevima, 2021).

This LMS system can help teachers or lecturers plan and create syllabi, manage learning materials, manage student lecture activities, manage grades, recapitulate attendance, display transcripts, and discuss and conduct quizzes. (Sevima, 2021).

A Learning Management System (LMS) is software for administration, documentation, activity reports, teaching and learning activities and online activities, e-learning, and training materials which are all carried out online. (Kurniawan et al., 2022).

Moodle is open-source software that supports the implementation of e-learning with various learning support facilities in the form of assignments, quizzes, conversations, and discussions, as well as main facilities that upload various formats of learning materials. (Kurniawan et al., 2022).

For individual students, the Learning Management System (LMS) influences the Distance Learning they undertake with the role provided by the LMS. The roles provided by LMS include (1) planning learning with structured material, (2) not missing out on collecting learning assignments, (3) understanding various points of view with open discussion, (4) comfort with flexibility in place and time for learning, and (5) Save

resources that are usually spent when studying offline(Haydar et al., 2022).

According to the PKPT Team(Irnanadi & Fajeriani Wyrasti, 2021), There are several important indicators needed in student learning activities in the LMS, namely:

1. Login/Logout
2. Joining a Course Class (Self Enrollment)
3. How to Download Materials/Assignments
4. How to Submit Assignments
5. How to Take Quizzes/Tests
6. How to Send a Chat
7. How to Join an Online Meeting.

Figure 1. Stages of Learning Design(Sumantri & et al, 2020)

The stages of designing online learning are at least carried out in the following stages(Sumantri & et al, 2020).

1. Analysis Stage:
  - a. Identify the CPL charged to the course;
  - b. Formulate course learning outcomes (CPMK) that are specific to courses based on the CPL charged to the MK;
  - c. Formulate sub-CPMK which is the final capability planned at each learning stage and formulated based on CPMK;
  - d. Carrying out learning analysis to provide students with an overview of the learning stages they will undergo;
  - e. Carrying out a learning needs analysis to determine the breadth and depth of learning materials and required learning tools;
2. Design Stage:
  - f. Determining sub-CPMK achievement indicators as the final capability planned at each learning stage to fulfill the CPL;
  - g. Establish assessment criteria and develop learning assessment instruments based on sub-CPMK achievement indicators;
3. Development Stage:
  - h. Selecting and developing forms of online learning, learning methods, and student assignments as learning experiences;
  - i. Developing diverse learning materials in the form of appropriate teaching materials and online learning resources;

4. Implementation Stage:
  - j. Organizing courses;
  - k. Holding pre-training and briefing for educational staff who function as support staff;
5. Evaluation Stage:
  - l. Develop and conduct learning evaluations, both formative evaluations and summative evaluations.

### Moodle

Moodle is an abbreviation for Modular Object-Oriented Dynamic Learning Environment, which means a place for dynamic learning using an object-oriented model. In its provision, Moodle provides a complete software package (Moodle+Apache+MySQL +HP). Moodle provides a variety of features that can be customized(Sri Lestari, 2014).

Moodle has various facilities that can be useful in supporting learning activities. The facilities available in Moodle include assignments, chat, forums, quizzes, and surveys. The explanation of each facility according to Amiroh(Rahman Hakim, 2018) is as follows:

- a. Assignment is used to provide assignments to students online. Students can access assignment materials and submit assignments by sending files of their work results.
  - b. Chat is used by teachers and students to interact with each other online by means of text dialogue (online conversation).
  - c. Forums are online discussion forums between teachers and students that discuss topics related to learning material.
  - d. Quiz is used by teachers to conduct online tests.
  - e. Surveys are used to conduct opinion polls.
- The advantages of Moodle compared to other LMS are:(Dirto, 2021):
- a. Moodle is open source, meaning that even though Moodle has a copyright, we can download, use, and modify it.

- b. Moodle is available in many languages, each user can use the language they want. There are 45 languages now available in Moodle.
- c. Moodle can be customized and modified according to the needs of the user.
- d. Moodle has reliable security and is constantly being improved.
- e. Moodle has user management for both grouping and cohort.
- f. Moodle runs on a web browser application so it can be accessed with various operating systems such as Windows, Linux, Unix Netware, MAC Os, and Android.
- g. Moodle has many features that support online learning such as virtual classes, discussion forums, live chat, online quizzes with a variety of multiple choice questions, essays, true and false, automatic grading, and certificate creation.

Moodle-based e-learning as a medium for managing learning has an outstanding category for carrying out learning(Rahman Hakim, 2018).

#### **Cloud Storage**

Cloud Storage is a file storage service on the Internet where files stored there can be managed from anywhere as long as the user is connected to Cloud Storage via the Internet. The Cloud Storage concept is the same as the file server concept in a company office, only the storage media infrastructure is managed by the Cloud provider and its use is used as a file storage service that can be accessed from the internet.(Kholil & Mu'min, 2018).

Mościcki & Mascetti explained how Cloud Storage actually works, it is integrated and transparent in its use, a service that allows end-users to be easily accessed anytime and anywhere using only desktop and mobile devices, then Mutia further gave examples of applications included in Cloud Storage including Dropbox, Google Drive, iCloud(Rina & Sugiarto, 2022).

Cloud Storage itself is a storage medium that requires an internet network to access. Files and data are stored on the computer where

the user must create a Cloud Storage account first. As long as the computer used is connected to the internet, a user no longer needs to use a flash disk or CD for data storage mobility purposes(Kholil & Mu'min, 2018).

Cloud Storage in the Learning Management System in the online learning process can be accepted with high results. Students believe that using an LMS that contains data storage features can be used very easily. Students can also benefit from using Cloud Storage in the LMS to improve lecture performance effectively and efficiently and simplify work.(Rina & Sugiarto, 2022).

#### **3. Learning outcomes**

According to cybernetic theory, learning is information processing. According to this theory, the most important thing is the information system of what students will learn. Meanwhile, how the learning process will take place will be largely determined by this information system. Therefore, this theory assumes that there is no one type of learning method that is ideal for all situations. Because the way of learning is very much determined by the information system. In a more practical form, this theory has been developed, among others, by Landa in the form of an "algorithmic and heuristic" approach. Algorithmic thinking process is a systematic thinking process, step by step, linear, convergent, straight towards a certain target goal(Arnesi & Abdul Hamid, 2015).

Changes in behavior resulting from learning are often referred to as learning outcomes. Arikunto stated that a person's learning outcomes can be in the form of knowledge, skills, and attitudes. Someone who has learned will experience changes in themselves in the form of knowledge, skills, and attitudes(Arnesi & Abdul Hamid, 2015).

#### **Online Learning Media**

The word media comes from the word medium which literally means intermediary or introduction(Arnesi & Abdul Hamid, 2015).

Purnamawati and Eldarni stated "Media is anything that can be used to channel messages from the sender to the recipient so that it can stimulate students' thoughts, feelings, attention and interest in such a way that the learning process occurs"(Arnesi & Abdul Hamid, 2015).

Online learning media can be interpreted as media that is equipped with a controller that can be operated by the user so that the user can control and access what the user needs.(Arnesi & Abdul Hamid, 2015).

Technological developments provide solutions to support the implementation of learning, namely through online learning media. This media makes it easier in the learning process to communicate and transfer information. There are many benefits provided by the ease of online learning provided by various platforms through which face-to-face meetings and virtual discussions can be carried out. Thus, the use of online learning media must always be developed and supported by adequate facilities and infrastructure(Ismail & Alexandro, 2021).

Choosing an Online Learning Platform in the New Normal period uses (1) the WhatsApp application, as seen from the survey results, 46.4% prefer it because the application is easy to access, responds quickly, and saves quota. However, the drawback of this application is that it cannot hold large conferences/meetings (only limited to 8 people); (2) Online learning directly (Live) using Line, this can be seen from the survey that 44.3% chose it, because when learning directly, the signal is stable, the capacity for holding meetings is available for more than 100 people and is free of charge; (3) Selection of online learning media in general. Students in Tourism Science courses at the Faculty of Da'wah and Communication, UIN Walisongo, Semarang prefer to use WhatsApp groups,(Ismail & Alexandro, 2021).

## Method

The type of research applied is qualitative research. This research was conducted by describing the learning outcomes of students who use LMS in the learning process. Apart from that, it will also describe the results of student assessments when using the LMS in the learning process.

The subjects determined in this research were students of the ICT-based Mathematics Learning Media course taught in the Even Semester of the Faculty of Teacher Training and Education, Universitas Muhammadiyah Parepare, Academic Year 2022-2023.

The data sources in this research are those who act as respondents, namely students in Semester 2 of the Mathematics Education Study Program, Faculty of Teacher Training and Education, Universitas Muhammadiyah Parepare, Academic Year 2022-2023, especially those taking the ICT-Based Mathematics Learning Media Course.

The variable in the research is the Wehousebelda Learning Management System (LMS) which also acts as a fixed variable, while the Learning Outcomes and Questionnaire Results in the ICT-Based Mathematics Learning Media Course taught in Semester 2 of the Teacher Training and Education Faculty, Universitas Muhammadiyah Parepare act as independent variables.

For the measurement scale, the research uses an Interval Scale and a Likert scale, then the results of measuring student learning outcomes will be categorized.

In collecting data, this research used tests, documentation, and questionnaire techniques.

The test instruments used in this research were online tests and online questionnaires which were given at the end of the lesson.

In analyzing the data in the research, descriptive statistics were used.

**In analyzing the data in the research, descriptive statistics were used. Results and Discussion (70%)**

After conducting research by providing treatment using the Wehousebelda UMPAR Learning Management System (LMS), and providing online tests and questionnaires, the data obtained was as follows.

Nearly all students got A grades, both those using and not using the Wehousebelda LMS, except for one course, there were 3 students who got B grades. These results illustrate that student learning outcomes are in the very good category.

In point 1 The availability of adequate access to training in using Wehousebelda LMS for the majority of students and 2 lecturers who use Wehousebelda LMS in the learning process makes the learning process easier, namely, 14.3% respectively choosing Very Suitable, 57.1% choosing Suitable. In point 3, students had difficulty using the Wehousebelda LMS in the learning process, 14.3% of students chose very unsuitable, 42.9% not suitable, 28.6% less suitable, and 14.3% very suitable.

Based on points 1, 2, and 3, it can be said that the majority of students have the perception of being able to learn and use the Wehousebelda LMS easily.

In point 4, the Wehousebelda LMS is easier to learn for me to use compared to other online applications used by lecturers, as many as 14.3% chose very suitable, and 71.4% chose suitable. In Item 5 I can use the Wehousebelda LMS easily without any problems, as many as 42.9% chose very suitable and 57.1% chose suitable.

Based on points 4 and 5, it can be said that students have the perception that the Wehousebelda LMS is easier to use compared to other online applications used by lecturers.

In point 6, the features in the Wehousebelda LMS are clear and easy to understand for me to use, as much as possible % chose very suitable and 57.1% chose suitable.

Based on point 6, it can be said that the features provided in Wehousebelda LMS are easy for students to understand and use.

In point 7 the Wehousebelda LMS makes it easier for me to access assignments and study materials anywhere and anytime, as much 42.9% chose very suitable and 57.1% chose suitable. Meanwhile, in item 8 I have difficulty controlling assignments and learning materials through the Wehousebelda LMS and in item 9 the Wehousebelda LMS is difficult to use as a tool in learning, 14.3% of students chose very unsuitable, 42.9% not suitable, 28% less suitable. .6%, Very Compliant 14.3%.

Based on points 7, 8, and 9, it can be said that the Wehousebelda LMS really supports students as a tool in collecting assignments and accessing assignments again anywhere and at any time.

In item 10, the time and energy I use in studying and doing assignments becomes less effective by using the Wehousebelda LMS, as many as 14.3% chose very unsuitable, 71.4% chose not suitable, and 14.3% chose not suitable. Point 11 The time in accessing the Wehousebelda LMS is sufficient so that it makes it easier to collect assignments, item 12 Wehousebelda LMS makes the tasks I do neater and better scheduled, as many as 42.9% chose very suitable and 57.1% chose appropriate.

In points 10, 11, and 12, it can be said that students' perceptions state that they have sufficient time to access the Wehousebelda LMS to study and submit assignments.

In Item 13 I use Wehousebelda LMS to help work on and collect assignments with the features provided, as many as 71.4% chose appropriate and 28.6% chose very suitable. In item 14 I do not use Wehousebelda LMS to collect assignments given by lecturers, students chose very inappropriate 14.3%, not suitable 42.9%, Not suitable 28.6%, and Very suitable 14.3%. As well as point 15 I do not wish to continue using Wehousebelda LMS in the following semesters, students chose very unsuitable 14.3%, not suitable 28.6%, Not suitable 42.9%, Very suitable 14.3%.

Based on points 13, 14, and 15, it can be said that students' perceptions state that they prefer to continue using the Wehousebelda LMS for studying and collecting assignments in the following semesters.

From the analysis of the items in the questionnaire above, it can be concluded that student perceptions of the Wehousebelda LMS are very positive, in this case, the LMS supports online learning, especially in ICT-based learning media courses.

From the description of the learning results above, comparing the previous year's learning results basically gives the same learning results. However, after exploring further through the questionnaire provided, using the Wehousebelda LMS helped students in the learning process. As stated by (Rahman Hakim, 2018), Moodle-based e-learning as a medium for managing learning has an excellent category for carrying out learning.

### Conclusion (5%)

After carrying out the data collection and data analysis process, researchers can draw the following conclusions:

1. Students have the perception of being able to learn and use the Wehousebelada LMS easily.
2. Students have the perception that Wehousebelda LMS is easier to use when compared to other online applications used by lecturers.
3. The features provided in Wehousebelda LMS are easy for students to understand and use. <sup>[3]</sup>
4. The Wehousebelda LMS really supports students as a tool in collecting assignments and accessing assignments again anywhere and at any time. <sup>[4]</sup>
5. Students' perceptions state they have sufficient time to access the Wehousebelda LMS to study and submit assignments.

6. Student perceptions stated that they preferred to continue using the Wehousebelda LMS for studying and submitting assignments in the following semesters.

Student perceptions of the Wehousebelda LMS are very positive, in this case, the LMS supports online learning, especially in ICT-based learning media courses.

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