Analyzing the Effectiveness of Online Learning from Students' Perspective

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Article History ***Article Submission*** 29 September 2022 ***Revised Submission*** 16 November 2022 ***Article Accepted*** 27 November 2022	**Abstract** The COVID-19 epidemic has affected on the educational aspect and environment, one of which is the shift from face-to-face instruction to online instruction. This situation attracted us to the question of how useful online education is amid the COVID-19 pandemic. In this study, the effectiveness of e-learning and student efforts during the COVID-19 pandemic were used to gauge the learning satisfaction of the students of Telkom University, particularly the students of Business Administration department. The kind of research is descriptive quantitative, with path analysis as a data analysis technique. We then distributed an online questionnaire as a way to gather primary data from the respondents. The respondents of this study consisted of 100 Business Administration students at Telkom University, especially the one who have experienced online learning situations. The outcomes of the data analysis demonstrate that both student initiatives and the efficacy of e-learning have a substantial impact on learning satisfaction. **Keywords**: Student initiatives; COVID-19; Online learning; Learning satisfaction

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Introduction

Since 2020, the COVID-19 pandemic has spread over the world. According to the World Health Organization (WHO), it spreads through particles that come out of the mouth and nose of people who have the COVID-19 virus (Ministry of Health of the Republic of Indonesia, 2020). The government has developed a social distance policy to limit the spread of the COVID-19 virus as a result of the virus' quick spread. Activities like studying at school or university must be done online to prohibit direct meetings (Elisa et al., 2022). This promotes autonomous study at home, where learning strategies must be used to ensure that students still develop the necessary learning competencies. We had to immediately adapt as a result of the change in learning techniques from face-to-face in the classroom to online-based learning (distance learning).

Since learning can still be done anywhere with the use of technology that is connected to the internet, online learning is seen as a solution for educational activities. Online education is thought to make it easier for educators and students who are geographically apart to contact, connect, and communicate, according to Onyema (Firman et al., 2021). Learners can be contacted and engaged with at any time and place by educators. Online instruction can take the place of in-person instruction in the classroom while also enhancing digital literacy in keeping with the advancement of current educational trends (Kaewsaeng-On et al., 2022).

Nearly all educational levels currently use online learning techniques to break the COVID-19 virus's chain of transmission. One-to-one and one-to-many interactions are possible, there is an interactive element, and both synchronous and asynchronous communications are possible when using the internet for online learning activities. Online learning is an open educational system that imparts knowledge through activities and interactions while using the internet, a network-based technology, as a learning tool. According to research by Dabbagh & Bannan-Ritland (2005) and Muali et al. (2018), it is believed that the usage of technology will boost students' interest in learning because they may utilize it to create a fresher, more contemporary learning environment. E-learning can have advantages including increasing student retention of the information presented, increasing student engagement, raising the caliber of the educational content, and enhancing students' capacity for autonomous learning so that they are forced to investigate the information further (Pradana & Amir, 2016).

Students need to be motivated to learn because they want to believe that the fund they spend on education will be used to further their ambitions. They want to feel acknowledged as capable students and want their education to be relevant to their experiences. When these standards are reached, students are more likely to feel inspired and invested in their education (Fakhri et al., 2021). Successful students have certain traits, such as the ability to manage their time and be self-motivated, according to online research that is not just focused on adult learners (Pradana & Amir, 2016). Self-study, particularly consistent study according to the learning plan, timely completion of assignments, regular access to learning resources, and reading key course materials, is the best predictor of learning success. Pupils' behavior during learning activities can be used to determine their level of enthusiasm for learning; highly motivated students will work diligently while taking part in learning activities. (Smith et al., 2017; Bednar, 2018; Putrielis, 2017).

According to Dunwill (2016), when it comes to teaching, online learning essentially follows the same rules as in-person instruction. The introduction of topics and skills to be learned, the direction of students as they go through the learning process, and the provision of autonomous activities that students must complete are parallels between the two. In addition, Dunwill said that at least six (6) elements must be taken into account: learner-teacher contact, collaboration among students, an active learning environment, prompt feedback, attainable learning goals, and appreciation of differences. Online education is classified into two categories. The first is the wrap-around paradigm, which relies on learning resources that are both online and offline and mostly unaltered. The course has requirements that include group discussions, online exams, and collaborative learning exercises. The second approach is called The Integrated Model, and it is quite similar to courses that are frequently provided through system management and other forms of online learning (Dhull & Sakshi, 2017).

Technology has enabled the development of a number of programs that can facilitate online learning, like the Zoom program and Google Meet. Learning applications are a recent innovation in educational technology that provides users with complete control over how to use them (Susanto & Akmal, 2018). The term "video conferencing" refers to a meeting in which participants can still speak and see each other when they are in different places (Sidpra et al., 2020). Because they can be downloaded for free on IOS, Windows, Android, and other operating systems, many colleges use video conferencing-based learning tools like the Zoom program and Google Meet to support the deployment of online learning. The app's ability to combine video conferencing, chats, and online meetings to enable its users to virtually meet and communicate with one another is assessed as being of good quality. Additionally, Zoom Meeting and Google Meet offer many auxiliary functions including the share screen function, which enables lecturers to show slides with instructional materials. Additionally, there is a recording tool that allows the users to capture the activities and save them.

Purpose of the Study

This study intends to determine the impact of online learning on students majoring in business administration at Telkom University by employing learning tools like Zoom and Google Meet. It is envisaged that the research will give an unbiased image of what students actually feel when engaging in online learning and will serve as a tool for evaluation for various parties so that online learning can be improved even more. After the introduction part, the rest of the paper is organized as: section II discusses the literature review, then section III about methodology, section IV about the result and discussion, and the last part is the conclusion.

Research Hypotheses

Hypothesis 1 (H1): E-learning satisfaction has a positive impact on learning satisfaction

Hypothesis 1 (H2): Student initiative has a positive impact on learning satisfaction

Hypothesis 3 (H3): E-learning effectiveness and student initiative have a positive impact on learning satisfaction

Literature Review

The following variables are used to assess the efficiency of e-learning in online instruction at Telkom University:

E-learning Effectiveness

Effectiveness is derived from the term effective, which implies succeeding in attaining the anticipated aims. Efficiency and effectiveness are closely related, can be viewed from different perspectives, and can be measured in different ways (Setiani, 2020). The efficiency of online learning hinges on how well each teacher can provide their lessons. Additionally, learning materials or content must be able to be packaged in simple language so that every student may comprehend the information offered effectively (Sandiwarno, 2016). The degree to which learning goals have been accomplished is referred to as the efficacy of the learning process. The institution can improve the design of online courses thanks to the knowledge gleaned from the analysis of learning efficacy. Learning outcomes, learning attitudes, and satisfaction are the most widely used metrics for gauging the success of learning in higher education, according to an integrative assessment of 761 papers (Schack & Foundation, 2015).

Student Initiative

According to the student initiative, learning attitudes are demonstrated by proactive, self-initiated, and consistent behaviors that are used to accomplish learning goals. Student efforts and academic success are closely associated. According to Wolff et al., active learning results in a deeper understanding of the learning content and better information acquisition. Learning effectiveness and efficiency are positively correlated with self-learning management (Broadbent, 2017; Rashid & Asghar, 2016). In other words, students with higher levels of self-learning management perform better academically than students with lower levels of self-learning management (Huang & Yu, 2019).

Learning satisfaction

When expectations, wants, and wishes are met, one feels satisfied (Aktan, 2010). The service in question is one that students experience in terms of learning satisfaction. Thus, a feeling of satisfaction that results from the fulfillment of the goals of learning activities might be described as learning satisfaction. This is also in line with Ko's (2012) assertion that the degree of student pleasure with the learning process and the outcomes of that process is known as learning satisfaction.

The success of the teaching and learning process by teachers and institutions is supported by student satisfaction. The mismatch between student expectations and reality is just one of many factors that might make students unhappy with their education. If the skills, abilities, and expectations they encounter during the learning and teaching process are consistent with expectations, students will feel more satisfied; conversely, if there is a mismatch between learning ability, skills, and expectations, students will feel dissatisfied (Pradana & Amir, 2016).

Services, teaching and learning procedures, and learning environments can all be considered factors that influence student learning satisfaction (. It is envisaged that the school will be able to grow effectively by paying attention to student happiness. The student's contentment will be evident from his commitment to the school and his ability to produce quality work (Karyanto et al., 2021).

How students feel about their educational experience is reflected in their pleasure with it. This has to do with the general effectiveness of online learning (Pradana & Amir, 2016). Higher levels of persistence, better commitment to learning, and reduced dropout rates are all factors that contribute to the success of university programs. Additionally, student satisfaction enables the university to pinpoint areas that need to be improved and helps the creation of particular online learning methodologies. Additionally, student satisfaction is a crucial metric for learning outcomes and student-related programs. Additionally, it has been asserted that student actions, such as self-study management, are favorably associated with satisfaction with online learning (Tsang et al., 2021).

Methodology

In this study, a quantitative strategy is combined with a descriptive methodology. The quantitative method is also known as the positivistic method because it is based on the positivist school of thought, is used to conduct research on a particular population or sample, uses research instruments to collect data, and uses quantitative and statistical analysis to test predetermined hypotheses (Sugiyono, 2013).

The population of this study consisted of all currently enrolled S1 (undergraduate program) Business Administration students at Telkom University from the classes of 2018, 2019, 2020, and 2021, with 100 respondents serving as the sample size. The research's results came from an online survey with five questions that represented the varying efficacy of e-learning (X_1). There are 3 questions in the student initiative variable (X_2) and 7 in the learner satisfaction variable (Y_1). Then, this issue is presented as a Likert scale with 5 possible answers: strongly disagree, disagree, agree, uncertain, and highly agree. At Telkom University, 100 students majoring in S1 Business Administration were given this questionnaire. The questionnaire's responses were then descriptively examined.

The following table 1 provides a summary of the respondents to this study. Table 1 showed our respondents, who are Business Administration students at Telkom University from the classes of 2018, 2019, 2020, and 2021, with 100 respondents serving as the sample size.

Table 1. General Information on Respondents' Demographics

Characteristic	Sum	Percent
Gender		
Male	45	45%

Female	55	55%
Year of admittance		
2018	15	15%
2019	69	69%
2020	15	15%
2021	1	1%

Source. Authors' own elaboration

Stats Analysis

The software SmartPLS version 3.3.3 was utilized in this study to perform a preliminary assessment and analysis of the constructs' reliability and validity. We tested three variables that have a favorable influence on the adoption of instructional technologies in Indonesian educational institutions, particularly Telkom University.

Results

This study used the help of SmartPLS software with Partial Least Squares Path Modeling (PLS-SEM). According to Fornell and Bookstein in Ghozali & Latan (2015:19) PLS-SEM aims to test the predictive relationship between constructs by looking at whether there is a relationship or influence between those constructions. There are two stages and evaluating the measurement model, including the measurement model (outer model) and the structural model (inner model). The purpose of this two-stage evaluation of the measurement model is intended to assess the validity and reliability of a model (Sugiyono, 2013).

Model Testing (Outer Model)

There are three criteria in assessing the outer model using SmartPLS software, including convergent validity which can be seen from the value of the loading factor and AVE, discriminant validity which can be seen from the value of the AVE square root and the correlation between laten constructs and reliability tests can be seen from the value of composite reliability and Cronbach's alpha.

Convergent validity

The convergent validity test is performed by looking at the value of the loading factor and compared with the rule of thumb (>0.60) then looking at the AVE value and compared with the rule of thumb (>0.50). (Hair et al., 2019). The loading factor value in the first model does not meet the convergent validity standard because the value is below 0.5. Thus, the model modification was carried out twice by removing the indicator whose loading factor value was below 0.5. The related values can be seen in table 2 and table 3.

Table 2. First Model Evaluation

Variable	Factor Loading
Effectiveness of E-Learning	
X1.1	0.619
X1.2	0.630
X1.3	0.806
X1.4	0.820
X1.5	0.451
Student Initiatives	
X2.1	0.610
X2.2	0.791

X2.3	0.855
Learning Satisfaction	
Y1.1	0.783
Y1.2	0.733
Y1.3	0.781
Y1.4	0.760
Y1.5	0.743
Y1.6	0.743
Y1.7	0.745

Source. Authors' own elaboration

Table 3. Second Model

Variable	Factor Loading
Effectiveness of E-Learning	
X1.1	0.630
X1.2	0.650
X1.3	0.845
X1.4	0.826
Student Initiatives	
X2.1	0.617
X2.2	0.785
X2.3	0.856
Learning Satisfaction	
Y1.1	0.782
Y1.2	0.727
Y1.3	0.787
Y1.4	0.768
Y1.5	0.736
Y1.6	0.740
Y1.7	0.745

Source: Data Processing with Structural Equation Modeling PLS

Discriminant Validity

The discriminant validity test was carried out by looking at the value of the AVE square root and the correlation between the latent constructs. With the rule of thumb of the AVE square root, we analyzed the correlation between the latent constructs (Hair et al, 2019). The result can be seen in table 4.

Table 4. Latent Variable Correlation, AVE and AVE Square Root Values

	Effectiveness of E-Learning	Student Initiatives	Learning Satisfaction	Ave	AVE Square Root
Effectiveness of E-Learning (X1)	1.000	0.505	0.552	0.554	0.744
Student Initiatives (X2)	0.505	1.000	0.479	0.576	0.759
Learning Satisfaction (Y1)	0.552	0.479	1.000	0.571	0.756

Source. Data Processing with Structural Equation Modeling PLS

The correlation value of e-learning effectiveness to student initiatives was 0.505 and the

correlation between the effectiveness of e-learning to learning satisfaction of 0.552 was smaller than the AVE root value of the latent variable of e-learning effectiveness of 0.744. This also occurs in the latent variables of student initiative and learning satisfaction where the value of the latent intervariable correlation is smaller than the AVE root value for each latent variable. It can be concluded that all three constructs are valid.

Reliability Test

Reliability test to prove the accuracy, consistency, and accuracy of the instrument in measuring constructs. Reliability tests were carried out by looking at the value of composite reliability and the value of Cronbachs' alpha (>0.60) for exploratory research (Hair, et al., 2019). The result can be seen in table 5.

Table 5. Values of Cronbach's Alpha and Composite Reliability

	Cronbach's Alpha	**Composite Reliability**
Effectiveness of E-Learning	0.748	0.830
Student Initiatives	0.618	0.800
Learning Satisfaction	0.876	0.903

Source: Data Processing with Structural Equation Modeling PLS

The values of Cronbach's alpha and composite reliability of each indicator are above 0.6. Therefore, it can be concluded that the overall research variables are declared reliable.

Structural Model Testing (Inner Model)

Inner model testing was carried out using R-Square for dependent constructs and significance values (t-value 1.96 with a significant level of 5%, Figure 1).
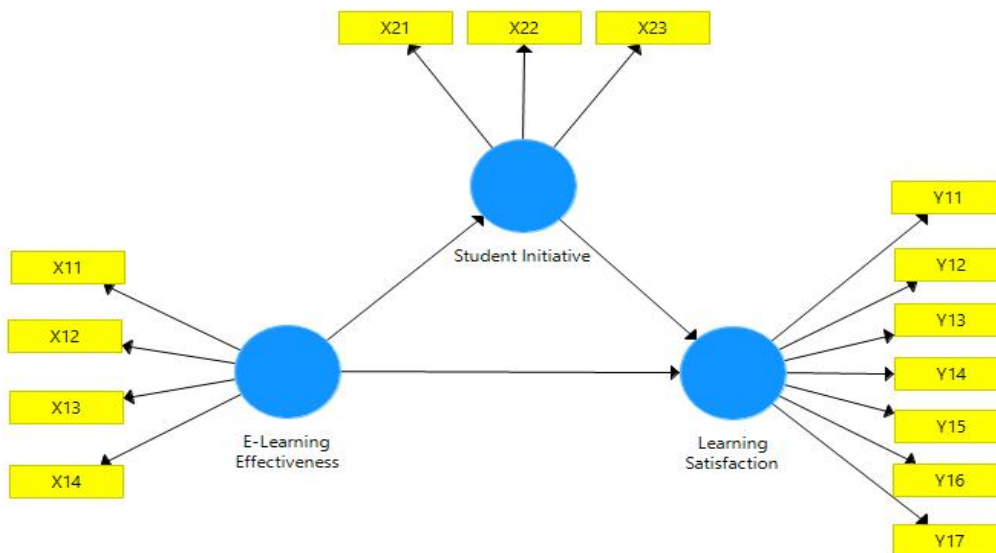

Figure 1. Research model and the result of path analysis

R-Square

R-Square's assessment aims to measure the degree of variation in the change of independent variables to dependent variables (Hair et al., 2019). Rule of thumb values for R-Square, namely 0.75, 0.50, and 0.25 indicate strong, medium, and weak models (Hair et al., 2019). The R-Square

values can be seen in table 6.

Table 6. R-Square

	R-Square
Effectiveness of E-Learning	
Student Initiatives	0.255
Learning Satisfaction	0.358

Source: Data Processing with Structural Equation Modeling PLS

Conclusions from the data above:

1. The Effectiveness Variable of E-Learning by Student Initiatives was 0.255 or 25.5% (weak). While the rest are influenced by other factors not studied further.

2. The Effectiveness Variable of E-Learning is influenced by Learning Satisfaction of 0.358 or 35.8% (weak). While the rest are influenced by other factors not studied further.

Hypothesis Testing

According to Hair et al. (2019), the significance of the hypothesis is seen from the path coefficients table the magnitude of the calculated t value < t of table 1.96 (table 7).

Table 7. Hypothesis Testing of the Path Coefficient (Mean, STDEV, T-Values)

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Effectiveness of E-Learning -> Learning Satisfaction	0.416	0.436	0.086	4.834	0.000
Student Initiative -> Learning Satisfaction	0.269	0.270	0.102	2.643	0.008
Effectiveness of E-Learning -> Student Initiatives -> Learning Satisfaction	0.136	0.138	0.051	2.637	0.009

Source: Data Processing with Structural Equation Modeling PLS

Discussion

Based on the table above it can be concluded that:

1. The effectiveness of E-Learning has a significant and positive effect on Learning Satisfaction

2. Student Initiatives have a significant and positive effect on learning satisfaction

3. The effectiveness of E-Learning and Student Initiatives has a significant effect on learning satisfaction

The Relationship between E-Learning Effectiveness and Learning Satisfaction

The test results showed that the relationship between E-Learning Effectiveness (X1) and Learning Satisfaction (Y1) showed significant values. The effect between X1 and Y1 has a t-statistical value of 4.783 while the t-table value is 1.96 with a significant level of 0.05. The

original sample value was positive, which was 0.416, the results showed that the effectiveness of e-learning (X1) had a significant and positive effect on learning satisfaction (Y1). So it can be concluded that hypothesis 1 is accepted. This is in line with a survey conducted by Sidpra et al. (2020) of 50 students and lecturers showing that 92% of respondents have used video conferencing-based e-learning for learning media and 88% of them expressed satisfaction with learning using the service.

The Relationship between Student Initiative and Learning Satisfaction

The test results showed that the relationship between Student Initiative (X2) and Learning Satisfaction (Y1) showed significant value. The T-statistical value shows the number 2.643 greater than the t-table value of 1.96. The original sample value of 0.269 indicates that student initiative (X2) has a significant and positive effect on learning satisfaction (Y1). This shows that hypothesis 2 is accepted.

The Relationship of E-Learning Effectiveness and Student Initiatives with Learning Satisfaction.

The test results showed that the relationship between E-Learning (X1), Student Initiative (X2), and Learning Satisfaction (Y1) showed significant results. With a T-statistical value of 2,637 greater than 1.96 (t-table). The original sample value is positive with a value of 0.136. These results show that the effectiveness of e-learning (X1) and student initiative (X2) has a significant and positive effect on learning satisfaction (Y1) this means that hypothesis 3 is accepted.

Limitation

This study demonstrates the efficiency of online education during the COVID-19 epidemic, however, there are several restrictions that need to be taken into account. As a result, it only depicts the environment rather not the environment as a whole. First, this research mainly focuses on analyzing the efficiency of online learning in a specific context, namely active students of S1 Business Administration at Telkom University. Second, the study's objective measurements of student initiative and learning satisfaction are focused on the success of online learning, thus the findings must be carefully predicable in different contexts. Thirdly, because data were obtained before the exam's conclusion, this study did not take into account other variables such as the outcome of online learning. Only subjective satisfaction with completing learning objectives was examined in this study.

Conclusion

The COVID-19 epidemic has altered the educational landscape and fueled the growth of online education. The advantages of the growth of online learning have several drawbacks as well, which promotes research on its efficacy. In light of the COVID-19 epidemic, this study attempts to evaluate the efficiency of online instruction and how it affects students' initiative and learning satisfaction. We believe that our research model incorporating student initiative variable distinguished us from similar studies.

The effectiveness of online learning and learning satisfaction are positively correlated, according to the data that have been gathered and examined. Indicators of student-related programs and learning outcomes include student satisfaction. Satisfaction with learning is also positively impacted by student activities. Additionally, a big part of learning pleasure is influenced by how well online learning and student initiatives work. The findings are consistent with the study by Tsang et al. (2021) which found a strong correlation between student initiative and satisfaction. Student initiative suggests that pupils are motivated to learn without being instructed to. This study finds the urgency to encourage student initiative by having them consider their skills, attitudes, and overall performance in college. Due to the attainment of excellent learning outcomes as positive reinforcement to promote positive learning behaviors and pique student interest in learning, perceived learning outcomes have a substantial impact on student initiative. For teachers, students, and institutions that require it, these results can also guide how to enhance online education. To ensure the continuity of education, institutions

should be able to use this opportunity to assess how successfully they are adopting remote learning.

Recommendation

Unpredictable changes in the situation such as the emergence of the COVID-19 virus make us have to adapt them quickly as these forces change in the world of education to keep it going. This study reviews the effectiveness of online learning that focuses on student initiatives and the learning satisfaction of S1 Business Administration students at Telkom University. The results of this study show that the effectiveness of online learning and student initiatives have a positive and significant effect on learning satisfaction. With these results, it can help several parties such as:

a.Academic

This research is expected to be useful for students and teachers as reference material to increase learning satisfaction in online learning and ensure effectiveness in the implementation of online learning.

b.Managerial

The results of this research are expected to be useful as a contribution of thoughts and information for Telkom University, especially the S1 Business Administration study program. In addition, it can help the university in developing the sustainability of online learning.

Further Research

The future study should broaden its focus by including more respondents, for example, in order to create data that more fully describes the occurrence. This is because the current research was limited in its scope. The efficiency of online learning can also be evaluated based on factors such as learning motivation, allowing researchers to compare the motivation of men and women learners. Another suggestion is to be able to qualitatively examine student initiatives and learning satisfaction in this research to determine what aspects of the teaching staff's learning should be enhanced in online learning.

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Attachment: Research Questionnaire

No.	Question	Strongly Disagree (1)	Disagree (2)	Hesitate (3)	Agree (4)	Strongly Agree (5)
1	Learning objectives and online classroom procedures are generally clearly communicated					
2	The learning structure is generally well organized into rational and understandable					
3	Online classroom learning materials are generally interesting and arouse my desire to learn					
4	In general, online learning makes it easier for me to understand the material well					
5	The student assessment component during online learning in general consists of assignments, projects, and exams					
6	I made more statements to my lecturers during online classes than during face-to-face classes					
7	I spend more time self-studying in online classes than face-to-face classes					
8	I spend more time reflecting on what I've learned during the online class period than during face-to-face classes					
9	Overall, I am very satisfied with online classes during the Covid-19 pandemic					
10	Overall, online learning during the Covid-19 pandemic went smoothly					
11	Overall, I feel that online learning during the Covid-19 pandemic has been very effective					
12	Overall, I easily understood the learning materials during the online class greetings the Covid-19 pandemic					
13	Overall, the information submitted by the lecturer is complete and correct					
14	Overall, communication between students and lecturers is well established during online learning					
15	Overall, I feel comfortable during the online learning process					