

## Evaluating E-Learning as a Learning Media

### A Case of Entrepreneurship E-Learning using Schoology as Media

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**Abstract**—The usage of e-learning in higher education is helpful for lecturers to improve the quality of learning process. E-Learning as a Media is a web-based media that provides online digital learning assets such as schoology and multimedia for use in online learning as media. This study aimed to describe and identify the effectiveness of e-learning strategy on entrepreneurship class at economic education program of STKIP PGRI Jombang. Sixteen students were involved in an evaluation study using discrepancy evaluation method. The data was from questionnaires and observation, and they would be analyzed descriptively. The results showed that the implementation of e-learning in STKIP PGRI Jombang corresponded to the standard of quality in all management aspects of e-learning with average percentage tile on 71% for all components, including: design of material, delivery methods of e-learning, learning interaction, and evaluation of e-learning activity. In general, the implementation of e-learning at entrepreneurship class in economic education program of STKIP PGRI Jombang is considered effective to improve the quality of learning entrepreneurship. The lecturer employed schoology as media for e-Learning. It creates virtual learning atmosphere in entrepreneurship class of a higher education. The findings contribute significantly to teach students in a higher education. Based on this study, the lecturers in the digital era should consider the implementing the innovative and challenge class atmosphere through e-learning as a media.

**Keywords**—learning media, e-learning, entrepreneurship

## 1 Introduction

As moving further into the [21<sup>st</sup> century](#), technology is increasingly becoming a part of our everyday lives, including how the teaching and learning process strategies.

Digital literacy has become part of our lives. We easily navigate on the web, searching for articles and videos, and sharing information with our friends. These tasks seem easy, however they are not that easy for everyone. There are still many people for whom the web is a confusing, dark space. Digital skills should be part of

education to ensure that every student, independent from age and background, can equally participate and benefit from the infinite knowledge of the web. Based on its demand on the progress of technology. Technology which is employed in teaching learning process can be full e-learning or blended learning.

Blended learning encompasses both classroom-based and extracurricular educational activities with the use of complementary technologies of traditional and e-learning. In blended learning, the time allotted to work on E learning courses can range from 20% to 80%. In other words The blended learning here is a combination virtual learning and face to face. In virtual learning such as students are given space for expressing idea virtual through Schoology program as well as presenting while it is combined by discussing certain topics by face to face interaction. Blended learning is a combination of face-to-face and virtual learning environment (Marsh, 2012). However, full e-learning (online training): most of the educational process (90-100%) takes place in an electronic environment; the learning content is highly interactive and students regularly communicate with both the teacher and each other.

The lecturer requires to consider an E learning as media for teaching. When educators realized that the conventional form of teaching requires modernization, their efforts led to the emergence and implementation of new methods and forms of teaching, as well as new technologies in education (Pahkomawa, 2015). At this development of innovative of learning, it is E-learning becomes one of the top priorities in college education Many countries have successfully to employ it.

Learning entrepreneurship in advance level with limited time and many subject matters of courses makes students require to consistently improve the quality of education. Learning entrepreneurship in higher education such as in an university is more about practicing rather than theoretical learning in class. Using e-learning as a learning media may function as a complement to improve students' understanding on the subject matters and their learning activities. Jitka ( 2018) emphasized that the current young generation is growing up and socially maturing through new technologies and social networking. Such a development creates differences across generations and makes a significant difference between those who have become familiar with new technologies in a later stage of life. This trend was also reflected by the predominance of the younger generation in the most affected age category by technology development (Kolesárová, 2014).

The usage of technology of information and communication is crucial for improving the quality of learning. The usage of e-learning in higher education is helpful for lecturers to improve the quality of learning process. E-Learning as a Media is a web-based media company that provides online digital learning assets such as video, still images, podcasts, schoology and multimedia for use in online learning programs and industry training. E-learning is one learning models using technology of information and communication . It has several characteristics as the following 1) it has contents relevant to the purposes of learning; 2) it uses an instructional method, such as example display and exercises to improve a learning process; 3) it uses several elements of media such as words and pictures in order to deliver the learning materials; 4) it allows a teacher-centered direct learning (*synchronous e-learning*) or it is designed for

autonomous learning (*asynchronous e-learning*); 5) it constructs students' understanding and skills related to the purposes of learning, both individual and group.

In online learning context, the importance of interaction among students and teacher has been advocated by a number of seminal authors (e.g. Moore, 1989) Kreijns et al. (2002) suggest that social interaction facilitated by computer supported cooperative learning has the capacity to encourage shared understanding, critical thinking and the social construction of knowledge. In a meta analysis of 74 studies comparing examples of distance education and online learning which included and did not include interaction between students, those including interaction between students were found to have a significant positive impact on learning achievement (Bernard et al., 2009). Furthermore, according to Hattie (2008) teachers who have created positive teacher student relationships that are more likely to have the above average effects on student achievement.

Furthermore, it is argued that it pointed to a current pedagogical learning using e-teacher as e-instructional designer, facilitator for students' interaction and as experts in learned materials (Seok, Soonhwa, 2008). The implementation of e-learning is currently easy to conduct by utilizing a Learning Management System that easily to install and manage such as *schoolology*. E learning is as a media for teaching is more effective both time and place because the lecturer and students do not have to in the same physical space together. In this study, ninety percentage is employed in E learning consisting, providing the materials , discussion section between the lecturer and the students, students' tasks , feedback from peers and teachers from the tasks. In these teaching and learning circumstances , building dialogue in schoolology between lecturer and the students can be taught.

This study aimed to describe the standard of quality in implementing e-learning as an effective learning media, identify the effectiveness of constructing e-learning strategy, identify the effectiveness of delivering e-learning, identify the effectiveness

## 2 Method

This study is an evaluation research using *discrepancy* model. Following Stufflebeam, et al. (Stufflebeam, D. L., Madaus, G. F., & Kellaghan, T. 2002) it is to see the level of conformity between the predetermined standard of a program and its actual performance. Standard is a determined criteria, while performance is the result of a program. In this study, the standard of implementation in evaluating e-learning is the standard quality of implementation of e-learning that Universitas Indonesia has developed in a textbook of the quality assurance for implementing e-learning Universitas Indonesia (Widanarko & Hartono ,2017)

This study was conducted at economic education program of STKIP PGRI Jombang, particularly to entrepreneurship class between April and July 2017. Measuring the effectiveness of implementing e-learning on entrepreneurship course was through questionnaires consisting of 18 questions, each of which had certain scores such as: 1 (very bad), 2 (bad), 3 (good), and 4 (very good). 100 lecturers of STKIP PGRI Jombang participated as respondents giving scores for the effectiveness of e-learning in

entrepreneurship class by using an application –*schology*. Furthermore, 16 students also participated in this study by having e-learning based entrepreneurship course. Figure 1 showed the screenshots of students participating e-learning class.

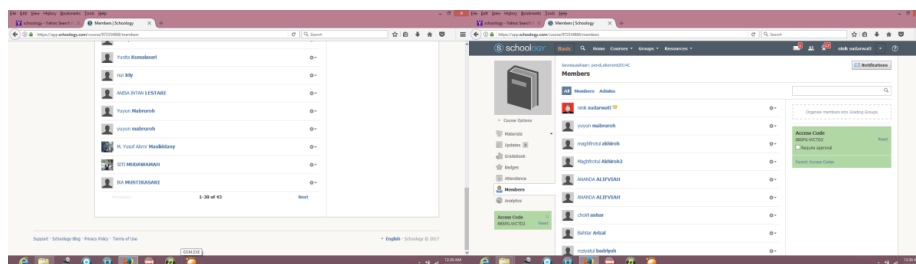


Fig. 1. The Screenshots of students participating e-learning entrepreneurship course

The studied variables included the management of e-learning which involved the learning strategy, the design of materials learned, delivery of material, interaction in learning, and evaluation of e-learning.

The data analysis was descriptive with quantitative approach, in which from the questionnaires, resulted in criteria of effectiveness of implementing e-learning as a learning media. Table 1 presented some criteria determined to describe the data.

Table 1. The Criteria of Assessing the Effectiveness in a Descriptive Analysis

No.	Formulas	Classification
1.	$Mi + 1,5 Sdi \leq M \leq Mi + 3 Sdi$	Very effective
2.	$Mi + 0 Sdi \leq M < Mi + 1,5 Sdi$	Quite effective
3.	$Mi - 1,5 Sdi \leq M < Mi + 0 Sdi$	Ineffective
4.	$Mi - 3 Sdi \leq M < Mi - 3 Sdi$	Very ineffective

Note :

Mi = Ideal mean =  $\frac{1}{2}$  (ideal maximum score + ideal minimum score)

Sdi = Deviation =  $\frac{1}{6}$ ( ideal maximum score + ideal minimum score I)

M = Empirical score

### 3 Result and Discussion

Table 2 shows the inclination of the effectiveness of e-learning in entrepreneurship course based on 100 lecturers of STKIP PGRI Jombang.

Table 2 showed that the implementation of e-learning as a learning media in STKIP PGRI Jombang, particularly to entrepreneurship course was considered quite effective with the inclination percentage of effectiveness at 50%. However, 4 lecturers assessed that this e-learning was ineffective. It was consistent with Bates and Poole (2003) that the social interaction in e-learning and distance education could be classified into three types, including: 1) interaction between students and teacher/instructor making the teaching material (likely a senior research professor); 2) interaction be-

**Table 2.** The Inclination Distribution of the Effectiveness of the Standard Quality of E-Learning Implemented as a Learning Media in STKIP PGRI Jombang

No	Formulas	Frequency	Percentage	Classification
1	$67,5 \leq M \leq 90$	44	44%	Very effective
2.	$45 \leq M < 67,5$	50	50%	Quite effective
3.	$22,5 \leq M < 45$	4	4%	Ineffective
4.	$0 \leq M < 0$	2	2%	Very ineffective
	<b>Total</b>	<b>100</b>	<b>100%</b>	

between students and tutor (likely a contracted instructor) who only acted as mediator between the original material and the students through guidance and assessment; 3) interaction among students (Bates, A. W. & T. Bates, 2015).

According to the definition and function of learning media, it may conclude that a learning media is one external factor that influences students' learning activities. In general, the function of a learning media is to facilitate the interaction between lecturer and students in order to make the learning activity more effective and efficient.

### 3.1 The Attainment of the Standard Quality of E-Learning Strategy in Entrepreneurship Course

The result of the questionnaire distributed to 100 respondents in regard to the assessment of 5 indicators of e-learning was presented on Table 3.

**Table 3.** The Assessment of Indicators of the Standard Quality of E-Learning Strategy

No	Indicators of The Standard Quality of Strategy	Percentage	Category
1	The learning process must have admission from the stake holder	70%	Appropriate
2	The teacher and students must have access on intranet and internet	80%	Very appropriate
3	The teacher must have access on facilities of developing e-learning based activities.	70%	Appropriate
4	Syllabus and teaching plan is a must in designing an e-learning model	76%	Appropriate
5	It is a must to have access on facilities for practicing e-learning activity	70%	Appropriate

The components of e-learning strategy are generally appropriate to the criteria of teaching plan. A recommendation in improving the effectiveness of e-learning-based teaching plan accounted to the primary aspect of implementing e-learning strategy as the starting point of utilizing e-learning as media, and it included: 1) the implementation of e-learning based teaching plan and it began with analyzing the students' needs, 2) the availability of network by preparing the infrastructure and technology, 3) the availability of hardware, software and computer labs as a learning class by utilizing *blended learning* method using e-learning strategy, 4) the lecturer provides a teaching plan and syllabus in relation to the implementation conventional learning and e-learning activities, 5) the lecturer clearly formulates the purposes of learning. It is

consistent with an argument that e-learning is a solution involving contents, technology, and services (Sisco & Ashley, 2010) . In this case, contents refer to courses, curriculum, and knowledge/skill development modules. The intended technology points to the method used for delivering the content, and it includes internet and teleconferencing. Services relate to maintenance, content and technical upgrades to both delivery and contents. It is important to understand those all components in order to clearly comprehend what e-learning is and how it is delivered.

### 3.2 The Attainment of the Standard Quality of Designing Materials for E-Learning

The questionnaires distributed to 100 respondents showed their assessment on materials of e-learning consisting of 5 indicators. Table 4 presented the details as follow.

**Table 4.** The Assessment of Indicators of the Standard Quality in Designing Materials for E-Learning

No	Indicators of the Standard Quality in Designing Materials	Percentage	Category
1	The materials must correspond to the curriculum and the available electronic media	78%	Appropriate
2	The materials are prepared by experts in related fields	75%	Appropriate
3	Designing materials must correspond to the characteristics of e-learning	79%	Appropriate
4	The materials must be available and accessible for students anytime and anywhere.	79%	Appropriate
5	Implementing e-learning must correspond to the ethical codes and applied regulations.	65%	Appropriate

In general, the respondents’ assessment on e-learning materials had been appropriate to the standard quality of e-learning. The components of designing the e-learning materials on its implementation in STKIP PGRI Jombang, particularly to entrepreneurship course, involved the design of an electronic entrepreneurship module uploaded on YouTube for the sake of e-learning activity in order to meet the rule of internet-based learning activity.

### 3.3 The Attainment of the Standard Quality of Delivering E-Learning

The result of the questionnaires distributed to 100 respondents showed the attainment of indicators of the standard quality in delivering e-learning materials, particularly to entrepreneurship course at economic education program of STKIP PGRI Jombang. The results are shown in Table 5.

In general, the components of delivering e-learning materials in STKIP PGRI Jombang, particularly to the entrepreneurship course in economic education program included the learning strategy using multimedia facilities in which the indicators of the standard quality in delivering e-learning materials had been applied within. Noted that the e-learning materials in this entrepreneurship course were considered practical and complete, and they were uploaded on YouTube. Furthermore, the lecturers had

implemented Q&A and discussion methods. Student learning is improved through online peer learning activities aligned with the subject outcomes and actively facilitated by an online teacher. These activities may be conducted synchronously or asynchronously and student participation and learning benefits are highest when they support the completion of assessment tasks. This element supports enhanced learner-learner engagement. It is consistent with Rossenberg (2006) that e-learning used internet-based technology to create a rich learning environment with various instructions, sources of information, and solutions in order to improve individual and organizational performance.

**Table 5.** The Assessment of Indicators of The Standard Quality in Delivering E-Learning Materials

No	Indicators of the Standard Quality in Delivering Materials	Percentage	Category
1	The materials, at least, are available in electronic presentation (e.g., power point)	78%	Appropriate
2	Delivering the materials must correspond to the predetermined mapping program	77%	Appropriate
3	The material must be interesting in part of its layout and contents, and it must be up-to-date and free from any error and fault.	70%	Appropriate
4	Face-to-face meeting (blended learning) is a must	70%	Appropriate
5	It is a must to facilitate students in accessing the learning materials, such as navigation in electronic presentation	60%	Appropriate

### 3.4 The Attainment of the Standard Quality of E-Learning Interaction

The result of the questionnaires distributed to 100 respondents showed the level of assessment of the standard quality of e-learning interaction in STKIP PGRI Jombang, particularly to entrepreneurship course in economic education program. Table 6 showed the details.

**Table 6.** The Indicator Assessment of the Standard Quality of E-Learning Interaction

No.	The Standard Quality of Interaction	Score	Category
1.	The teaching plan is designed to assure the existence of among-students interaction, lecturer-students interaction, and students-material interaction.	70%	Appropriate
2.	The interaction must be conducted both synchronously and asynchronously	70%	Appropriate

In general, the quality of e-learning based interaction on entrepreneurship course at economic education program of STKIP PGRI Jombang was considered appropriate to the standard quality of e-learning. The interaction might occur when the instructor (lecturer), the sources of learning, the learners (students) made interaction to one another. The lecturer could conduct the teaching-learning management by being active in a learning system, including e-learning. Every teaching method should contain the formulation in organizing the materials, the strategy of delivering materials, and the management of activity by considering several factors -such as the learning pur-

poses, the obstacle of learning, the students’ characteristics- in order to make the learning process effective, efficient, and attractive (Mungania, Peni, 2003).

### 3.5 Evaluating the Implementation of E-Learning

Table 7 showed the indicators of evaluation on the lecturers, the students, the contents, the process, the host, the implementation, and the materials.

**Table 7.** The Indicator Assessment of the Standard Quality in Evaluating the Implementation of E-Learning

No.	The Standard Quality of Evaluation	Score	Category
1.	Evaluation is a must toward the teachers, the students, the content (e.g., materials, tasks, and quiz), the process (e.g., the activeness, peer assessment), the host (e.g., the rules, the procedures of registration), the implementation (e.g., the supporting facilities and techniques during the e-learning class), the materials (e.g., the correspondence to the syllabus, understandable, and accessible).	70%	Appropriate

In general, the components of evaluation on the implementation of e-learning for entrepreneurship course at economic education program in STKIP PGRI Jombang showed that the lecturers had assessed and see the students’ activeness in having e-learning activities, and they –the lecturers- provided tasks through e-learning program.

### 3.6 How is the process of e-learning by using schoology as a learning media in entrepreneurship class in Economic Education Department of STKIP PGRI Jombang, Indonesia.

Based on the result of observation on the process of evaluating e-learning by using schoology as a learning media in entrepreneurship class was consisting 90 % online class and 10% in a class. In this study e-learning consisted of providing the materials discussion section between the lecturer and the students, students’ tasks , feedback from peers and teachers from the tasks. The material was about how to communicate and persuade the costumers.

Learning can be done into the following steps:

**Preparation.** In preparation step, the lesson plan must be designed well including the a) instructional objectives b) the material c) teaching technique d) teaching media e) teaching and learning activities

**Implementing.**

*Pre-Activity.* Pre-activity is dealing with brainstorming activity. The lecturer met the students in the class to discuss the procedures of the entrepreneurship class by employing schoology.

*Whilst-Activity.* Whilst-Activity refers to the main activity that divided into:

Pre Task stage in which the lecturer asked the students to create schoology for e-learning as a media. **In e- learning** the students perform the task in small groups



discussion which are posted on certain platform schoology . Then ask them to respond their friends' posting online. There were a class discussion in schoology among the students, their peers and the lecturer. The final task was making dialogue consisting three students. One student acted as a trader and the others were as costumers. The trader had to be able to persuade the customers. The students 's dialogue had to be recorded in video and uploaded in youtube then sent in schoology

*Post-Activity.* The students' performances were commented in schoology by the lecturer and peers. The comment consisted of the strength and weakness of students' performance as their dialogue which uploaded in youtube and sent in schoology

The result of the first observation revealed when the lecturer in class explained about how was the class of entrepreneurship by using schoology and the material was about how the students as role playing model to be a trader to persuade the costumers in order to buy her product. The students had to make a dialogue then recorded in video and uploaded in their schoology .

The result of the second observation revealed when the students discussed with their peers and the lecturer about the material in schoology. The lecturer provided the material and the students responded to the material in discussion. They could asked some questions about the materials to the lecturer or to other peers.

The result of the third observation revealed when the students' dialogue uploaded in schoology linked in youtube were given some comments to other peers and the lecturer. Their comment was about the strength and the weakness on the result of video recorded about their performance how to persuade the customers to buy their product.

Based on the result of three observations , It can be seen that employing e-learning as a learning media has been proved to improve students' learning process in a higher class . Jitka ( 2018) also states that the young generation is growing up and familiar with technologies and social networking. This trend was also reflected by the predominance of the younger generation in the most affected age category by technology development (Kolesárová, 2014).

## 4 Conclusion

Literacy in this day is not complete if a person is not capable of accessing and creating digital information. Therefore it is important to implement digital literacy in education and e Learning. Digital literacy is strongly connected with e Learning and is highly relevant to contemporary educators. As an educator, teachers should try to prepare their students for their life after education. The aim is not only to inspire and convey the necessary knowledge. Moreover teachers should provide to equip their students with the *right tools* for their future careers. Socially, as well as academically, their future calls for technological knowledge and digital skills, as an increasing number of our daily-life activities are executed with web based tools.

While technologies such as E learning instruction and intelligent tutoring provide great promise, unless the challenges that are dealing with implementing them are fully understood and addressed their failure is almost surely guaranteed. To date, there is little evidence that digital literacy can be implemented at scale in a way that improves outcomes for disadvantaged students. The best implementation, E learning is likely to

benefit students differently depending on their personal circumstances and those of their school. For instance, non-native English speakers might benefit from online instruction that allows them to pause and look up unfamiliar words. Rossenberg (2006) that e-learning used may create a rich learning environment with various instructions, sources of information, and solutions in order to improve individual and organizational performance.

The results of analyzing the effectiveness of e-learning as a media in entrepreneurship course at economic education program of STKIP PGRI Jombang showed that: 1) the aspect of designing e-learning was considered quite effective with average percentage tile on 73.2%; 2) the aspect of designing the materials was considered quite effective with average percentage tile on 75.2%; 3) the aspect of delivering e-learning materials was considered quite effective with average percentage tile on 75.2%; 4) the aspect of e-learning interaction was considered quite effective with average percentage tile on 70%; 5) the aspect of evaluating the implementation of e-learning was considered quite effective with average percentage tile on 70%. Overall, the implementation of e-learning in entrepreneurship course at economic education program of STKIP PGRI Jombang was found quite effective for improving the quality of entrepreneurship learning.

In addition, the implementation of e-learning in STKIP PGRI Jombang should have full support from the stakeholders by establishing an institutional policy through *reward* system for lecturers implementing e-learning activities in order to improve their teaching quality. It is also suggested to conduct further researches that investigate the development of e-learning activities on web-based entrepreneurship course in relation to the students' characteristics.

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