A Development Needs Analysis and Perceived Usefulness of Learning Management System (LMS) in E-commerce Learning for Youths

Yanuar E. Restianto[1], Aldila Krisnaresanti[2]*, Nur Chasanah[3], Dadang Iskandar[4], [5]Nofi Bayu Darmawan

[1]Universitas Jenderal Soedirman, yanuar.restianto@unsoed.ac.id, Indonesia
[2]*Universitas Jenderal Soedirman, aldiladinanti88@gmail.com, Indonesia
[3]Universitas Jenderal Soedirman, nur.chasanah@unsoed.ac.id, Indonesia
[4]Universitas Jenderal Soedirman, dadang.iskandar@unsoed.ac.id, Indonesia
[5]Kampus Komerce, fanspage.id@gmail.com, Indonesia
*Yanuar E. Restianto

ABSTRACT

The development of information technology (IT) has offered a new paradigm in learning and training programs. The concept of e-learning has been adopted by many commercial companies to provide training to their employees using a Learning Management System (LMS). This study aimed to analyze the need for LMS development for e-commerce training programs and to analyze the expected benefits of LMS by youths who would learn e-commerce using LMS. Respondents in this study were 141 youths who would learn e-commerce using LMS, data analysis using descriptive statistics and non-parametric statistical analysis using binimial tests. Based on the results of the needs analysis for LMS development, it was concluded that the LMS would be developed,if it had the following functions: it provided 1) online materials, 2). online assignments, 3). online quizzes, 4). online announcements, 5). online discussion, and 6). online attendance lists. Prospective LMS users expected that the LMS would be developed to be able to facilitate communication between trainers and trainees, to ease the trainees in getting information and training materials, to ease the material delivery outside the classroom, to help the process of absorbing material with discussion forums, and to help trainees in submitting assignments.

Keywords: Learning Management System (LMS); Perceived Usefulness; E-Commerce.

1. Introduction

The development of information technology has a huge impact on various aspects of life, including in the field of education. In this field, information technology (IT) development built a new paradigm in the learning process called e-learning. In recent years, the use of e-learning has grown rapidly (Hogo, 2020) and the educational model with e-learning has played a crucial role in teaching and learning activities (Franceschi, Lee, Zanakis, & Hinds, 2009).

E-learning is not only used in universities but also in elementary schools, even now e-learning has been widely adopted by companies, both small, medium and large businesses to provide training to their employees. In the era of Covid-19 pandemic, the implementation of e-learning is increasingly massive in schools, campuses, and in various training activities organized by

commercial companies. E-learning allows interaction between trainers and trainees because e-learning learning does not have to be done by in class meeting so that trainees can discuss with trainers without having to be limited by space and time.

Nowadays, there are choices of applications that are used for the implementation of e-learning called Learning Management System (LMS). LMS is able to integrate many functions for learning and training activities. Many LMS have been developed both for educational purposes and for training programs, but the development of LMS for e-commerce training for the young generation who will be recruited by Micro, Small and Medium Enterprises (MSMEs) is still relatively limited. Whereas the existence of an LMS for e-commerce training is importantly needed to encourage the growth of MSMEs so that it will provide a multiplier effect for the economy and reduce the level of urbanization. The development of an LMS requires a lot of time and money, so the LMS developed must give real benefit for learning or training activities in order to create effective learning or training activities. Each training has different characteristic so that the development of an LMS must be in line with the needs of the training program. LMS development that is not participative will cause less effective LMS development as a learning medium because there is no match between user needs and the developed LMS. The missmatch between needs and desires will affect user satisfaction (Parasuraman et al., 1985), and LMS user satisfaction will affect the intention to continue using LMS (Rani et al., 2014). Based on these reasons, it is necessary to conduct a study to analyze the functions/features needed for the development of an e-commerce learning using LMS and what LMS's benefits are expected by users for e-commerce training for the youths who will be recruited by MSMEs.

2. Literature Review

2.1 E-learning and Learning Management System (LMS)

E-learning is an abbreviation of Electronic Learning. The definition of e-learning is very broad, experts define e-learning from various points of view. One of the most widely used definitions is according to Rossen & Hartley (2001), which stated that e-learning is a type of teaching and learning in which teaching materials delivery using the internet or other computer network media. Meanwhile, Gilbert & Jones (2001) defined e-learning as a learning activity in which material delivery is obtained through an electronic media. The use of electronic media in learning provides easy access to learning materials and activities without being limited by space and time so that the implementation is more flexible. Suresh & Gayathri (2018) stated that e-learning offers an alternative that is faster, cheaper, and potentially better. E-learning has to be implemented and has to be easily available to everyone.

Rosenberg (2001) stated that the learning method with e-learning has many advantages, such as lower costs, unlimited access, various contents, always up to date, flexible or learning can be done at any time, more universal, able to handle various scales, and improve services.
The success of e-learning implementation is influenced by 4 main factors: instructors, students, information technology, and university support (Selim, 200), while Keramati et al., 2011 stated that organizational readiness, teachers' motivation, and training are very important factors to determine the success of e-learning.

Teachers are the major factor in educational success (Piccoli et al., 2001). In distance learning

using e-learning, the teacher plays a vital role (Zhao, McConnell, & Jiang, 2009). Students play a very important role in e-learning (Aydin & Tasci, 2005). E-learning is the implementation of a student-centered environment, students' motivation and self-confidence will improve e-learning outcomes (Baeten, Kyndt, Struyven, & Dochy, 2010). Castillo & López (2014) stated that motivation is a very determining factor for the success of e-learning. Distance education is the result of information technology development and resulted in the e-learning revolution (Selim, 2007), so that the readiness of information technology and information technology skills will determine the success of e-learning. Information technology projects are highly dependent on the commitment and support of top management (Huang, 2010) failures of information technology projects are due to lack of top management support (Soong, Chan, Chua, & Loh, 2001), Since e-learning is a project based on information technology, so top management must understand this system and its various benefits.

The application which is used for e-learning is the Learning Management System (LMS). It is an online portal that connects lecturers and students (Adzharuddin, & Ling, 2013). LMS can also be described as a high level web based technology solution for planning, conveying and managing a myriad of learning events within an organization such as online, virtual classroom and instructor-led courses that can assess a specific learning process (Alias and Zainuddin , 2005), while Ellis, (2009), stated that LMS is software that is useful for administration, documentation, source material, and reports on the delivery of online learning materials that are connected to the internet. Some LMS platforms are by design and some are by utilization. Some of the free and popular LMS platforms include Quipper School, Edmodo, Quipper, Google Classroom, Schoology, Geschool, dan Moodle. Some of the LMS platforms above are considered great and in demand among students to university students. The features are quite complete, starting from chatting, uploading Ms.word files, images, excel, ppt, videos, also making questions, and scoring.

Previous research on e-learning has proven that e-learning had a positive effect on learning achievement. Banihashem et al., (2014) stated that e-learning encourages students to be more creative. Kiviniemi (2014) said that there was an increase in participant activity in learning using a blended learning approach. The results of the research by Bibi & Jati, (2015) stated that the use of LMS-assisted blended learning is able to increase students' learning motivation and understanding in algorithms and programming courses. Melton & Chopak (2009) in their research found that the average learning outcomes and levels of student satisfaction using blended learning were higher than full face-to-face classes. Regarding the effectiveness of LMS, Keshta & Harb, (2013) found that the use of LMS-assisted blended learning was more effective than traditional methods in developing students' writing skills.

2.2 Perceived Usefulness

Education actors implement the LMS with expectation to get its benefits. Davis et al., (1989) defined perceived usefulness as a belief in usefulness, or the degree to which users believe that the use of information technology/systems will improve their performance at work. Rouibah et al., (2011) stated that perceived usefulness is related to the belief that using information technology will create value for them. Perceived usefulness is a trully important factor to predict the use of information technology and it will affect decision making. If someone believes that a system is useful, he or she will use it. However, if someone believes that the system is less useful, he or she

will not use it. Studies have proven that perceived usefulness is an important factor in determining the desirability of using information systems or Internet technology (Adams et al., 1992; Ahn et al, 2004). Perceived usefulness also had a positive effect on information technology user satisfaction (Seddon and Kiew (1994) while Rai et al., (2002) stated that there is a positive correlation between perceived usefulness and user satisfaction on the ERP system, while Hsu and Chiu (2004) stated that perceived usefulness and user satisfaction affect the use of e-service. Davis (1989) stated that perceived usefulness are formed from six indicators, they work faster, have better job performance, have higher productivity, have more effectiveness, work easier and more useful.

3. Research Methodology

This research was a survey research with youths as research subjects who had the potential to take part in e-commerce training using an LMS. The sample size in this study was 141 respondents who were taken using the accidental sampling method. To measure the level of importance of the functions in the LMS and the expected benefits of prospective LMS users, five Likert scales were used because the Likert scale is easy to understand and simple (Suliyanto, 2011). To measure the data analysis using descriptive statistical analysis and using non-parametric statistics the binomial test (Suliyanto, 2014).

4. Results

4.1 Profile of Respondents

Table 1. Profile of Respondents

Profile of Respondent	**Information**	**Total**	**Percentage**
Gender	Men	43	30.496%
	Women	98	69.504%
	Total	141	100%
Age	≤17 years old	3	2.128%
	18 years old	20	14.184%
	19 years old	47	33.333%
	20 years old	55	39.007%
	≥21 years old	16	11.348%
	Total	141	100%
E-commerce	e-advertising	13	9.220%
	e-customer service	0	0.000%
	e-social media management	68	48.227%
	Marketplace optimizer	60	42.553%
	Total	141	100%

Based on table 1, it was known that most of the respondents were women because the respondents in this study were youths who were technology literate, the younger generation who are technology literate in general are those who have higher education or students, while the number of female students in universities were mostly women. Most of the respondents' ages in the study were between 17 and 21 years old, this was because the respondents were mostly students, so the age range was between 17 and 21 years old. Most respondents chose e-commerce in the field of e-social media management because they were familiar with social media, so they wanted to earn income through social media through e-commerce training.

The binomial test was used to examine the differences among groups who considered the functions in the LMS to be important or not. Based on the results of the binomial test, the following results were obtained:

Table 2. Binomial Test Result

Information	Total	Number	Percentage	Sig.
Online Material Provision	Important	130	92%	0.000
	Not Important	11	8%	
	Total	141	100%	
Online Assignment	Important	119	84%	0.000
	Not Important	22	16%	
	Total	141	100%	
Online Quiz	Important	108	77%	0.000
	Not Important	33	23%	
	Total	141	100%	
Online Announcement	Important	135	96%	0.000
	Not Important	6	4%	
	Total	141	100%	
Online Discussion	Important	135	96%	0.000
	Not Important	6	4%	
	Total	141	100%	
Online Presence	Important	127	90%	0.000
	Not Important	14	10%	
	Total	141	100%	

Based on table 2, it was known that there was a significant difference between the group who answered important and the group that answered not important to the LMS function in question. Based on the results of the binomial test, it could be concluded that the function; the provision of online materials, online assignments, online quizzes, online announcements, online discussions, and online attendance lists, were important functions in an LMS. To find out the importance of each function ranking in the LMS could be seen in the following figure:

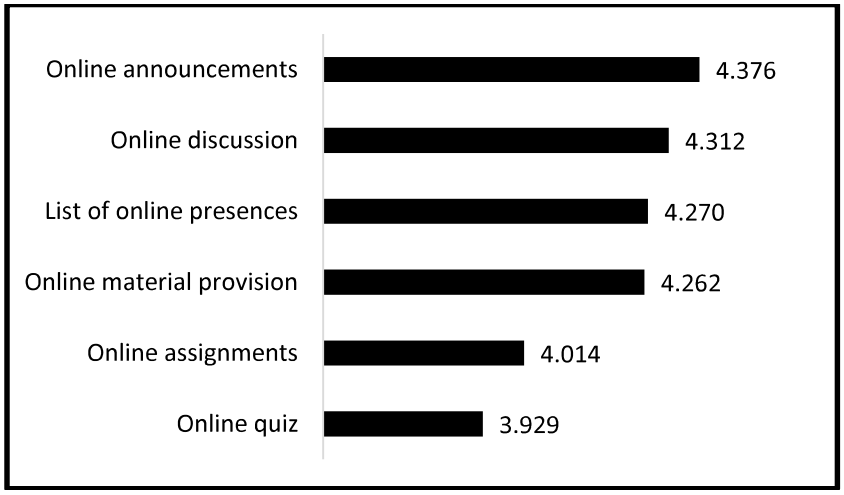

Figure: 1 Expected functions of the LMS

Based on Figure 1, it could be seen that the most important functions in an LMS for e-commerce training were online announcements, online discussions, online attendance lists, online material provision, online assignments, and the last was online quizzes.

In each of the functions in the LMS there were various features. To find out what features were needed in each LMS function, it was measured using a scale of 3 for important score, 2 for neutral score, and 1 for unimportant score. The results of data analysis on the importance of features in each function could be seen in the following figure:

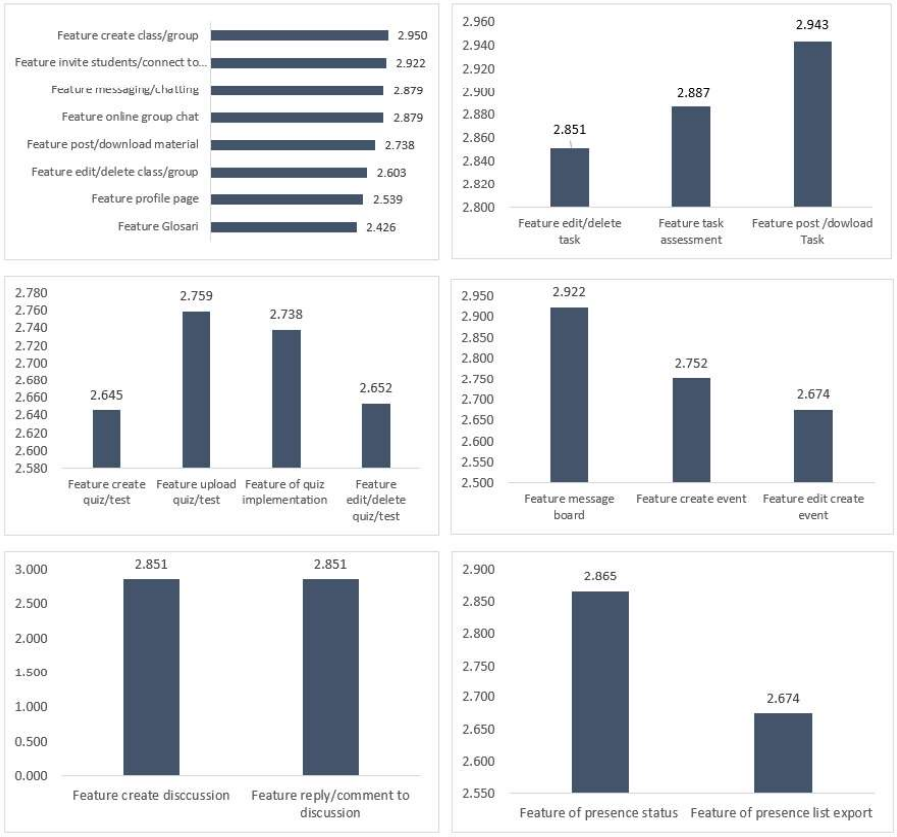

Figure 2. Features expected in each Function in an LMS

Based on Figure 2, it could be seen that in the online material delivery function, all the features consisted of the create class/group feature, the post/download task feature, the invite students/connect to teacher feature, the messaging/chatting feature, the online group chat feature, the material upload/download feature, edit/delete class feature, page profile feature, and glossary feature were all considered important by potential users because the average was above 2 and the most important feature was the create class/group feature.

In the online task function, the edit/delete task feature, the task assessment feature, and the task post/download feature were seen by respondents as important features because they had above 2 average value, but the most important in this function was the task post/download feature.
In the online quiz function, the create quiz/test feature, the quiz/test upload feature, the quiz implementation feature and the edit/delete/quiz/test feature were also features that were considered important by users because they had an average score above 2, but the most important thing was the quiz/test upload feature.

In the online announcement function of the message board feature, the create event feature and the edit create event feature were important features because the average value was above 2, but the feature that was considered the most important in this function was the message board feature.

In the online discussion function, the create discussion feature and the reply/comment to discussion feature were as important as the average value above 2. In the online attendance function, the presence status and presence list export features were also important features because they had above 2 average value but what was more important in the online attendance function was the presence status feature.

The perceived usefulness survey of LMS users was used to determine the expected benefits of developing an LMS for e-commerce training. The following figure showed the expected benefits of developing an LMS for e-commerce training:

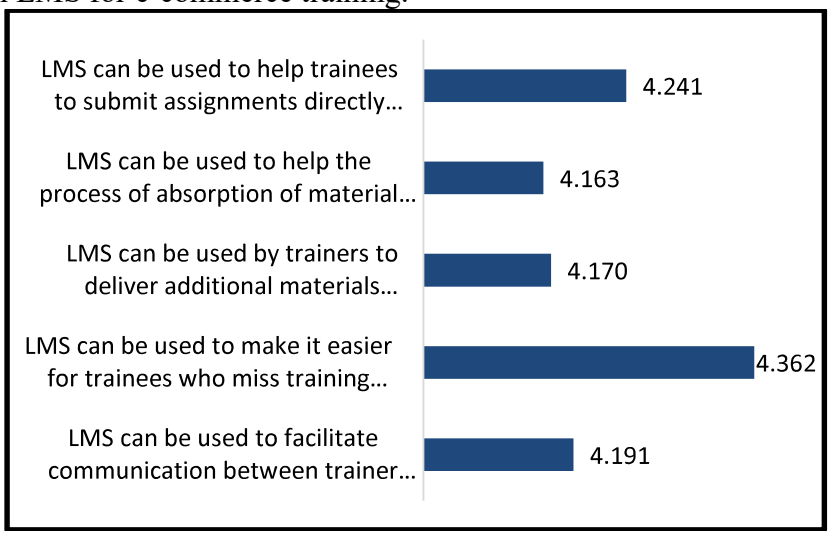

Figure 3. Expected Benefit

Based on Figure 3, it could be seen that prospective LMS users expected that the LMS would be developed to be able to facilitate communication between trainers and trainees, to ease trainees to get information and training materials, to ease the material delivery outside the classroom, to help absorbing material process with discussion forums, and to help participants in submitting their assignments. The most expected benefit was to ease the trainees in getting training materials.

5. Conclusion

Based on the results of the binomial test, it can be concluded that the function; providing online materials, online assignments, online quizzes, online announcements, online discussions, and online attendance lists, are important functions in a learning management system. Prospective trainees expect that the LMS will be developed to be able to facilitate communication between trainers and trainees, to ease the trainees in getting information and training materials, to ease the material delivery outside the classroom, to help material absorbing process using discussion forums, and to help trainees in submitting assignments. Based on these conclusions, the development of an LMS for e-commerce training must provide those mentioned functions, must be equipped with the required features, and must fulfill the expected benefits by developing an LMS according to the needs of potential users.

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