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## Utilization of E-Learning Based on Learning Management System (LMS) for College Students with Special Needs During Covid-19 Pandemic

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**Abstract:** This study aims to examine the use of E-learning based on LMS for college students with special needs during the Covid-19 pandemic. The method used in this research is a literature study, where the researcher collects relevant data to support the researcher's ideas. Based on the literature review results, the use of E-Learning based on LMS Edmodo, Schoology, and Learnboost has the same effectiveness despite having different levels of ease of use. Meanwhile, the most frequently used E-Learning based on LMS at the university level is Moodle. In its utilization, E-learning based on LMS has five standard features. So that these five features can be used optimally by students with special needs during the Covid-19 pandemic, things that need to be considered are: (1) particular guidelines for the use of E-Learning based on LMS are available for college students with special needs; (2) audio is available that can be used by college students with visual impairments, (3) sign language is available as an interface so that college students can access it with hearing impairments, (4) available text on lecturer materials in the form of video or audio so that it can be accessed by college students with hearing impairments, (5) there is a virtual keyboard feature available in E-Learning based on LMS which allows college students with physical and motor disabilities to use the mouse to type or do other activities on the computer, (6) the features available in E-Learning based on LMS are designed to accept voice input.  
**Keywords:** utilization; e-learning, learning management system, college students with special needs

### INTRODUCTION

On December 31, 2019, a similar case with unknown pneumonia appeared in Wuhan, China (Lee, 2020). The issue was caused by the Coronavirus or known as Covid-19 (Corona Virus Disease-2019). The characteristic of this virus is the high speed of spread.

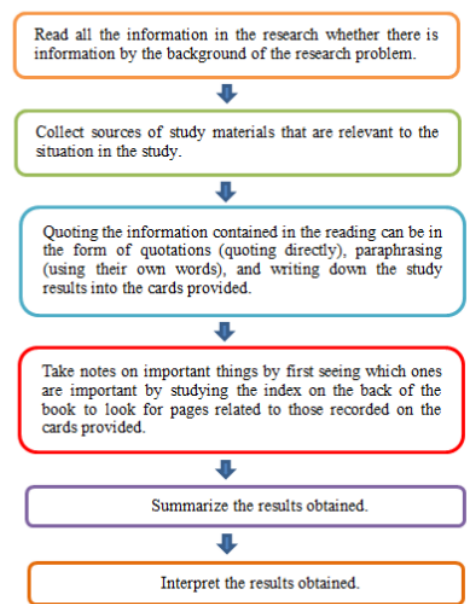
The Coronavirus has been endemic in Indonesia since early March 2020 until now. The impact of the Covid-19 pandemic has changed various aspects of human life. As a result, the Indonesian government has issued various policies to reduce the Coronavirus's spread rate by imposing social distancing, physical distancing to the imposition of PSBB (large-scale social restrictions) in several areas (Herliandry et al., 2020).

Formal educational institutions, including tertiary institutions, must be responsive in responding to this epidemic situation (Hariani & Wastuti, 2020). The implementation of campus sterilization is one of the policies issued by universities to protect the entire academic community from contracting this virus. With campus environment sterilization, all face-to-face teaching and learning activities are abolished and replaced with distance lectures. The Ministry of Education and Culture noted that 94.73 percent of universities in Indonesia conduct distance lectures (Universitas Putra Indonesia, 2020). In addition, the Ministry of Education and Culture also surveyed 237,163 students throughout Indonesia and obtained

data that 68% of students only had cell phones or cellphones for distance lectures during the Covid-19 pandemic. Meanwhile, 14% of students use notebooks, 10% use desktop computers (PCs), and very few use tablets (Ramadhan, 2020).

One media used in distance learning is E-Learning based on the Learning Management System (LMS). Most universities in Indonesia already have a Learning Management System (LMS) used by lecturers and college students in distance learning. Through the Learning Management System, lecturers can manage lecture materials starting from compiling syllabus, uploading materials, giving assignments, accepting and responding to student work, making quizzes or tests, conducting assessments, monitoring college student participation, and interacting with fellow lecturers and college students both in scientific forums as well as online discussions (Lestari, 2013). In its application, E-learning based on the Learning Management System (LMS) is accessed by regular college students and college students with special needs. Based on data published by the Directorate of Learning at the Ministry of Research, Technology, and Higher Education, 401 students with special needs are spread across 152 universities in Indonesia. They are classified into barriers (blind, deaf, quadriplegic, etc.) (Septiana & Effendi, 2019).

College students with special needs require some adjustment through the learning process and environment.



**Figure 1. Steps to Conduct a Study Literature**  
(Source: Arikunto, 2013; Nazir, 2014)

Therefore, they will inevitably face barriers preventing or undermining their full and efficient inclusion and participation in the learning process (Arini, 2019). For lecturers and college students with special needs, learning through the Learning Management System (LMS) is a big challenge that must be faced, especially during the Covid-19 pandemic. Lecturers try to find solutions so that college students with special needs can run effectively through the Learning Management System (LMS). Meanwhile, college students with special needs try to take online lectures with all the limitations they experience. Therefore, there is a need for a more in-depth study related to E-learning using the Learning Management System (LMS) during Covid-19 for college students with special needs.

## METHOD

This research uses a qualitative approach with a literature study method, where the researcher diligently examines the literature needed in research (Nazir, 2014). Therefore, the data source used in this study is a secondary data source. Secondary data, namely data that does not directly provide data to researchers (Sugiyono, 2014). Secondary data in this study comes from references obtained through literature studies, such as reference books, journals, articles, and other sources relevant to the research. The secondary data studied relates to E-learning based on the Learning Management System (LMS) during Covid-19 for college students with special needs.

Then, the focus of the students referred to in this study is children with special needs who are currently studying at the college level or often also called college students. The scope of the study location is limited to the territory of Indonesia. Meanwhile, the E-learning studied in this study is E-learning based on the Learning Management System (LMS), which was implemented during Covid-19. The steps in conducting a literature study are described in the Figure 1.

## FINDINGS AND DISCUSSIONS

### Findings

#### *E-Learning Based on Learning Management System (LMS) for College Students with Special Needs*

E-Learning is an electronic learning process and online media that uses a computer network (Hidayati, 2010). According to Palandi et al. (2017), E-Learning is a learning model using an internet connection with a wide range and can share teaching materials via computers. Meanwhile, according to Hadisi & Muna (2015), E-Learning is defined as a strategy that can connect students or students with their learning resources: databases, experts or lecturers, or physically separated teachers but can be connected using the internet network.

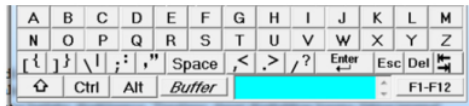
E-Learning is also an internet technology platform in delivering widely accessible learning materials based on three criteria. First, E-Learning is a network to update, distribute, store and share materials remotely. Second, E-Learning focuses on a broad view of learning behind the traditional paradigms. Third, E-Learning sends information to the last user through a computer with an internet network (Hadisi & Muna, 2015).

Concerning the three criteria mentioned above, E-Learning has three functions. First, E-learning functions as an optional supplement. It means that students can choose with the freedom to take advantage of electronic learning materials or not. Second, E-Learning serves as a compliment. It happens when the electronic learning materials are programmed following the learning materials students receive in the classroom. Third, E-Learning serves as a substitute when the university makes E-Learning one of the choices of learning models whose goal is to make students more flexible in carrying out lectures (Siahaan in Hadisi and Muna, 2015).

In addition to E-Learning having several functions, the use of E-learning can also provide benefits as described by Hartanto (2016), including (1) an increase in student interactions with each other and with lecturers, (2) the availability of unlimited learning resources, (3) E-learning that is developed appropriately can improve the quality of graduates and the quality of higher education,



**Figure 2. i-CHAT Display, (Source: Hernawati, 2011)**



**Figure 3. Display Virtual Keyboard Tampilan (Source: Hernawati, 2011)**

(4) the formation of a learning community that interacts with each other, gives and receives and is not limited to one location, (5) improve the quality of lecturers because it is possible to dig up information more broadly and even unlimitedly.

Simply put, E-Learning is a form of distance learning. Distance learning is given to students who do not gather together to receive learning from the teacher (Prawiyogi et al., 2020). Distance learning is implemented through online media such as computers, mobile phones, Google Meet, Zoom, Google Classroom, and others. In connection with the current Covid-19 pandemic, distance learning through E-Learning must be optimized to fulfill the education rights of the nation's children, including college students with special needs.

The E-Learning that students can use with special needs in implementing distance learning, among others:

*Speak Dictionary*

The speak dictionary is proven to be effective for the blind because by using the dictionary, the limitations of the blind can be overcome. A speak dictionary is a dictionary that contains learning materials, including daily test questions, mid-semester test questions, audio-based end-of-semester test questions, so without having to rely on the sense of sight, the blind can master the learning materials delivered by the teacher by listening (Koyimah et al., 2020).

*i-CHAT application*

i-CHAT application is one of the E-Learning applications that deaf students can use. This application has two modes, namely offline mode, and online mode. The i-CHAT program is divided into five main modules: the finger alphabet signal module, dictionary module, thematic module, number signal module, and sentence structure module, namely the finger alphabet

signal module, dictionary module, thematic module, number signal module, and sentence structure module. This application is very suitable for helping the learning of deaf students in conventional and distance classes (Hernawati, 2011). Figure 2 is a visualization of the i-CHAT application display.

*Virtual Keyboard Software*

A Virtual keyboard is a form of software that students can use with physical and motor disabilities and allows students to only use the mouse for typing or other activities on the computer. In addition, this software makes it possible to type letters without pressing keys on the keyboard. Figure 3 is a visualization of the Virtual Keyboard display.

Learning Management System (LMS) is one of the online media widely used in the world of education. If defined, a Learning Management System (LMS) is a system that can accommodate features in various formats such as sound, images, and text; this means that the Learning Management System (LMS) can provide benefits to teachers and students in carrying out the online teaching and learning process which is usually carried out in conventional activities, such as opening classes, uploading and downloading learning materials, collecting assignments and communicating (Palandi et al., 2017). Meanwhile, Setiyo W (2013) explains that the Learning Management System (LMS) is a solution to the learning process designed by the teacher for the delivery, reporting, tracking, and management of learning materials made by the teacher and monitoring the progress of students.

In other words, a Learning Management System (LMS) has structured and interactive content. It is illustrated in the five general functions of the Learning Management System (LMS) as described by Setiyo W (2013) as follows:

*Uploading and sharing material*, The Learning Management System (LMS) has service features that are useful for simplifying publishing learning materials. For example, instructors will upload teaching materials according to their syllabi, such as articles, quizzes, assessment of material notes, and others.

*Forum and chat*, This online forum and chat is a place for two-way communication between lecturers and students. In addition, this facility allows students to write their responses and discuss them with other college students.

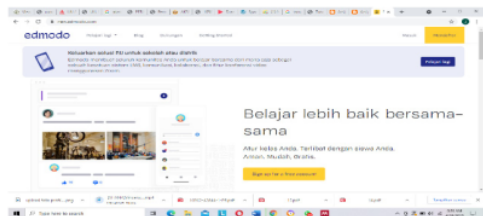
*Quizzes and surveys*, Online quizzes and surveys can provide instant grades for college students. In this facility, college students can directly respond to what they get and understand from the material.

*Gathering and reviewing assignment*, The results of student evaluations in learning are in grades or scores that are directly obtained online for students.





**Figure 4. Initial View of Moodle, (Source: <https://moodle.com/>)**



**Figure 5. Initial Appearance of Edmodo (Source: <https://new.edmodo.com/>)**

*Recording grades*, The Learning Management System (LMS) has a recording grades feature used to automatically monitor grade data from students.

The five general functions of the Learning Management System (LMS) mentioned above show that the Learning Management System (LMS) has advanced features. If optimized, its use will be very useful in supporting distance learning during the current Covid-19 pandemic. According to Anggriawan (2009), *E-Learning based on Learning Management System (LMS)* that can be utilized in the learning process include:

#### *Moodle*

Moodle is an E-Learning based Learning Management System (LMS) that is free and can be downloaded, used, and modified by anyone with a GNU (General Public License) license. Moodle stands for Modular Object-Oriented Dynamic Learning Environment, which can be used as an application in the distance learning process because this application can convert learning media into the web form, and also allows students to enter virtual classrooms that can access learning materials, answer the quiz that has been made by the teacher (Rizal & Walidain, 2019).

The advantages of using Moodle, according to Didik et al. (2020) as follows : (1) It can be used as a reference for learning media when this covid-19 is in the learning process even though online; (2) practical use with exclusive features can send files in text, video, sound, graphics or images, narration, and interaction between teachers and students; (3) monitoring assignments and student learning assessments are also accessible.

Disadvantages of using Moodle here, according to Didik et al. (2020) as follows: (1) When the slow network affects the use of students in using Moodle mood, (2) in the choice of language, some cannot be changed, (3) not always supported on the web browser. Figure 4 is a visualization of the initial appearance of Moodle.

#### *Edmodo*

Edmodo is a web platform that teachers and students can use in conducting safe distance learning in sharing learning material information in writing, documents, audio, video, links that can be shared by teachers and students and there is also supporting content. However, grades, activity events, quizzes, assignments, and polls can only be shared by teachers (Nurdani, 2016).

The advantages of Edmodo, according to Nurdani (2016) as follows: (1) User Interface, adapted from a view like Facebook, simply Edmodo is said to be simple that can be used for beginners, (2) Compatibility, Edmodo here supports Preview of various types of file formats such as ppt, pdf, HTML, SWF, and others, (3) The Edmodo application can not only be accessed by a laptop or computer but can be used by mobile phones.

The disadvantages of Edmodo are as follows: (1) students have limited access to exit because they are only limited in that class, (2) sometimes interference with an internet connection can affect the website so that it runs slower. Figure 5 is a visualization of the initial appearance of Edmodo.

#### *Schoology*

Schoology is one of the E-Learning based Learning Management System (LMS) which provides facilities for teachers and students to interact remotely, exchange information remotely and through this Schoology students can download learning materials, presentation slides, video tutorials, games, taking quizzes, exams, discussions, and collecting assignments that have been given by the teacher (Murni, 2016).

The advantages of Schoology according to Haryanto (2018) as follows: (1) cheap and easy to get, (2) efficient and fast updates, (3) fun, (4) full features, (5) can discuss, send files, videos, images, and others, (6 ) can submit anywhere, (7) control tasks easily. Meanwhile, the weakness of Schoology, according to Haryanto (2018) as follows: (1) Android phones cannot, (2) waste quota, (3) depend on the Internet, (4) plagiarism can occur.

#### *Learnboos*

Learnboos is an application using the internet that can be used by teachers in managing classes by offering grade books, lesson plans, attendance and also being

an online medium in the implementation of distance learning today because, with this application, teachers can convey learning content, conduct questions and answers, discussions, provide guidance, assignments, and exams at the same time and place of the exam (Brito, 2003).

Based on the literature that has been described above, it is known that the awareness of the world community, especially the Indonesian people, towards technology is getting higher. More and more technological innovations are created by scientists for easy access in all areas of life, including education. It is hoped that with the development of technology, the mission of equal distribution of education can be achieved one day.

The current education system that leads to an inclusive education system opens opportunities for children with special needs to continue their education to college. In the past, lectures were entirely carried out conventionally, namely by face-to-face. Regular students and students with special needs must be present on campus according to the lecture schedule. Face-to-face conventional lectures running cannot be entirely effective for regular college students and college students with special needs. Misunderstandings in capturing the material explained by the lecturer still often occur.

Along with the development of the times, the human mindset towards education is getting more advanced. Hence, the research to create more flexible and innovative learning patterns until various facilities are created that support the implementation of distance learning. Even so, distance learning cannot be said to be more effective than conventional lectures. The reason is that both lecture patterns have their respective advantages and disadvantages.

Before the Covid-19 pandemic hit the world, distance learning was often carried out partially or often called blended learning. Lecturers and students combine the implementation of distance and face-to-face learning on a scheduled basis. However, after the Covid-19 outbreak hit the world, distance learning was carried out in full so that an online platform or media was needed that could be used by lecturers and students effectively. One of the dominant online media used in online lectures today is E-Learning based on the Learning Management System (LMS), whose content imitates conventional education.

E-Learning based on the Learning Management System (LMS), Edmodo, Schoology, and Learnboost have the same effect despite having different levels of ease of use (Sudiana, 2020). Meanwhile, E-Learning based on Learning Management System (LMS), which students and lecturers most often used in universities, is Moodle. Moodle is the most widely used learning management system globally and supports more than 150 million students (Batari, 2021). The results of Oktaviani, Sholikhakh also support it, & Lestiana

(2018) research shows that students' perceptions of the practicality of the Moodle Learning Management System (LMS) based on behaviorism theory have a good percentage, including the following: (1) 76,6 % students think that the language used in the Moodle Learning Management System (LMS) content is following the college student's mindset, (2) 73,8 % argue that the display used is attractive and following the material, (3) 64,2% agree that all the material provided in the Moodle Learning Management System (LMS) content is structured, (4) 65,1% of the opinion agree that Moodle's Learning Management System (LMS) provides feedback on assignments from lecturers, (5) 63,2 % agree that students can learn independently through the material that has been uploaded in the Moodle Learning Management System (LMS).

Lectures using E-Learning based on the Learning Management System (LMS) are a tangible form of developing the mindset of the world community in viewing the education system. In simple terms, learning can be done anywhere and anytime. Based on this thought, various online media based on Learning Management System (LMS) have emerged with sophisticated and attractive features. Educators are required to be selective in choosing online media based on the Learning Management System (LMS) that suits the needs of students. In addition, educators are also required to utilize E-Learning based on the Learning Management System (LMS) optimally. The trick is that educators are asked to modify the E-Learning content based on the Learning Management System (LMS) according to each student's obstacles, potentials, and needs, including college students with special needs. For modifying the E-Learning content based on the Learning Management System (LMS) to be realized, it requires in-depth knowledge of educators about the condition of students and the mastery of educators in using E-Learning based on the Learning Management System (LMS).

**Advantages and Disadvantages of E-Learning Based on Learning Management System (LMS) for College Students with Special Needs**

The use of E-Learning based on the Learning Management System (LMS) at the university level has several advantages as stated by Hadisi & Muna (2015) as follows:

*Flexible Time*, The first advantage of E-Learning based on Learning Management System (LMS) is that students can adjust their study time as desired as long as the computer or mobile device is connected to the internet network.

*Flexible Place*, The second advantage of E-Learning based on Learning Management System (LMS) is that students can access learning materials from teachers or lecturers anywhere. Again, the computer or mobile phone is connected to the internet network, which is the main source of E-Learning learning implementation.



Gambar 1. Siklus Benefit of e-Learning

### Figure 6. Benefit Cycle of E-learning

(Source: Hadisi & Muna, 2015)

**Cost**, The third advantage of E-Learning based on a Learning Management System (LMS) is spending on training costs. For example, incorporate or educational organizations can save costs from spending funds for classroom equipment such as whiteboards, projectors, and stationery.

**Teaching Effectiveness**, The fourth advantage of E-Learning based on Learning Management System (LMS) is that it is included in the new technology category, so it looks attractive to students until they want to try it. In addition, E-Learning based on Learning Management System (LMS) can also be designed with the latest Instructional design so that students can more easily understand the content of learning materials.

**The Flexibility of Learning Speed**, The fifth advantage of E-Learning based on the Learning Management System (LMS) is that the speed flexibility is adjusted to the internet network speed of each student.

**On-demand Availability**, E-Learning based on the Learning Management System (LMS) can be accessed at any time from wherever we are; the main requirement is an internet network, so it can be considered a "pocketbook" that can assist in completing tasks or work at any time. Figure 6 is a visualization of the Benefit Cycle of E-learning.

E-Learning based on Learning Management System (LMS) has advantages and disadvantages, including the following. The learning process tends towards training instead of education.

Lack of computer mastery, students tend not to have high learning motivation. There is a change in teachers who initially mastered conventional learning techniques but are now required to master ICT (Information and Communication Technology) techniques. Lack of interaction between lecturers and students and even between college students themselves.

There is a tendency to ignore academic and social aspects but prioritize aspects of doing business.

In general, the advantage of E-Learning based on Learning Management System (LMS) for students

with special needs is that learning can run more flexibly. Students with special needs do not have to go to campus to attend lectures. For example: For students with physical and motor disabilities, lectures that can be carried out at home are easy to access learning. The mobility barriers experienced by students with physical and motoric barriers can be minimized. They do not need to travel from home to campus, classroom to cafeteria, or library. In addition, students with special needs can study at any time according to their readiness to learn. For example: When the emotional condition of students with the autistic spectrum is unstable so that they cannot attend lectures according to the schedule, they do not have to worry about being left behind in lecture materials. The reason is that they can watch the lecturer's explanation video and work on the questions that have been provided by the lecturer in E-Learning Based on the Learning Management System (LMS) at any time. Likewise, students with intellectual disabilities can e-learn lecture material that is still not understood in E-Learning based on the Learning Management System (LMS) at any time.

Another advantage of E-Learning based on Learning Management System (LMS) for students with special needs is that the visual appearance of lecture materials becomes more attractive and concrete. For example: For students with hearing impairment who predominantly absorb information through the sense of sight, an attractive and concrete visual appearance of lecture material can increase their learning motivation and make it easier for them to catch the lecturer's explanation. In addition, E-Learning based on Learning Management System (LMS) has featured in various formats such as sound, image, and text. It allows lecturers to present lecture material in the form of sound so that students with visual impairments can access the lecturer's explanations through their most dominant senses, namely: the sense of hearing.

The advantage and the disadvantages of E-Learning based on Learning Management System (LMS) for students with special needs are that it must be connected to the internet network in its use. It is an advantage because students can easily and quickly access any information related to lectures with special needs in areas with a stable internet network. Meanwhile, it is said to be lacking because not all students with special needs are in areas that have a stable internet network, such as rural areas. Therefore, the solution is for parents of students with special needs to install a signal amplifier in their home or find a higher learning place to obtain a more stable internet network during online lectures.

In terms of costs, the advantages of conducting lectures through E-Learning based on the Learning Management System (LMS) can save costs from spending on classroom equipment such as whiteboards, projectors, and stationery. However, the drawback is that the costs incurred for the internet quota are not



small. Online lectures can take up to 1 GB of quota within one hour, but the amount still depends on the platform used. The UI Postgraduate Student Alliance interviewed several students about the costs used for online lectures during the pandemic. Based on the interviews, the average internet quota cost spent on online lectures for a month is around IDR 200,000 to IDR 600,000, the average is at IDR 200,000 to IDR 400,000. Then, there are also cases where students have to improve the quality of the wi-fi. For example, although initially, the student used Indihome with an internet package of IDR 480,000, because the lectures were conducted online, they switched to using an internet package with a higher quality of IDR 550,000 per month (Ramadhan, 2020).

The follow-up from the Ministry of Education and Culture, seeing the situation, is to distribute free internet quota assistance for lecturers and students of 50 GB per month, consisting of 5 GB of general quota and 45 GB of study quota. A standard quota is used to access all pages and applications. Meanwhile, the study quota is used to access learning pages and applications (Perdana, 2020).

Implementing lectures through E-Learning based on the Learning Management System (LMS) creates a boundary between lecturers and students to interact directly. It is an advantage and a disadvantage of E-Learning based on Learning Management System (LMS) for college students with special needs. The drawback is that to interact with lecturers and other students, students with special needs must stare at the cellphone or laptop screen for hours. It makes students with special needs bored and can reduce their learning motivation. In addition, online communication is not as effective as face-to-face. Moreover, if the internet network is unstable, students with special needs find it difficult to access complete lecture information quickly. While the advantages, during the current Covid-19 pandemic, restrictions on direct interaction can prevent the spread of the virus in the campus area.

Another thing that needs attention, mastery of technology such as mobile phones or computers, is necessary for carrying out lectures through E-Learning based on Learning Management System (LMS). However, for elderly lecturers who are technologically savvy, these prerequisite skills are pretty challenging to master and require more extended adaptation. Likewise, students with special needs need assistance from parents and volunteers and a longer adaptation process in using the technology, especially for students who experience intellectual disabilities.

However, suppose the implementation of E-Learning based on Learning Management System (LMS) is more focused on the technological aspect than the educational aspect. In that case, there is a tendency to pay more attention to technical aspects of business/commercial aspects and ignore educational aspects

to change academic abilities, behavior, attitudes, social skills, or skills of students with special needs. In addition to the shortcomings, the learning process tends towards training that emphasizes the knowledge or psychomotor aspects and pays less attention to the affective aspects of students with special needs. In other words, character education is challenging to instill through online lectures.

## Discussions

### *Impact of E-Learning Based on Learning Management System (LMS) for Students with Special Needs*

Implementing online lectures through E-Learning based on the Learning Management System (LMS) has positive and negative impacts on lecturers and college students with special needs. A more detailed explanation is described below.

*For Lecturers*, The positive impact of E-Learning based on Learning Management System (LMS) for lecturers, namely: encouraging lecturers to be more creative and technology literate. For example: To explain lecture material, lecturers can record themselves in the form of videos, then upload them on YouTube. In addition, lecturers can maximize the use of other online media, such as: google classroom, WhatsApp group, and video conferencing applications, namely: zoom, skype, hangout, Webex, and others (Wahyudi, 2020).

Meanwhile, the negative impact of E-Learning based on Learning Management System (LMS) is that lecturer lecture materials are prone to copy-paste. Then, there is also a decrease in the humanity lecturer's sense towards his students' condition, such as empathy and concern (Wahyudi, 2020), due to the lack of closeness between lecturers and students.

*For College Students with Special Needs*, The positive impact of E-Learning based on the Learning Management System (LMS) for college students with special needs is that they become more independent in using the features found on the online platform. It is because volunteer assistance is only carried out online via WhatsApp chat or video calls. Meanwhile, parents are not always at home to assist.

Meanwhile, the perceived negative impact, the large variety of features in E-Learning based on the Learning Management System (LMS) causes students with special needs to require a longer adaptation time to master how to use each of these features.

In addition, the quality of communication between lecturers and students with special needs, which is not as effective as face-to-face lectures, causes students with special needs who are hampered in language and communication to misunderstand often the meaning of the explanation of the material from the lecturer. Therefore, they need more time to understand the material presented by the lecturer.



### Implementation of E-Learning Based on Learning Management System (LMS) for College Students with Special Needs

In the implementation of online learning for children with special needs can apply the 5M strategy, namely: (1) humanizing relationships, (2) understanding concepts, (3) building sustainability by providing stimulation, (4) choosing challenges with teachers providing a variety of exciting learning activities, (5) empowering contexts involving resources at home as learning resources (Hamidaturrohmah in Terayanti, 2020).

The steps in carrying out online learning for children with special needs are making a learning plan for children with special needs. First, the planning is the same, but the activities are replaced with media and tools used by parents. Second, carry out activities with the 5M strategy. Third, carry out reflection with the parents of students. Fourth, this visit (Home Visit) is a support service for children with special needs (Terayanti, 2020). In practice, the level of ability of children with special needs to participate in the online learning process varies. It also affects the online learning applications used.

For children with special needs who are studying at the tertiary level, or often also called students with special needs, online learning is often carried out through E-Learning based on the university's Learning Management System (LMS). However, facts that occur in the field, E-Learning based on the existing Learning Management System (LMS) has not been modified according to the diversity of students with special needs. It is because in making the Learning Management System (LMS) only considers Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Intention to Use (ITU), Actual Usage Behavior (AUB) for regular students and does not include students with special needs.

These four factors significantly affect using the Learning Management System (LMS) effectively and efficiently in supporting the learning process. The ease of use of the Learning Management System (PU) and the usefulness of the Learning Management System (PEOU) have a positive impact on student's attitudes towards the use of the Learning Management System (ITU). After students have a positive attitude towards learning by using the Learning Management System (LMS), it ultimately affects student behavior in using the Learning Management System (LMS), which in the end, students can actualize E-learning based on the Learning Management System (AUB). It means that the more accessible the Learning Management System (LMS) is used, the more the benefits of the Learning Management System (LMS) will increase, and it will also have an impact on the desire to use the Learning Management System (LMS) (Munir, 2010).

E-Learning based on the Learning Management System (LMS) has several standard features that are important and must exist, including: (1) Uploading and Sharing Materials; (2) Forums and Chats; (3) Quizzes and Surveys; (4) Gathering and Reviewing Assignment; (5) Recording Grades (Andayani & Larasati, 2019). To make students with special needs easier to use the E-Learning service provider based on the Learning Management System (LMS) is expected to update these features by adjusting the obstacles, potentials, and needs of students with special needs. In addition, it also needs to be supported by the following: (1) the provision of special guidelines for the use of E-Learning based on the Learning Management System (LMS) for students with special needs, (2) the provision of audio for each of the existing features for easy access to E-learning content. Learning based on Learning Management System (LMS) for students with visual impairments, (3) providing sign language as an interface to E-Learning based on Learning Management System (LMS), either demonstrated in the video (information over video) or only symbols in the form of expression pictures that function as sign language, (4) providing lecture material in the form of audio or video included with text for easy access to E-Learning content based on Learning Management System (LMS) for students with hearing impairments, (5) providing features virtual keyboard on E-Learning based on Learning Management System (LMS) which enables enable students with physical and motoric barriers to using the mouse to type or perform other activities on the computer, (6) the features available in E-Learning based on the Learning Management System (LMS) are designed to accept input in the form of voice.

Lestari (2013), in whose research entitled "Development of E-Learning Based on Learning Management System in Learning Media Courses," obtained the results that the experience of regular students in using internet technology was 17% with a very good category, the ease of regular students in using internet access was found to be only 15% and in the good category. The habit of regular students using the help of internet technology devices is 30%, which means that they are in the very good category. Then, in terms of feasibility and convenience, the use of E-Learning based on Learning Management System (LMS) is 36% of the aggregate value of 75% and is included in the category that is already feasible to use. Therefore, it can be concluded that the use of E-Learning based on the Learning Management System (LMS) is one of the best solutions in the field of education at the university level during the Covid-19 pandemic. However, because there is no E-Learning based on Learning Management System (LMS) which has been specially modified for students with special needs, education practitioners for children with special

needs, and E-Learning service providers based on Learning Management System (LMS) need to sit down together to equate concepts.

## CONCLUSIONS

Utilization of E-Learning based on the Learning Management System (LMS) Edmodo, Schoology, and Learnboost has the same effectiveness despite having different extra ease of use (Sudiana, 2020). E-Learning based on the Learning Management System (LMS) is widely used as an online learning medium at the university level. The most frequently used E-Learning based on the Learning Management System (LMS) at the university level is Moodle.

For college students with special needs, the main advantage of online lectures through E-Learning based on the Learning Management System (LMS) is that learning becomes more flexible. Meanwhile, the drawback is that education becomes less meaningful because it emphasizes the knowledge or psychomotor aspects and pays less attention to affective elements.

Online lectures through E-Learning based on the Learning Management System (LMS) positively and negatively impact college students with special needs. The positive impact that is most felt is that college students with special needs become more independent during the implementation of online lectures. In contrast, the most supposed negative effect is that the quality of communication between lecturers and students with special needs is not as effective as face-to-face lectures. It causes students with special needs who are hampered in language and communication often misunderstand the meaning of explaining the material from the lecturer.

E-Learning based on Learning Management System (LMS) should be modified concerning the students' obstacles, potentials, and needs with special needs so that more accessible to students with special needs. In accommodating E-Learning services based on the Learning Management System (LMS) for students with special needs, it is necessary to pay attention to the following:

There are particular guidelines for using E-Learning based on Learning Management System (LMS) for students with special needs to be studied before using E-Learning based on Learning Management System (LMS).

Audio is available on E-learning based on the Learning Management System (LMS) that students can use with visual impairments.

There is sign language as an interface in E-Learning based on Learning Management System (LMS), either demonstrated in the video (information over video) or only symbols in the form of expression images that function as sign language.

There is text on the lecturer material in video or audio in E-learning based on the Learning Management System (LMS) to access it with hearing-impaired students.

A virtual keyboard feature is available in E-Learning based on the Learning Management System (LMS), allowing students with physical and motor impairments to use the mouse to type or perform other activities on the computer.

The features available in E-Learning based on the Learning Management System (LMS) are designed to accept voice input.

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