

Improving Online Learning Effectiveness by Utilizing Learning Management System (LMS) to Support the Quality of Company Human Resources Improvements

Dakikotis Sururiyah¹, Gancar Candra Premananto²

^{1,2}Master of Management, Faculty of Economics and Business, Universitas Airlangga, Indonesia
dakikotis.sururiyah-2021@feb.unair.ac.id, gancar-c-p@feb.unair.ac.id

Abstract

This article aims to describe efforts to increase the effectiveness of the use of the Learning Management System (LMS) in improving learning outcomes and improving the quality of Human Resources (HR). The writing of this article uses the literature study method, namely reviewing and researching various literatures related to the topic of the problem being studied. The required data was collected through a contextual study which was then analyzed for its contents. The use of LMS in learning makes it easier for education and training management institutions to improve the learning process, learning can be accessed from various places and unlimited times, and learning can be carried out more simply. The use of LMS also makes learning more flexible in terms of study time and makes students more independent. Instructors can also monitor student activities through the LMS in detail.

Keywords

Learning; e-learning; Learning Management System; effectivity



I. Introduction

Technological developments have many positive impacts, one of which is supporting efforts to improve the quality of Human Resources (HR) through the development and use of digitalization. Optimizing the use of digitalization is increasingly felt and seems to be accelerated by the Covid-19 Pandemic that has taken place since the beginning of 2020 in Indonesia. To reduce the rate of spread of the Covid-19 virus, the government issued a policy related to large-scale social restrictions through PP No. 21 of 2020 concerning Large-Scale Social Restrictions in the Context of Accelerating the Handling of Corona Virus Disease 19 (COVID-19). The existence of these government regulations is the basis for the implementation of online or distance learning in human resource training and development programs. The learning system that was previously carried out face-to-face directly, with the current pandemic must be done remotely (online) or by using an online system. Learning using an online system is a new transformation in educational technology that is used to plan a more directed and interactive learning system (Pratomo et al, 2021). The outbreak of this virus has an impact of a nation and Globally (Ningrum et al, 2020). The presence of Covid-19 as a pandemic certainly has an economic, social and psychological impact on society (Saleh and Mujahiddin, 2020). Covid 19 pandemic caused all efforts not to be as maximal as expected (Sihombing and Nasib, 2020).

This online learning system is a learning system that is carried out using the internet and presents it in various types of learning correlations (Pratomo et al, 2021). This online learning system utilizes technology, namely by using devices on computers or gadgets to be connected to each other, to create a learning process. teaching and learning becomes more effective. Learning Management System (LMS) is one of the popular learning

methods because it is an adaptation change from face-to-face learning to online or distance learning which can be accessed more easily and managed as needed.

The online learning system has many benefits for companies, including in terms of time and cost efficiency as well as ease of access and flexibility. However, the effectiveness of online training so far is doubtful as good as face-to-face training. This is as research from Munajatisari (2014), which shows the results that the effectiveness of e-learning training is lower than classical/face-to-face training. Based on the background and problems above, the formulation of the problem in this study is how to increase the effectiveness of online learning by utilizing LMS to support efforts to improve the quality of human resources.

II. Review of Literature

2.1 Learn and Learning

1) Learn definition

Psychologically learning is a process of changing behavior as a result of interaction with the environment in meeting the needs of life (Slameto, 2010). According to James O. Wittaker in Soemantoo (2003), learning is a process in which behavior is generated or changed through practice or experience. Another definition is mentioned by Gagne in Mudjino et al (2006), which states that learning is a complex activity. Learning outcomes are in the form of capabilities. The emergence of these capabilities is from stimulation that comes from the environment and cognitive processes carried out by the learner.

Based on several definitions of learning from the experts above, it can be concluded that learning is a change in behavior that is obtained through practice and experience through cognitive processes carried out by individual learners.

2) Learning definition

The term learning in the treasures of education is often referred to as teaching or the teaching and learning process. In English it is also called teaching/teaching and learning (Zainal, 2010). Meanwhile, according to Made (2010) learning means an effort to teach students. Benjamin S. Bloom et al propose that learning objectives are grouped into three domains, namely cognitive, affective and psychomotor (Zulfiani, et al 2009). Cognitive domains are matters concerning the power of thought, knowledge and reasoning. The affective domain is related to feelings, while the psychomotor domain is related to physical or motor skills

Thus, learning can be concluded as a process of interaction between instructors and students which contains activities that aim to make the learning process or behavior change in students happen.

2.2 E-learning

E-learning consists of the letter "e" which is an abbreviation of electronics and learning which means learning. Thus e-learning can be interpreted as learning that utilizes the help of electronic tools, especially computers. According to Mulyani (2013) the focus of e-learning is not on electronics because electronics are only a medium, but focuses on the learning process. E-learning according to Rusman (2012) is all learning activities that use the help of electronic technology. The understanding of students who test e-learning does not depend on the instructor but is obtained from electronic media. The technologies that are often used are the internet, intranets, video or audio tapes,

broadcasting via satellite, interactive television and CD rooms. Based on the definition of e-learning above, e-learning can be translated as learning that utilizes learning media in the form of electronic devices as a means of instructors in delivering material to learning participants. The e-learning process occurs when learning participants access learning materials via computers or other electronic devices.

2.3 Learning Management System (LMS)

According to Sulistyorini et al (2020) Learning Management System (LMS) is a learning platform that can accommodate online learning. LMS is a term for an online system that is applied to manage online classes for example to provide materials and evaluations, check the progress achieved by learning participants in studying material and taking tests, interacting between instructors and learning participants and various other learning activities integrated into the system (Putra et al, 2020)

2.4 Learning Effectiveness

Kirkpatrick in Strother (2002) presents four levels of evaluation of learning programs, namely:

- 1) Level 1 – Reaction, measuring how participants respond to the learning that is followed. Things that are evaluated at this level include learning materials, trainers, facilities provided, implementation time, and methods used. This level evaluation is useful for providing feedback for managerial, learning organizers, and trainers to improve the implementation of the next learning.
- 2) Level 2 – Learning, measuring the extent to which learning participants absorb and understand the material presented by the instructor which is usually presented in the form of pre-test and post- test.



Figure 1. Kirkpatrick's Four Levels of Training Evaluation

- 3) Level 3 – Behaviour, ymeasure whether there is a change in behavior after the participants have completed the lesson. Hall & LeCavalier in Strother (2002) stated that level 3 evaluation can be done by measuring the job performance of learning participants by direct supervisors. Evaluation at this level is not enough just to measure changes that occur in the behavior of ex-participants, but furthermore it is necessary to evaluate the extent to which these changes can be applied in their daily

Work practices.

- 4) Level 4 – Result, Evaluation at this stage measures how much impact the implementation of learning has on job performance or the expected final results. This level evaluation is the most important and also the most difficult evaluation to do because it measures the extent to which the learning carried out has an impact/result on improving the performance of ex-participants, work units, and the organization as a whole.

Philip in Strother (2002) adds another level of training evaluation, namely calculating ROI (Return if Investment) by converting the results of the level 4 evaluation in the form of productivity and performance improvement into value for money.

Technology Acceptance Model (TAM), which was adapted from Theory of Reasoned Action (TRA) developed by Ajzen & Fishbein in 1975, which is a theory of reasoned action with one premise that a person's reaction and perception of a problem will determine people's attitudes and behavior (Munir, 2010). The TAM model places the attitude factor of each user's behavior with two variables, namely usefulness and ease of use which will explain user behavior.

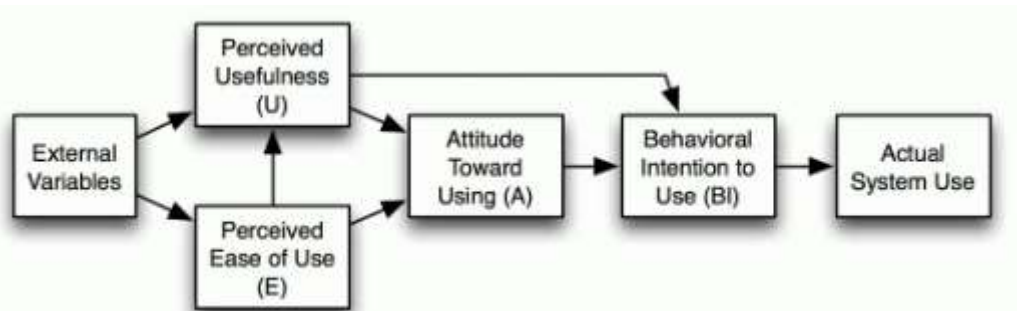


Figure 2. Technology Acceptance Model

III. Research Method

This research was conducted by looking for references from literature articles and research journals as well as sources of information on the internet related to the problems discussed (in this case related to the effectiveness of using LMS for online learning) for later analysis. The main purpose of searching literature through articles, journals and the internet is to obtain relevant information and find out how far the information is related to one another. The stages are as follows :

- 1) Gather information sources, both from books, the internet, pre-existing papers, own experiences, and other materials related to this topic
- 2) Read the sources that have been obtained
- 3) Identify whether the information read is relevant to the topic to be discussed
- 4) Summarizing the key points of each relevant literature
- 5) Write and rearrange the important points that have been obtained in a structured manner into an article/paper.

IV. Result and Discussion

Development is an educational process that is prepared for a long time using an ordered and patterned method, where managerial members will review a conceptual and theoretical understanding as a general goal. In a company/organization, HR development is a requirement in obtaining skilled/professional and painstaking workers in becoming ready employees in the future (Rohmah, 2018).

According to Mustofa (2021) the benefits of HR development, namely:

- 1) Increased work production power of organizations/agencies as a whole.
- 2) Improved the process of making decisions quickly and accurately.
- 3) Increased enthusiasm for work in organizations/agencies.
- 4) Facilitate positive communication.
- 5) Can solve conflicts/problems practically.
- 6) Can help employees to make good decisions.
- 7) Can improve the ability of employees in problem solving well.
- 8) Can increase job satisfaction.
- 9) Can provide information about the program technically and intellectually.
- 10) Can reduce the fear of facing tasks in the future

In the current Covid-19 pandemic, organizations are required to be able to adapt to dynamic conditions, as well as be agile to the changes that occur. In addition, the Covid-19 pandemic also demands new habits, changes many things and limits space for movement. On the other hand, this pandemic must also be used as a momentum to innovate in HR development programs that can support efforts to achieve corporate strategy. One form of innovation that is carried out and in line with technological advances is by utilizing digitalization through e-learning.

According to Rusma (2013) the e-learning system is a form of application of information technology aimed at facilitating the learning process which is packaged in digital form of content and its implementation requires facilities that are connected to the internet. Learning using internet technology has special characteristics. These characteristics make e-learning different from other electronic media. Other electronic media only function as passive aids, for example a tape recorder that can only record sound and be listened to at a later time, OHP helps instructors not bother with dirty markers when writing on the blackboard and learning participants can easily duplicate slides that are difficult to take notes. Stand alone computers are also limited to delivering material more interactively with presentations accompanied by videos and other supporting images.

E-learning is very different from conventional learning because it must have the following characteristics:

- 1) Interactivity
Availability of more communication lines, either directly (synchronous), such as chat or messenger or indirectly (asynchronous), such as forum mailing lists, or guest books.
- 2) Independency
Flexibility in the aspect of providing time, place, teachers, and teaching materials. This causes learning to be more student-centred.
- 3) Accessibility
Learning resources become more accessible through distribution on the internet network with wider access than the distribution of learning resources in conventional learning.

4) Enrichment

Learning activities, presentation of materials and training materials as enrichment, enabling the use of information technology tools such as video streaming, simulation, and animation.

Presentation of web-based e-learning can be interactive. Learning information can also be delivered in real time. Likewise with the communication, although not directly face-to-face, the discussion forums on the web can be used for online and real-time discussions. The e-learning system does not have access restrictions so that it allows learning to be done with more time. Learning participants can access it anytime and anywhere. On the web, it is possible to store material in the form of text or sound storage results that can be downloaded by learning participants.

Learning Management System (LMS) is a form of e-learning implementation used in online learning methods. Currently there are many types of LMS offered, such as: Moodle, Claroline, and aTutor. Each type of LMS has its features. According to Wahono (2008) the general functions that an LMS must have include:

1) Uploading and sharing material

LMS provides services to simplify the process of publishing learning process materials. The instructor will upload teaching materials according to the syllabus that has been made, it can be in the form of material notes, articles, assessments and others.

2) Forum and chat

Forums and online chats are two-way communication between instructors/teachers and their students, both synchronously (chat) and asynchronous (forum, email). With these existing facilities, it is possible for students to write their responses, and discuss them with other colleagues.

3) *Quizzes and surveys*

Quizzes and online surveys can provide instant assessment for students. This is a very good tool to use to get direct feedback from students according to their abilities and absorption.

4) *Gathering and reviewing assignment*

The results obtained from the evaluation/monitoring of learning success are that the provision of scores or scores to students is carried out automatically and online.

5) *Recording grades*

For the evaluation of students in the LMS, there are facilities for monitoring and recording student data automatically.

A learning is said to be effective if after learning there is a change in the cognitive (thought), affective (attitude) and psychomotor (behavior) domains. Therefore, the learning that is in e-learning and contained in the LMS must accommodate changes and improvements for the three domains. For example, the learning provided is not only the delivery of material and the implementation of the pre test post test but is also equipped with assignments related to learning materials that must be completed by participants within a certain time. The results of the assignment are then reported to the instructor.

Referring to the training evaluation theory from Kirkpatrick & Philips, to measure the effectiveness of online learning via LMS, evaluation can be carried out with the following stages:

1) Level 1 – *Reaction*

Questionnaires were given to participants once they had completed the lesson. Some aspects that need to be asked are:

a) Instructor, things that can be asked include related

- Systematic presentation of the material.
- Time allocation for presentation of material.
- Clarity in providing material.
- The extent to which the instructor understands the participant's work situation.
- How to increase participant participation.
- How does the instructor motivate participants to implement the results of the training in the workplace.

b) Material

- Suitability of learning materials with job needs.
- The suitability of learning materials with self-development efforts related to job needs.
- The number of learning materials that can be understood by the participants.
- The number of learning materials that can be applied practically in the work.
- Has the material been updated with the latest conditions?

c) Participants

- The extent to which participants' expectations about the learning materials followed
- How enthusiastic are the participants in participating in the learning.
- How is the readiness of participants in applying the competencies obtained from learning.
- What is the overall level of participant satisfaction.

d) Training Organizer

- Training committee services.
- Learning infrastructure (digital platform).
- Committee response to participant needs.

Level 1 evaluation is delivered in the form of a questionnaire in the form of a Likert scale so that the participant's satisfaction score can then be known on the aspects asked. Apart from being in the form of a Likert scale, an open question column can also be added, to ask for feedback from the participants.

2) Level 2 – *Learning*.

Level 2 evaluation is given in the form of giving questions related to learning materials given before (pre-test) and after learning (post-test). The difference between the post test and pre test shows the extent to which the material is effective or can be understood by the learning participants.

3) Level 3 – *Behaviour*

Level 3 evaluation is given in the form of questions to the direct supervisor of the learning participants regarding how to increase the knowledge, skills and attitudes of participants after participating in the lesson. Assessment can only be done if participants apply what they learn through their daily work activities. Therefore, to ensure this, it is necessary to make a post-training assignment.

4) Level 4 – *Result*

Level 4 evaluation is carried out by assessing whether there is an increase in field performance after a participant is sent to take part in learning. Performance related to learning needs to be identified correctly, so that companies can see the correlation between learning and performance being measured.

5) Level 5 – Return on Investment (ROI) or Return on Training Investment (ROTI)

At the highest stage of this learning evaluation, a financial calculation is carried out to what extent the investment spent on learning can be returned to the company in the form of financial benefits. The formula of ROTI is:

$$ROTI (\%) = \frac{\text{Total Benefit} - \text{Total Cost}}{\text{Total Cost}} \times 100\%$$

In general, not all learning requires evaluation up to level 5. For learning that only aims at increasing knowledge, it is sufficient to carry out evaluation up to level 2. For learning aimed at changing behavior, it can be done up to level 3 evaluation. Learning shows that the correlation is very strong with the performance of the field/organization so it can be evaluated up to level 4 and 5. Evaluation of training carried out up to level 5 is a maximum of 10% of the entire corporate learning program.

In addition to measuring the effectiveness in terms of learning carried out through the LMS, it is also important to know the extent to which the effectiveness and efficiency of the use of the LMS is. Factors that influence the use of LMS also need to be analyzed in order to make appropriate follow-up. One of the measuring tools in the form of a questionnaire that is commonly used is the Technology Acceptance Model (TAM). The TAM model explains the behavior of computer information technology users based on the beliefs, attitudes, intentions and relationships of user behavior. The purpose of this model is to explain the main factors of computer information technology user behavior. According to Davis in Munir (2010) the TAM model has five constructs, namely, Perceived Ease of User, Perceived Usefulness, Attitude Toward Using, Behavioral Intention to Use and Actual System Usage.

- 1) Perceived Ease of User, user's perception of the ease of use of a technology as a measure of confidence that the LMS can be understood and used easily. The indicators for the ease of use of the LMS that were asked include :
 - LMS is very easy to learn.
 - LMS makes it very easy to do the activities that users want and need.
 - LMS is very easy to improve user skills
 - LMS is very easy to operate.
- 2) Perceived Usefulness user perception of usefulness as a measure of the use of an LMS that can be trusted and will be useful for people who use it. LMS usefulness indicators include :
 - Usability that includes dimensions makes learning easier, more useful and increases productivity.
 - Effectiveness which includes dimensions of enhancing effectiveness, developing learning performance
- 3) *Attitude Toward Using*, namely the user's attitude towards the use of the LMS in the form of acceptance or rejection as an impact if someone uses the LMS. One aspect that influences individual behavior is attitude. A person's attitude consists of cognitive, affective and behavioral.
- 4) *Behavioral Intention to Use*, namely the behavior of LMS users to continue using the LMS. The level of use of the LMS can be predicted from the attention to the LMS. For example, the user's desire to add peripherals to support the LMS, the motivation to continue using the LMS and the desire to motivate others to use the LMS.
- 5) *Actual System Usage*, namely the use of LMS which can be seen in terms of frequency and duration.

The TAM model questionnaire was distributed and filled out to each LMS user as

material for analyzing the beliefs, intentions, attitudes and behavior of LMS users. The results of the analysis of these factors become important ingredients in efforts to improve the LMS in order to support the effectiveness and efficiency of using the LMS.

V. Conclusion

The development and utilization of digitalization as a result of technological developments has been carried out by many organizations in an effort to support the improvement of the quality of Human Resources (HR). Optimizing the use of digitalization is increasingly felt and seems to be accelerated by the Covid -19 Pandemic that has taken place since the beginning of 2020 in Indonesia. The Learning Management System (LMS) is one example of the use of digitalization in HR development programs. Utilization of the LMS must always be monitored in order to achieve the effectiveness and efficiency as desired by the organization. Implementation of a five-level training evaluation based on Kirkpatrick and Philip's concept needs to be carried out to ensure that the learning carried out through the LMS has an impact on both the learning participants and the organization. In addition, the use of the Technology Acceptance Model (TAM) questionnaire is important to obtain information on the factors that encourage employees to use the LMS and its analysis in order to support the effectiveness and efficiency of using the LMS.

References

- Dimiyati & Mudjiono. (2006) Belajar dan Pembelajaran. Jakarta : PT Rineka Cipta. P.10
- Made, Wena. (2020). Strategi Pembelajaran Inovatif Kontemporer : Suatu Tinjauan Konseptual Operasional, Jakarta : Bumi Aksara. P 2
- Mulyani W. (2013). Pengaruh Pembelajaran Berbasis E-Learning terhadap Hasil Belajar Siswa pada Konsep Impuls dan Momentum. Jakarta : Universitas Negeri Jakarta.
- Munajatisari, Rini Rodiah. (2014). Analisis Efektivitas Metode Pelatihan Klasikal dan E-Learning, Bandung : Jurnal Administrasi Bisnis, p. 173
- Munir, (2010), Penggunaan Learning Management System di Perguruan Tinggi
- Mustopa et al, (2021), Pelatihan dan Pengembangan SDM di Masa Pandemi Covid 19, Bandung : UIN Sunan Gunung Djati
- Ningrum, P. A., et al. (2020). The Potential of Poverty in the City of Palangka Raya: Study SMIs Affected Pandemic Covid 19. Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Volume 3, No 3, Page: 1626-1634
- Purta, et al, (2020), Pengembangan Smartphone Learning Management System (LMS) sebagai Media Pembelajaran Matematika di SMA. Jurnal Matematika Kreatif-Inovatif.
- Rohmah, Nurruli Fatur, (2018), Pelatihan dan Pengembangan Sumber Daya Manusia. Intizam, Jurnal Manajemen Pendidikan Islam
- Rusman, (2013), Model-model Pembelajaran : Mengembangkan Profesionalisme Guru. Jakarta : Rajawali Press
- Saleh, A., Mujahiddin. (2020). Challenges and Opportunities for Community Empowerment Practices in Indonesia during the Covid-19 Pandemic through Strengthening the Role of Higher Education. Budapest International Research and Critics Institute-Journal (BIRCI-Journal). Volume 3, No 2, Page: 1105-1113.
- Sihombing, E. H., Nasib. (2020). The Decision of Choosing Course in the Era of Covid 19 through the Telemarketing Program, Personal Selling and College Image. Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Volume 3, No.

4, Page: 2843-2850.

- Slameto. (2010) Belajar dan Faktor-Faktor yang Mempengaruhinya. Jakarta : Rinek Cipta. Edisi Revisi, Cet ke 5, p. 2
- Strother, JB, (2002), An Aseessment of the Affectiveness of e-learning in Corporate Training, Florida : Florida Institute of Technology.
- Sulistyorini et al, (2020), Studi Literatur Analisis Kelebihan dan Kekurangan LMS terhadap Pembelajaran Berbasis Proyek pada Mana Pelajaran Pemrograman Web di SMK,2020, Surabaya : Universitas Negeri Surabaya
- Zainal, Arifin Ahmad, (2010) Perencanaan Pembelajaran : dari Desain Sampai Implementadi h. 7
- Zulfiani, et al. (2009). Startegi pembelajaran Sains. Jakarta : lembaga Penelitian UIN Jakarta,. P. 64