Online Learning Based on the Borneo E-Learning Application (A Study of Student Satisfaction Analysis in the Use of the BEL Application at the Universitas Borneo Tarakan)

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ABSTRACT

The Universitas Borneo Tarakan (UBT) is one of the Education Personnel Education Institutions in Indonesia, because the COVID-19 pandemic has also spread in the Tarakan area, learning is carried out online using the Borneo e-Learning (BEL) application. The increase in COVID-19 cases since 2020 has also forced UBT to carry out online learning. Without significant preparation, all lecturers and students are required to use online learning applications, thus making it difficult for lecturers and students. The total population is 806 students who use the BEL application. The minimum sample required to reduce bias is a minimum of 200 samples. This study was analysed using Smart PLS. The results of the study indicate that student learning satisfaction, both directly and through student attitudes, is supported by the quality of technology, instructional design, and educator skills. Flexibility does not affect student learning satisfaction either directly or through student attitudes

Keywords: BEL, E-learning, Technology, Students

1. INTRODUCTION

For more than a year, Coronavirus disease 2019 (COVID-19) has become a pandemic in Indonesia, so that all community activities both in the political, social, cultural, educational, and other fields have been carried out online to break the chain of the spread of COVID-19. In the field of education, the government has not implemented policies regarding face-to-face learning.

Before COVID-19 became a pandemic, learning was carried out traditionally (face to face) which was carried out in classrooms, although several universities had implemented blended learning. However, after being declared a pandemic, the learning process is carried out from home (distance learning) which is carried out online.

With the rapid development of information technology, the problem of closing educational institutions can be overcome by online learning. Online learning is a suitable alternative to replace traditional learning during the COVID-19 pandemic. Online learning is the use of technology applications in learning for an educational process, meaning that the learning process is either partially or completely carried out by

utilizing internet technology. The use of the internet as a learning medium conditions students to study independently. Students can access information online from various websites in the form of articles, books, e-libraries, databases, reports, statistical data, and so on. So that students can act as researchers, analysts, actors, and so on do not only play a passive role as consumers of information. The role of the internet in education is very beneficial because of its ability to process very large amounts of data. Information technology has become the largest computer network in the world, which can function properly if it is supported by good computer equipment and software with well-trained lecturers. Using the internet with all its facilities will make it easy to access various information for education which can directly increase students' knowledge for their success in learning. which can function properly if it is supported by good computer equipment and software with well-trained lecturers. Using the internet with all its facilities will make it easy to access various information for education which can directly increase students' knowledge for their success in learning. which can function properly if it is supported by good computer equipment and software with well-trained

lecturers. Using the internet with all its facilities will make it easy to access various information for education which can directly increase students' knowledge for their success in learning.

Learning is a deliberate activity carried out by individuals so that there is a change in self-ability, by learning children who were previously unable to do something, become able to do something, or children who were previously unskilled become skilled. While online learning is a learning process carried out with the help of the internet. With online learning, learning can be done by students anytime and anywhere. Limits of space, distance, and time are no longer complicated problems to solve. Realizing application-based learning does not only complement teaching materials/materials in the application, not only alternative media used at critical times but how the role of applications can replace the traditional learning process with online learning better.

Online learning offers learners control over the content, learning sequence, pace of learning, timing, and often media, allowing them to tailor their experience to meet learning goals. The provision and use of online learning systems are a major challenge for educational institutions. The entire education system had to shift from traditional learning to online learning in one night. Starting from the teaching and learning process, mentoring, seminars, exams, graduations, and even graduations are also carried out online. This makes many academic circles do not agree to change the traditional learning process to online learning. This happens because, in traditional learning, educators can freely instill values into students,[1].

The success of an information system is influenced by users, so in the context of online learning, students are the main criteria for the successful use of online learning systems. Student learning satisfaction can be measured by the gap between perceived online learning quality and online pre-learning expectations. Student satisfaction can be said as customer satisfaction service users.

Customer satisfaction is a feeling of pleasure or displeasure from a service user. Students will be satisfied with the quality of online learning when the indicators of the quality of online learning that are considered important can be met or exceeded.

The flexibility of online learning plays an important role in determining student learning satisfaction [2]–[4]. Unlike traditional learning, online learning is not limited by space, time, and location. Therefore, students have a high degree of flexibility and have many opportunities for independent study.

The quality of technology is a factor that affects student satisfaction in learning [5], [6]. The quality of technology is a dimension of the effectiveness of online learning because of its relevance to the development of information technology skills that can increase student learning satisfaction.

Instructional design is very important and institutions cannot ignore it [7]. Instructional design is a systematic development of learning specifications by using learning and learning theory to ensure the quality of learning, if the quality of learning can be achieved well it will lead to student learning satisfaction.

Educators are the main actors in learning. Therefore, an educator must have skills that can support the learning process. Educators significantly affect student learning satisfaction[3]. When students experience difficulties in online learning, educators are people who help students to continue their learning.

Student attitudes are important in any form of education, regardless of the use of technology. Aspects of student attitudes are important in measuring student learning satisfaction[8], [9]. Traditionally interaction has focused on classroom-based communication between lecturers and students. The attributes and resources of the internet and the World Wide Web (WWW) expand the capacity of online learning. One of the unique features of online learning is its ability to support interactive group processes. The things that also influence student attitudes include flexibility, quality of technology, instructional design, and the skills of educators (lecturers).

Research result [10]shows that online learning systems in developing countries 45% fail miserably, 40% fail partially, while only 15% are successful. Measuring student learning satisfaction is important, this happens because agencies can check whether the application services provided can meet student learning satisfaction; the main indicators that need to be improved can be identified, and agencies can identify strengths and weaknesses based on student perceptions and assessments.

The Universitas Borneo Tarakan (UBT) is one of the Education Personnel Education Institutions in Indonesia, because the COVID-19 pandemic has also spread in the Tarakan area, learning is carried out online using the Borneo e-Learning (BEL) application. The increase in COVID-19 cases since 2020 has also forced UBT to carry out online learning. Without significant preparation, all lecturers and students are required to use online learning applications, thus making lecturers and students difficult, this happens because the university does not provide training on the use of the BEL

application in dealing with government policies regarding learning from home. Finally, the student adaptation process to the application is not easy. In addition, many UBT students come from other islands which are not supported by a good internet network so that sometimes the learning process becomes constrained. So often get some complaints from students. Therefore, online learning based on the BEL application (study of analysis of student satisfaction in the use of the BEL application at the Faculty of Teacher Training and Education, Universitas Borneo Tarakan) is interesting to study.

2. METHOD

This research is designed to build a new concept and empirical research model to maximize student learning satisfaction. To bridge this, this research builds a new concept based on flexibility factors, technology quality, instructional design, educator skills, and student attitudes to maximize student satisfaction at the Faculty of Teacher Training and Education, Universitas Borneo Tarakan. The research approach used is a quantitative approach using structural equation modeling (SEM) using a Confirmatory Factor Analysis model.

The total population of 806 students who use the BEL application approach in determining the sample is based on the study approach of [11]which states that the minimum sample required to reduce bias is a minimum of 200 samples. This research was analysed using Smart PLS

3. RESULTS AND DISCUSSION

3.1. Convergence Validity

Convergence validity was tested at the level of indicators and variables. Convergence validity on the indicator lever is called the reliability (item) indicator (item reliability). Item reliability (loading) is considered sufficient if the justification of an indicator to its variable is at least 0.7. While the discriminant is assessed by comparing the root values of the AVE. The form of model interpretation is described in Table 1:

Table 1. Convergence Validity

Items	X1	X2	X3	X4	Y	Z
F1	0.505					
F2	0.912					
F3	0855					
TQ1		0.850				
TQ2		0.780				
TQ3		0.700				
ID1			0.722			
ID2			0.842			
ID3			0.555			
ID4			0.829			
ES1				0.866		
ES2				0.892		
ES3				0.937		
SA1					0.757	
SA2					0.877	
SLS1						0.923
SLS2						0.942

Based on the results of table 1 data processing, it can be seen that the item reliability value (loading) of the two items does not meet the requirements because the item reliability value does not reach 0.7. The items in question are FE1, and ID3, so these items do not meet the requirements for further testing.

3.2. Discriminant Validity

Discriminant validity was tested at the indicator and variable levels. At the indicator level, no indicator gives an R Square to another variable that is higher than the indicator variable that should be. The value of r square for each variable indicator is presented in Table 2:

Table 2. Convergence Validity

Items	X1	X2	X3	X4	Y	Z
F1	0.505	0.457	0.437	0.242	0.152	0.194
F2	0.912	0.556	0.415	0.475	0.442	0.458

F3	0855	0.490	0.375	0.308	0.332	0.373
TQ1	0.604	0.850	0.562	0.396	0.426	0.437
TQ2	0.477	0.780	0.446	0.422	0.470	0.407
TQ3	0.354	0.700	0.419	0.322	0.208	0.376
ID1	0.321	0.400	0.722	0.299	0.224	0.243
ID2	0.369	0.540	0.842	0.472	0.284	0.311
ID3	0.250	0.324	0.555	0.215	0.051	0.145
ID4	0.489	0.526	0.829	0.461	0.288	0.332
ES1	0.315	0.374	0.436	0.866	0.477	0.618
ES2	0.420	0.424	0.413	0.892	0.548	0.568
ES3	0.490	0.530	0.531	0.937	0.597	0.707
SA1	0.292	0.350	0.215	0.488	0.757	0.485
SA2	0.399	0.450	0.294	0.501	0.877	0.771
SLS1	0.330	0.449	0.321	0.575	0.705	0.923
SLS2	0.522	0.522	0.356	0.721	0.760	0.942

Based on table 2, it can be seen that the indicator values for the tested variables give the loading value to the indicator variable with the highest value, so that all indicators meet the requirements.

3.3. Structural Model Evaluation

The value of R2 is expressed in several reliability categories, namely 0.67 in the (Good) category, 0.33 in the (moderate) category, and 0.19 in the (weak) category. [12]. The R2 value for the economic growth variable is 0.430, meaning that student attitudes are influenced by flexibility, quality of technology, instructional design, and skills of educators by 43 percent. While R2 absorption of monkeys is 0.711, meaning that 71.1 percent of student learning satisfaction is influenced by flexibility, quality of technology, instructional design, educator skills, and student attitudes, while the other 28.9 percent is influenced by other factors.

3.4. Structural Model Evaluation

The final step after all the parameters that must be tested have known their value is to determine whether or not the research hypothesis is accepted. In addition to the path coefficient value according to the hypothesis being tested, the t value must also be tested. In this case, it is necessary to compare with table. The hypothesis is accepted if the value of count is greater than table. The calculated t value is presented in Table 3:

Table 3. The value of t arithmetic between variables

Variable	Direct Influence	Through Student Attitude	T_{able}
Flexibility	1.069	1.023	
Technology Quality	2,073	1.,977	
Instructional Design	2.404	2.491	1.972
Educator Skills	5.215	3.186	

3.4.1. The influence of flexibility on learning satisfaction either directly or through student attitudes.

The results of data analysis show that flexibility does not affect student learning satisfaction either directly or through student attitudes. It is proven that t_{count} is smaller than t_{table} either directly or through student attitudes. This happens because lecturers at FKIP UBT tend to use the synchronous method. according to[13]there is room within the instructional technology research community to address strategies to facilitate online synchronous learning that complements asynchronous learning. Synchronized online whole-class discussions and well-structured small group discussions can help students feel a stronger connection with their peers and instructors and stay engaged with learning activities. This is also in line with[14]who argues that interaction is very important for learning. Synchronous e-Learning is synchronous learning that occurs through electronic means.

3.4.2. The influence of technology quality on learning satisfaction either directly or through student attitudes.

The results of data analysis indicate that the quality of technology affects student learning satisfaction either

directly or through student attitudes. This is evidenced by t_{count} greater than t_{table}. so that the hypothesis can be accepted. This is supported by the BEL application which has a high network capacity so that students have no difficulty in accessing or network speed. Tarakan City is a city that has a good network so that this helps students in learning.

This is in line with the opinion [15] that the best strategy for e-learning is becoming clearer that e-learning should be learner-based. This includes the need to postulate in a clear way that the needs of learners should be concretely determined before starting a project. The server capacity provided by the Management of the Universitas Borneo Tarakan makes it easy for students to access BEL at any time. This is also supported by the policy for lecturers to not only use the BEL application but also to use other third-party applications such as Google Classroom.

3.4.3. *The effect of instructional design on learning satisfaction either directly or through student attitudes.*

The results of data analysis indicate that instructional design affects student learning satisfaction either directly or through student attitudes. This is evidenced by t_{count} greater than t_{table} so that the hypothesis can be accepted. This is supported by the resources owned by the Universitas Borneo Tarakan which are still young so that they are always updated in implementing the instructional design. This is in line with the opinion[16] that the use of instructional design for eLearning states that the success of eLearning is largely due to the relationship that instructional design programs make between the design of learning materials embedded in learning theory and the design of effective learning.

3.4.4. *The influence of educator skills on learning satisfaction either directly or through student attitudes.*

The results of data analysis indicate that the skills of educators affect student learning satisfaction either directly or through student attitudes. This is evidenced by t_{count} greater than t_{table}. so that the hypothesis can be accepted. This is supported by the qualifications of lecturers owned by the Universitas Borneo Tarakan. So that can make interesting learning media during the implementation of online lectures. In addition, they are also able to choose learning methods that can make students active in discussing. In addition, online lectures are also liked by students of the Universitas Borneo Tarakan because they can save operational expenses such as house contract costs, living expenses. After all, with parents and with online lectures, students can

interact more with family members. It is also supported by[17]that teaching and learning with ICT requires special competencies for teachers and lecturers. Too much attention is paid to the technological aspect. Teachers learn to work with hardware and software. For example, Blackboard or Moodle demands more didactic skills than technical skills. Especially e-learning and blended learning are too demanding to let teachers learn to use these tools just by experimenting.

4. CONCLUSION

Based on the results of the study, it can be concluded that flexibility does not affect student learning satisfaction either directly or through student attitudes. The quality of technology has a positive and significant effect on student learning satisfaction both directly and through student attitudes. Instructional design has a positive and significant effect on student learning satisfaction both directly and through student attitudes. Educator skills have a positive and significant effect on student learning satisfaction both directly and through student attitudes.

AUTHORS' CONTRIBUTIONS

1. Muh. Darwis as the head of the research implementer is responsible for coordination and research ideas

2. Sitti Hardiyanti Arhas as a member I, acted as the initial problem analysis at the research site and helping data analysis and finalizing article manuscripts

3. Muh. Nasrullah as member II acts as a data collector in the field

4. Jamaluddin as member III plays a role in analysing data

ACKNOWLEDGMENTS

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