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Supporting Elements in the Learning Process through E-Learning Training at SMAN 2 Boyolali

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Abstract

One positive impact of technological development on education is providing facilities to support the learning and teaching process. The teachers to be more efficient, and the delivery of material can be easily conveyed through e-learning facilities. Schoology is an e-hearing media platform with various facilities that make it easy for educators and students in the educational process to academic results. The purpose of this activity is to test the usability level of using Schoology. The administration and teaching process to go to the level of understanding of operations through community service carried out at SMAN 2 Boyolali. Pre-test results that indicate that the high school has not yet implemented a learning management system. There are 5.26% of teachers who are only limited to learning the e-learning Schoology, while 94.74% only know it through the Universitas Negeri Semarang team. After the training, the results of the post-test show that 80.26% of teachers can use Schoology. The existence of e-learning training can help teachers support the teaching and learning process at school.

Keywords: e-learning; schoology; learnability; efficiency; satisfaction

INTRODUCTION

The Industrial Revolution 4.0 had a significant impact on technological development. This era is marked by increased connectivity, interaction, and digital systems development, artificial intelligence, and virtual (Alcácer & Cruz-Machado, 2019). This very rapid technological development has led to the birth of various digitalization innovations. Digitalization is a process in which all forms of information, whether numbers, words, images, sounds, data, or motion, are encoded into digital (Shorten & Khoshgoftaar. 2019). This digitalization movement takes place in all areas of life.

This digital era is the driving force for technological progress, one of which is technological advances in education. The rapid development of information technology has also had an impact on education in Indonesia. The digital age has led to a significant change in our education, especially in the learning process. At present, the use of information technology in the learning process is a must because it provides many conveniences and benefits for both teachers and students.

Various digitalization efforts have been made to support the learning process. These efforts make education today shift from the conventional model that requires teachers to do face-to-face meetings with students in one room, to more flexible learning (Kjaegaard, 2017). The learning process can be carried out anywhere as long as there is internet network access. Teachers can use online learning media to convey learning and give students (Fitriningtiyas et al., 2018).

Teachers can do online learning by utilizing e-learning. E-Learning provides complete facilities to support online learning activities and facilitate the process of evaluating student learning outcomes. Various internet sites

provide e-learning based learning. These sites include Edmodo, teacher's room, google classroom, and Schoology. The 2013 curriculum is currently applied in the 9-year compulsory education unit, the role of a teacher is limited as a mediator and facilitator, while students are required to be more active in the learning process. The high demands of teachers to provide quality learning activities ave an effect on the emergence of earning support system needs so that learning is maximally achieved. However, the limited time and study space for students to make learning material cannot be fully delivered in classroom learning. Especially if students are experiencing pain or participating in competitions and activities outside the classroom, they cannot participate in learning activities. This situation is also an obstacle for teachers to be able to create suitable learning activities.

On the other hand, parental support that is increasingly lacking due to their high mobility is one factor that does not create a climate that is conducive to student learning. A learning system that can be used anywhere and anytime and involves parents in terms of supervision is needed. In the world of education in today's technological era is one of which is through e-learning.

E-learning is a technology used to support the teaching and learning process conventionally by using several facilities such as direct discussions between teachers and students. The delivery of teacher material to students using internet technology, intranet, other computer network technology, submission of student assignments, and examinations was conducted online (Omoregbe et al., 2017). The use of e-learning can provide learners' learning experiences. Experience in utilizing technology and information is increasing. Besides that, in terms of teaching staff or e-learning, teachers can make it easier for teachers to control students' activities and increase learning interactions between students with the teacher to better know each student's abilities.

SMAN 2 Boyolali was chosen by the researchers to do service because the education unit has not yet implemented a learning management system (LMS). The results of student learning activities less than the maximum. The teacher works harder to enliven the atmosphere of learning and pursue material that must be gone through with limited study time in class. In the case, the teacher complacent to input and recap the value of student learning so that at the end of the semester, learning the teacher works overtime to make report cards on student learning outcomes. Even some student guardians only to take the student learning outcomes are many who ignore it. Some parents prefer to represent others in report-taking. This behavior can result in parents not knowing the development of students in academics and socialization in the school environment.

Based on the results of a survey conducted in secondary schools, almost all students have smartphone gadgets. The use of gadgets has been widely used for negative things such as students who prefer to play games rather than learn. As a result, students become addicted and can endanger student development, especially in the learning process. It can be said that gadgets have become friends for students in this technological era, so they need to be utilized for positive activities. Therefore, the use of Information Technology in support of improving the quality of education is critical. One of them is by using e-learning, a learning application that uses electronic media that is connected through internet media or intranet networks. To discover the evaluation of training and the use of Schoology e-learning, the researchers measured usability based on a descriptive approach through independent variables or element supporting, namely Learnability, efficiency, error, and Satisfaction.

The positive impact resulting from the development of information and communication technology is the more accessible work of humans, including education. One of them is the emergence of a new learning concept, e-learning. This concept is distance learning by utilizing software connected to the internet as a medium of learning. The utilization of e-learning can provide learner learning experiences. Experience in utilizing technology and information is increasing. Also, in terms of teacher or e-learning, teachers can facilitate teachers to control students' activities and increase learning interactions between students and teachers so that teachers can better know each student's abilities. On the other hand, e-learning provides parents with facilities to provide more supervision over the activities and development of their children in school during their busy lives.

One of the learning support software with the e-learning concept is Schoology. The e-learning is an innovative platform built on inspiration from Facebook (its interface and model, fundamental aspects with the presence

of posts, status updates, sharing, and instant updates) and the right goal to be a learning tool. The several advantages of Schoology (Astuti, 2019), among others: a) Schoology provides more choices of resources than that provided. b) Schoology can accommodate the type of questions (question bank) that will be used during the quiz. c) Schoology provides attendance facilities that are used to check student attendance. d) Schoology provides analytical facilities for all student activities on each course, assignments, discussions, and other activities prepared for students.

They were learning' using support software with the concept of e-learning. In this case, Schoology is expected to provide more value to support learning activities. The added value in question is that students can learn activities anywhere and anytime by involving parents as learning supervisors. On the other hand, this can also optimize smartphones' use as a product of information and communication technology advancements to minimize these products' negative impact. The main display (homepage) of the Schoology media can be accessed on the page https://www.schoology.com/, or this learning media can be installed on an Android smartphone so that it is more easily accessed and operated anywhere.

METHOD

Community service activities are carried out through e-learning training using LMS Schoology, which is carried out at SMAN 2 Boyolali. The stages of this activity are socializing about e-learning and continued by providing training. The trainees were 38 educators (teachers). Data collection techniques using a questionnaire through pretest and post-test. Data analysis with a descriptive approach to determine the evaluation of training and the use of Schoology in e-learning learning by measuring based on usability factors, which include Learnability, efficiency, error, and Satisfaction. The usability is one of the quality attributes used to measure how easily an interface (user interface) is used. There are components of usefulness components including learning ability, efficiency, memory, error, and Satisfaction (Gathercole et al., 2019)

1. Learnability, the measured aspect is how easy the user is to learn, run, and how fast the user can use a function in the system. There are three indicators used: easy to understand, easy to look for specific information, and easy to identify the navigational mechanism.
2. Efficiency, aspects used to measure the speed and accuracy of users in accessing the system. Users can recognize the features they need and efficiently operate navigation in exploring the system. There are two indicators used to measure system efficiency, namely: easy to reach quickly and easy to navigate.
3. Memory ability is used to measure how easily a user is accustomed to using a system that has not been used for a long time. There are two indicators used, namely easy to remember and easy to re-establish.
4. Errors, aspects that are used to measure how many mistakes users make and errors in doing some tasks when accessing a system. There are two indicators used in the assessment: the number of errors detected and those easily corrected.
5. The Satisfaction, aspect is used to measure the pleasure, comfort, and usefulness of users in accessing a system. There are two indicators used in assessing aspects of Satisfaction, including a social system and comfort when used.

RESULT AND DISCUSSION

The implementation of community service through a training program in the use of the School Management learning system (LMS) was held in July 2019 and attended by all teachers at SMAN 2 Semarang. At the beginning of the service activities, all teachers were given a pretest about e-learning Schoology, and there were 5.26% of teachers who understood e-learning Schoology. Furthermore, the LMS introduction and e-learning activities were delivered by the teaching team, taking data to determine teachers' insights about LMS in general. Information is needed on the number of students who already have supporting technology to use an LMS such as smartphones or laptops.

This pretest results showed that most of the teaching staff at SMAN 2 Boyolali did not know and did not have experience with the use of learning management systems (LMS), as shown in Figure 1. Only 3% of teaching staff are aware of LMS but have not been able to implement this technology support. LMS's lack of experience also affected the teaching staff, not being aware of the existence of the

Schoology. There are 3% who know LMS, and 5% know about Schoology, as shown in Figure 1.
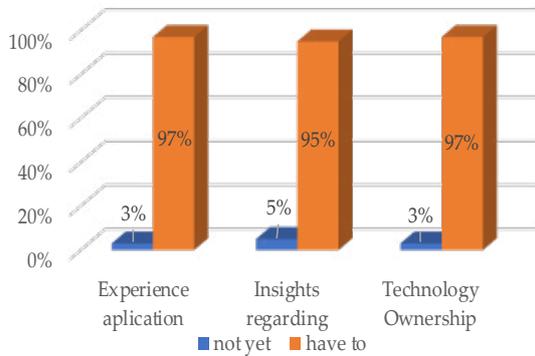

Figure 1. Experience Application, Insights Regarding, and Technology Ownership for Using LMS

Students of SMA Negeri 2 Boyolali who have the supporting technology to run LMS are very high at around 97% of the total students. Community service activities supported by training the use of LMS Schoology. The training was carried out with intensive assistance and received a module for using Schoology. With the module, the trainees can practice independently in using the LMS.

Post-test assessment by measuring the usability factor at LMS Schoology in the learning and teaching process. Each variable was analyzed for usability value by calculating the questionnaire frequency distribution of each variable, namely, Learnability, efficiency, error, and Satisfaction. The data description provides a general description of the distribution of data obtained at the time of data collection through a questionnaire. The samples taken in this activity were 38 teachers.

Learnability Indicators

Learnability is the ability of the application that allows users to quickly learn how to operate applications or use them in carrying out specific processes. The statement items described in this variable consist of 2 indicators with two statements. Based on the test results on the learnability variable, it is obtained a definitive percentage calculation score. It can be concluded that the average statement items are as follows: The test results in Table 1 can be concluded that the average score of Learnability is 85.9% of respondents agree that Schoology is easy to learn and easy to learn in the teaching and teaching process. These results agree with an insight that a significant difference in Edmodo e-learning and Schoology usability rankings is because one of the usability attributes is learning ability (Dolendo, 2016).

Efficiency Indicators

Efficiency is related to resource requirements, such as effort, time, and cost, to reach the goal of using the system. The statement items described in this variable consist of 2 indicators with two statements. From the detailed calculation of the percentage above, it can be concluded that the average statement items. Table 2 shows that the average total score of the efficiency variable is 80.3%, agreeing that Schoology is very efficient in helping the teaching and learning process.

Table 1. Learnability Indicators of implementation e-learning

| Indicators | Percentage (%) | | | | | Information |
	STS	TS	N	S	SS	
Easy to look for specific information	0,0	2,6	7,9	73,7	15,8	An average of 89.5% obtained, agreeing to Schoology, is informative in the delivery of material.
Easy to identify the navigational mechanism	0,0	5,3	7,8	71,1	15,8	86.9% stated well that they could operate the features contained in e-learning easily
Easy to identify the navigational mechanism	0,0	0,0	18,4	76,3	5,3	Smooth coordination for teachers Teachers send material in one semester or more to students indicated by the acquisition of 81.3%

Table 2. Efficiency Indicators of implementation e-learning

Indicators	Percentage (%)					Information
	STS	TS	N	S	SS	
Easy to reach quickly	0,0	5,2	15,8	65,8	13,2	There are 79% of respondents agree that the use of Schoology is easily accessible at any time
Easy to navigate	0,0	0,0	18,4	68,4	13,2	81.6% of respondents agreed that the learning process was more efficient using e-learning Schoology

Table 3. Error in learning

Indicators	Percentage (%)					Information
	STS	TS	N	S	SS	
Few numbers of error detected	0,0	0,0	21,0	71,1	7,9	In the study found an average of 79% which states Schoology can reduce errors in assignments and research
Easy to fix	0,0	2,6	15,8	65,8	15,8	81.6% of respondents agree that Schoology makes it easy to correct assignments and assess student learning outcomes.

This result is also supported by several lessons becoming more efficient and effective in terms of the collection and delivery of learning tasks assisted by Schoology so that they can be beneficial for the overall development of education (Warsito et al., 2019)

Error

The high frequency of errors when using a system identifies the low usability of the system in question. Error avoiding display that does not work. The statement items described in this variable consist of 2 indicators with two statements. Test results on the error variable obtained scores by calculation: It can be concluded in Table 3 that there are 80.3% of respondents to the error rate in the learning management system so that the error rate is well-coded. Students need support for ideas originating from perceptions about competence in self-controlled feedback conditions thwarted by telling them that only performance in a small range of errors is considered auspicious is less

on an anticipation-timing task (Chiviacowsky et al., 2012).

Satisfaction

User satisfaction with the system used indicates that the system is feasible to use to measure the level of Satisfaction in using the application interface. The statement items described in this variable consist of two indicators with three statements. Test results on the satisfaction variable obtained scores with the following calculations: It was concluded in Table 4 that there were 74.6% of respondents comfortable using the Schoology application. Based on the results of the descriptive analysis above, there are four variables of Schoology application usability analysis. It can be determined that the average total percentage of those who agree. Virtual environments created by Schoology involve many forms of media and material that stimulate students' interest in learning and produce higher Satisfaction.

Table 4. Satisfaction

Indicators	Percentage (%)					Information
	STS	TS	N	S	SS	
System pleasant to use	0,0	0,0	26,3	63,2	10,5	There are 73.7% of respondents agree that the Schoology Application is attractive to teachers and students
Comfort to use	0,0	0,0	26,3	63,2	10,5	73.7% of respondents agree that Schoology can attract students to be interactive in the learning process. So it is convenient to use.
Comfort to use	0,0	5,3	18,3	71,1	5,3	In the study, there were 76.4% of respondents agreed Schoology helped teachers and students develop discussion rooms.

The communication channel gap between students and teachers is reduced because of the more relaxed and informal communication (Phungsuk et al., 2017).

The questionnaire and respondent assessment results in Learnability, efficiency, error, and Satisfaction, respectively, by 89.5%, 80.3%, 80.3%, and 74.6%. From these results, it can be categorized that the application of LMS Schoology is perfect. All subsequent data are averaged 81.17%. It can be categorized that the application of LMS Schoology is perfect. All subsequent data are averaged into 81.17%. From these results, it can be categorized that the application of LMS Schoology is excellent to be applied.

CONCLUSION

Based on the assessment results at the time of community service, LMS Schoology has an excellent opportunity to be applied as a supporting technology in teaching and learning activities. Teaching staff in partner schools that support or provide a positive response of 81.17% if Schoology is applied to the learning process. One of them is that learning can be done anywhere and anytime, as well as parental supervision factors that can be carried out using the LMS. However, some teachers have not agreed because students' interest in game technology is higher than learning technology such as Schoology. There is still a need for a deeper level of supervision using communication and information technology, such as smartphones.

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