The Impact of E-Learning Quality and Students' Self-Efficacy Toward the Satisfaction in the Using of E-Learning

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ABSTRACT

The pandemic of COVID 19 has changed the learning process, from face to face and blended and fully e-learning facilitated by electronic media that can be reached by lecturers and students. They are required to use e-learning so they can do learning process from home or anywhere due to the physical and social distancing imposed by the government. This study examined the quality of e-learning, student's self-efficacy, and satisfaction in using e-learning. It involved 345 students from Management Study Program in Universitas Muhammadiyah Sumatera Utara and the data collection was carried out by distributing questionnaires. The regression analysis was conducted to examine the effect of self efficacy and e-learning quality toward e-learning users' satisfaction. The results showed that there was an effect of self efficacy and e-learning quality toward e-learning users' satisfaction where the theoretical and institutional implications for e-learning in higher education discussed

Keywords: e-learning, e-learning Quality, self-efficacy, students' satisfaction

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INTRODUCTION

COVID-19 pandemic has had a significant impact on all aspects of human life including education aspect. In the field of education, universities force the lecturers and students to do online learning. Since it was started in the middle of semester, many parties were not ready to face and implement it. There are only some universities that provide the facilities for integrated online learning due to the expensive investment costs, unprepared human resources, unsupported internet networks, and so on. While for students, it is hard to do since not all of them are coming from the settled economic background. Certainly, it can be an obstacle for online learning systems, while learning process must go on.

In spite of the internet is no longer new for humans, online learning still a new and strange thing, since there is no face-to-face meeting, so some people get difficult to understand the material, and when the students want to ask questions, they get many problems. E-learning is an integration of technology in the teaching and learning process, used to provide teaching programs for students conducted remotely, without face to face (Luaran et al., 2014; Chatelier & Voicu, 2018; Kumar & Bajpai, 2015), to enhance knowledge and individual performance (Conkova, 2013; Jethro et al., 2012). Learning is delivered with communication technology, referring to various applications and processes designed to deliver lecture material and various other instructions (Luaran et al., 2014; Lee et al., 2009).

E-learning can improve to access the education and training, the quality of teaching and learning and mark the need for tertiary institutions to maintain a competitive advantage in a changing market as students become independent (Lee et al., 2009; Sandybayev, 2020). The main advantage of e-learning is that it allows learning in any place and time (Conkova, 2013; Luaran et al., 2014), collaboration, independent learning, flexibility in setting individual strategies for learning (Lin et al., 2019; Amer et al., 2013; Agariya & Singh, 2012; Thanji & Vasantha, 2018) , while the drawback is the students may be required to buy computers or go to internet cafes to use computers (Luaran et al., 2014). Research showed that the student learning outcomes with e-learning are lower than face-to-face learning process in the medium term. While the qualitative comparison measured by the level of ambiguity, cognitive effort and excitement did not show a significant difference (Galy et al., 2011).

E-Learning changes the nature of lecturer and student interaction, requires high motivation and self-discipline from students, opens new opportunities for creative expression of students, contains great potential for implementation of new ideas and projects, for personal development and implementation of principles of continuing education (Sandybayev, 2020). The ability to work with computers is one of the cognitive activities of students in e-learning, while students work individually (Sandybayev, 2020), and independent learning (Fatahi et al., 2009). The implementation of e-learning learning is not easy. For successful online learning, some several characteristics and skills need to be possessed. They are having a strong academic self-concept, showing fluency in the use of online learning technology, having interpersonal and communication skills, understanding and valuing interaction and collaborative learning, having a locus of control internally, demonstrating independent learning skills, demonstrating the need for affiliation (Dabbagh, 2007).

Meanwhile, interaction as an important characteristic of the educational process, the process of activities and personal exchange between teachers and students, a process that continues to develop from the subject integration activities, including targets, motivations, activities, aspects of the learning process (Dabbagh, 2007; Chow & Shi, 2014; Jethro et al. , 2012; Sandybayev, 2020) . With E-Learning, a teacher turns into a consultant and tutor who helps students to build individual learning trajectories, to teach in gaining knowledge. Students, in turn, collaborate from their role as passive consumers of educational products to be the active participants in the process of creating and gathering new knowledge (Sandybayev, 2020).

Since there are no face-to-face meetings, an obligation of learning independence for students, as well as other obstacles, they often feel dissatisfied with the implementation of e-learning. The learning content is oftenly not easy to understand if it is not explained face-to-face. It does not open opportunities for discussion and the students are not able to organize themselves in the face of e-learning that certainly requires self-awareness compared to if students must enter the classroom to learn. One character of successful students tends to have effective self-regulation characteristics such as self-efficacy and intrinsic goal orientation related to learning outcomes (Thanji & Vasantha, 2018). E-learning self-efficacy is an important factor that influences user satisfaction (Weng et al., 2015; Sun et al., 2007). Self-efficacy gives students confidence that they are able to implement e-learning as well as face-to-face learning. This is very important, because e-learning as learning process that has just been used during the pandemic in Universitas Muhamadiyah Sumatera Utara, causes students to adapt, both to technological devices and in terms of learning independence. Personal characteristics of students need to be considered, such as learning efficacy that influences behavior in receiving e-learning, so that supported systems and improved education are needed to increase learning activities during e-learning (Nakayama et al., 2014). The results of research Galy et al., (2011) found that 30% of students felt that they had learned more in online classes, it was more intellectually challenging, and more difficult, so students' readiness for e-learning become a significant predictor of the satisfaction.

Meanwhile Bismala & Manurung (2021) found there are several factors that need to be improved in e-learning, such as the material presented in e-learning, interaction with lecturers, availability of facilities, and lecturers. On the other hand, Bismala & Manurung (2021) stated the factors that must be maintained include flexibility, assessment in e-learning that is felt to be appropriate, the usefulness of e-learning, and the ability of students to allocate time. Satisfaction in the using of e-learning is also influenced by self-efficacy (Arunachalam, 2019; Lee & Kim, 2009) and self-efficacy of using computers (Alqurashi, 2016) and intention to conduct e-learning (Alqurashi, 2016). Self-efficacy refers to a set of behaviors and practices used including

demonstrating teamwork, expressing sensitivity, managing politics, and dealing with pressure (Bates et al., 2013) explained the interactive relationship between internal forces and external stimuli that influence human behavior (J.-W. Lee & Mendlinger, 2011). Efficacy plays a central role in self-regulation through challenges and expected outcomes, choosing what challenges to undertake, how much effort should be expended in trying, how long to persist in the face of obstacles and failures, and whether failure motivates or discourages (Bandura, 2001). These all indicates the problems and expectations of students related to e-learning.

The intention to use a facility depends on the perception of usefulness. It is determined by the perception of usefulness (where e-learning provides flexibility to students in learning anywhere and anytime) (Punnoose, 2012; Amer et al., 2013; Weng et al., 2015; Liu et al., 2019; Al-Alak & Alnawas, 2011), perceived pleasure (meaning that he likes to use e-learning, so he tends to have a higher intention to use it) (Punnoose, 2012; Amer et al., 2013; Weng et al., 2015; X. Liu et al., 2019; Al-Alak & Alnawas, 2011).

This independence is not yet ready to be faced by students because the learning activities are carried out in class, not anywhere and anytime. Many problems related to the quality of e-learning, student self-efficacy in using e-learning affect student's satisfaction in e-learning as the background in conducting this study.

The general objective of this study is to develop theoretical knowledge with practical implications about the causal relationship between variables relating to e-learning users' satisfaction. The main objective is to investigate the effect of e-learning quality and self-efficacy toward student's satisfaction in using e-learning. Meanwhile, research questions include:

1. Is there an effect of self-efficacy toward students' satisfaction in using e-learning?
2. Is there an influence of the quality of e-learning toward students' satisfaction in using e-learning?
3. Is there an effect of self-efficacy and the quality of e-learning toward students' satisfaction in using e-learning?

RESEARCH METHOD

Research Model

This is an explanatory research that intends to examine the effect of quality of e-learning, student's self-efficacy, and satisfaction in using e-learning.

The hypothesis in this study are:

H1: there is an effect of self-efficacy toward student's satisfaction in using e-learning

H2: there is an effect of quality of e-learning toward student's satisfaction in using e-learning

H3: there is an effect of self-efficacy and quality of e-learning toward student's satisfaction in using e-learning

Participants

The unit of analysis in this study is the students of Management Study Program, Faculty of Economics in Universitas Muhammadiyah Sumatera Utara who have conducted online learning (e-learning). It has been effectively used during COVID 19 pandemic period, that was previously conducted in blended learning, combining the classroom learning with e-learning. The total population was 2,522 students, with a range of ages 17-23 years. The number of samples in this study was determined by the Slovin formula, that is $n = N / (1 + (N \times e^2))$, with a defined margin of error of 5% or 0.05, the number of samples obtained was: 345 people. To obtain 345 samples as respondents to be analyzed further, the researcher sent a google form through several lecturers who teach several courses.

Table 1. *Demographic Characteristics of Respondents*

Demographic characteristics	Number (percentage)		
Gender	Male	69	(20%)
	Female	276	(80%)
Total		345	100%
Age	17	29	(8%)
	18	44	(13%)
	19	81	(23%)
	20	97	(28%)
	21	34	(10%)
	22	25	(7%)
	23	35	(10%)
Total		345	100%

Based on demographic characteristics, the dominant gender of students is female, as many as 276 people (80%) compared to men as 69 people (20%). While for the age of 20 years as 97 people (28%), followed by 19 years (81 people, 23%), 18 years (44 people, 13%), 23 years (35 people, 10%), 21 years (34 people, 10%), 17 years (29 people, 8% 0 and 22 years (25 people, 7%)

Table 2. *Places to Access E-learning*

Places to Access E-learning	Number (percentage)	
Home	113	33%
Friend's house	65	19%
Internet cafes	48	14%
Wifi in the café	79	23%
Others	40	12%
Total	345	100%

The various methods are used by students to access the internet for e-learning purposes, ranging from having a personal internet connection, using existing facilities in public spaces, and several other accesses. Based on the results, mostly students access e-learning from home with a personal internet connection as 1113 people or 33%. While other accesses from friends' houses, internet cafes, internet connections provided by cafes or other sources. It can be understood since the different economic backgrounds among students, so the costs spent for internet connection are also different. It can also be an obstacle in e-learning since the availability of internet connection owned by students allows to the e-learning.

Collection of Data

The data collection in this study was carried out by distributing questionnaires to students as respondents. There were 21 statements related to satisfaction with the using of e-learning (as the dependent variable), self-efficacy and quality of e-learning (as an independent variable) were distributed with a Likert scale of 1 (strongly disagree), 2 (agree), 3 (neutral), 4 (agree) and 5 (totally agree). The dimensions for e-learning satisfaction variable include interaction (communication), comfort, structure (clarity and online instruction provided by the instructor), learning style, and platform, with 8 questions asked. While the self-efficacy variable includes choosing to do more challenging tasks; setting higher goals and sticking to their goals; reshape the action by thinking about it, with 8 questions. Then dimensions of e-learning quality consist of e-learning system quality, e-learning instructor and material quality, as well as administrative services and e-learning support quality with 5 questions.

Data Analysis

The quantitative data collected was processed with the help of IBM SPSS Statistics 24 by using the multiple regression analysis to test the effect of e-learning quality, student self-efficacy toward the satisfaction in using e-learning.

Validity and Credibility

The validity exploits how well the constructs of ideas theoretically represented in the instrument

(questionnaire) (Bolarinwa, 2015). The validity test results from all research instruments are shown in the following table:

Table 3. *Validity Test*

	Self-efficacy	e-learning Quality	The satisfaction of e-learning users
Factor 1 Self-efficacy			
1. I like the variety of tasks given by the lecturer	0,639		
2. I like challenging assignments	0,697		
3. The more tasks I have, the more advanced I am in the subjects	0,521		
4. I have to get the highest grade in the class	0,624		
5. I like it when my friends ask me about assignments	0,718		
6. Assignments given in online learning can be done according to students' abilities	0,584		
7. Gather assignments before the deadline	0,589		
8. I am looking for other learning resources voluntarily	0,439		
Factor 2 E-learning Quality			
9. Lecturers provide quality material through online learning		0,449	
10. I can understand online learning materials that are given easily without having to be explained		0,691	
11. In online learning, lecturers are willing to provide the information they need personally		0,497	
12. Assessment in online learning is fair in my opinion		0,732	
13. Lecturers provide active interaction in online learning		0,412	
Factor 3 E-learning user satisfaction			
14. The teacher is willing to spend more time interacting with students at any time			0,492
15. The teacher wants to listen to students' complaints about the lesson			0,490
16. I am comfortable with e-learning system			0,635
17. The teacher provides instructions that can be easily understood as a guide to working on the problems			0,638
18. The teacher allows students to do whatever form the assignment is given			0,729
19. I am free to learn in a way that is easy for me to apply			0,611
20. E-learning makes it easy for me to learn			0,722
21. I am satisfied with e-learning learning			0,699

The reliability measures how far the questionnaires, tests, observations, or measurement procedures are able to produce the same results in repeated trials (Bolarinwa, 2015; Koonce & Kelly, 2014). Cronbach's alpha is recognized as an estimate of the consistency of the internal reliability of test values (Koonce & Kelly, 2014). A good construct has a conceptual basis that is translated through clear operational definitions that involve measurable indicators (Garson, 2016)

Table 4. *Reliability Test*

Variable	Reliability
X1 Self Efficacy	0,854
X2 Quality of E-learning	0,779
Y Students' Satisfaction	0,872

FINDINGS

Testing was conducted to answer the research questions raised. The results of regression analysis are shown in the table below.

Table 5. *Regression Analysis*

Hypothesis	t value	F	Sig.	Decision
H1: SE →e-learning satisfaction	15.431		.000	Accepted
H2: e-learning quality → e-learning satisfaction	5.974		.000	Accepted
H3: SE and e-learning quality → e-learning satisfaction		259.149	.000[b]	Accepted

Sig value from self-efficacy on e-learning satisfaction of .000 and t-value of 15.431 shows that the hypothesis was accepted, means that self-efficacy significantly affects e-learning user satisfaction. Sig value from the quality of e-learning toward e-learning satisfaction of .000 and t-value of 5.974 indicates that the hypothesis was accepted, means that the quality of e-learning significantly influences the satisfaction of e-learning users. While the value of F is 259.149, with sig. equal to 000[b] means that the hypothesis was accepted, there is an effect of self-efficacy and e-learning quality toward e-learning user satisfaction.

Meanwhile, the value of R Square is 0.602, with Std. An error of the Estimate is 2.357, it represents the effect given by self-efficacy and e-learning quality was 60.2%. The rest given by other factors were not examined.

Table 7. *Correlation Between Variables*

Variable name	1	2	3
Self-efficacy	1		
Quality e-learning	.532**	1	
User Satisfaction	.749**	.571**	1

**. Correlation is significant at the 0.01 level (2-tailed).

DISCUSSION AND CONCLUSION

The purpose of this study is to examine the relationship between self-efficacy, e-learning quality, and e-learning users' satisfaction. The results showed that all proposed hypotheses were accepted significantly. It proves that self-efficacy and e-learning quality play an important role in creating e-learning users' satisfaction.

The qualified e-learning will positively affect student's satisfaction. The whole quality of e-learning is explained by the quality of system, e-learning instructor, and the quality of material, administration, and service support (Pham et al., 2019). While Cole et al., (2014) found that satisfaction with e-learning was influenced by comfort, learning structure (clarity), instructor, positive interaction, and communication. The instructor plays a very important role since he/she provides time to interact positively and communicate with students. The sophisticated technology facilitates this interaction and communication process. Interaction with other students provides additional support, forms a learning community and it can help broaden their understanding of the material being taught. Interaction with other students contributes to the feeling in learning community and provides additional support for students to broaden their understanding of the material (Cole et al., 2014)

The universities must pay more attention to the quality of e-learning systems. In the e-learning environment, learning is achieved by the interaction of students and e-learning systems, so the universities can provide sites for e-learning, therefore the quality of e-learning systems can be considered as the quality of e-learning websites and it relates to hardware capabilities. The software is used to meet teaching and learning needs online (Pham et al., 2019). The problems arise when students access e-learning from anywhere, in fact, not all places can provide adequate networks to access e-learning. Meanwhile, the process approach to e-learning success is a continuously improvement process that seeks for increasing the dimensions of success including system quality, information quality, service quality, usage, user satisfaction, and benefits in three stages: system design, process, and results (Lee-Post, 2009).

The perceived self-efficacy is a significant and positive predictor of e-learning intention and online learning satisfaction. Students who succeed in online classes find that the online learning system is easier to

use and more useful. This finding supports that self-efficacy of e-learning plays an important role when one has to make choices and behave. Therefore, it is recommended that online learning system organizers should provide adequate training and information about online learning systems for students to build skills and increase their confidence in online classes. The findings indicated that as long as students have skills and knowledge to use e-learning systems, they consider online education to be a useful learning format and an easy way of learning (J.-W. Lee & Mendlinger, 2011).

In e-learning, the role of students is as great as teacher, since they must provide all the ability to understand the knowledge provided through e-modules and various other media, that does not allow the direct interaction and communication. The meaning of the message conveyed is oftenly not understood implicitly. By using e-learning, students tend to be more confident with their typing skills, more comfortable with written communication than in class face to face. Those who are based on campus do not agree that online learning has the same quality as classroom learning on campus (Galy et al., 2011)

The ability to use computers and other electronic devices that support e-learning is absolutely a must-have things for students. As mentioned by Bandura (2001) that efficacy influences a person's mind to increase or weaken themselves, whatever action they choose; the goals they set for themselves and their commitment; how much effort they make; expected results; how long they last in the face of obstacles; their resistance to adversity; how much stress and depression they experience in overcoming the burdens of environmental demands; and realizes the achievements. Self-efficacy of students is how they respond to e-learning, whether it will be a success factor or an obstacle in learning activities, since there are many obstacles both originating from within and outside of students themselves.

Theoretical implications

The regression results supported that self-efficacy and the quality of e-learning affect student satisfaction in using e-learning. The study proved that self-efficacy variable with dimensions chooses to do more challenging tasks; set higher goals and stick to their goals; reshape actions by thinking about it, and e-learning system quality variables (with e-learning instructor dimensions and material quality, and administrative services and e-learning support quality) can increase the students' satisfaction in using e-learning (with dimensions including interactions (communication), comfort, structure (clarity and online instructions provided by the instructor), learning style and platform.

It showed that to provide satisfaction in the use of e-learning, universities must be able to provide several things to support the quality of e-learning. As e-learning users, students and lecturers have an equal role, so lecturers must be able to grow and improve students' self-efficacy in conducting e-learning. E-learning is not easy to do since there is no face to face communication, that is easier to interact and communicate directly.

There are two opinions about learning, both face-to-face and e-learning, where student acceptance differs between the two. Some students believe that online learning systems are easier to use and more useful, and trust their abilities in learning to use e-learning (J.-W. Lee & Mendlinger, 2011), it illustrates that they have self-efficacy. On the other hand, it is stated that there are psychological variables that influence students' success in e-learning, namely perceived self-efficacy (Yavuzalp & Bahcivan, 2020). Then the students' self-efficacy must be grown and improved, to be able to accept this e-learning system voluntarily, because the obstacles are often encountered in e-learning.

Institutional implications

The quality of e-learning and self-efficacy have a significant influence on e-learning users' satisfaction. The importance of e-learning quality and self-efficacy in providing modules accompanied by assignments then the universities should be able to foster and enhance e-learning. It is very important since one of the university's responsibility is to provide and encourage lecturers to provide material, effectively deliver learning to students. The effectiveness of e-learning can be known from the results of student achievement and student satisfaction.

Limitations and future research

There are some limitations in this study, one of them is the limited sample from only one study program, so that it could not assess the whole quality of e-learning, so the interpretation and generalization obtained is very limited. For the next study, it is expected to be able to collect data from all faculties, as well as from several universities, so the students can assess how e-learning is implemented. Another thing is the limitations of dimensions examined from each variable; then in the future, all dimensions will be included in the variables to be examined. Further studies also needed to assess the extent of lecturer's self-efficacy, not only the student's self-efficacy. Interaction and collaboration that exists between students and lecturers need to be explored in more depth so the intentions can be identified to continue by using e-learning in the future. Since the students are accustomed to face-to-face learning, students and lecturers oftenly have difficulty in e-learning process. A better understanding of students' attitudes towards offline learning and e-learning can help to improve learning motivation, academic achievement and other soft skills arising from independent learning. The results of this study can be considered as a reference in practice, given the confirmation of variables that affect student's satisfaction in using e-learning. It is hoped that for implementation of e-learning, the university not only prepares the quality of the system but also pays attention to aspects of students as those who will receive the e-learning process

This study proved that the predictors of e-learning users' satisfaction consist of self-efficacy and the quality of e-learning itself. It proved that the self-efficacy variable (with dimensions of choosing to do more challenging tasks; setting higher goals and sticking to their goals; reshaping actions by thinking about it) and e-learning system quality variables (with e-instructor dimensions learning and material quality, as well as administrative services and the quality of e-learning support) can improve the students' satisfaction in using e-learning (with dimensions including interaction (communication), comfort, structure (clarity and online instructions provided by the instructor), learning styles and the platform.

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