

THE IMPACT OF STUDENT SATISFACTION WITH ONLINE LEARNING: A CASE STUDY IN POLYTECHNIC OF STIA LAN BANDUNG

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Abstract: *Student satisfaction can be used as evaluation material to improve the quality of online learning. Many things have been affected by the Covid-19 pandemic, starting from the economic, social, and educational fields. This is a step for education providers to suppress the spread of Covid-19. Student satisfaction with the lecture process needs to be evaluated and becomes an important factor for higher education as a provider of educational services for students. One of the methods used to measure the effectiveness of learning is the qualitative method with the measurement using the Likert Scale. The factors used to measure the level of satisfaction with the NHS Shared Learning (NSL) instrument include; content, learning design, assessment, and technology. The instrument was used to measure the level of satisfaction in the form of a questionnaire using google forms. The research design used is descriptive analysis. Data collection in this study was conducted on 223 students with a percentage of 71.3% female respondents and 28.7% male respondents. Retrieval of data in this study using a questionnaire, while the data analysis used is Pearson Product Moment and Alpha Cronbach Correlation Test. The validity test shows that the validity of the questionnaire satisfaction from the online lecture process test can be declared valid, calculating all variables r to a total score greater than table r (0.138) with a significance level of 5%. While testing the reliability with a significance level of 5%, it showed that the satisfaction of the student sample questionnaire had a high level of reliability with an Alpha value of 0.939 for content, 0.963 for learning design, 0.934 for assessment, and 0.942 for technology.*

Keywords: Student Satisfaction, Online Learning, NHS Shared Learning (NSL)

1. Introduction

At the end of 2019, China experienced a Covid-19 pandemic in the Wuhan area. Furthermore, in early 2020 it was discovered that this virus has a very high infection rate and can be transmitted from human to human. The Chinese government also locked down the Wuhan area, but the action was too late because many infected people had left Wuhan, causing this virus to infect more than 200 countries in the world. In June 2020, more than 7 million people have tested positive for Covid-19 (Putri, 2020). The United States has the highest number of cases, followed by Brazil, Russia, India, Britain, and Spain. The spread of the Covid-19 virus throughout the world is a serious threat to countries in the world, including Indonesia.

Many things have been affected by the Covid-19 pandemic. Starting from the economic, social, and also world of education. In the field of education, according to UNESCO, in April 2020, 1.6 billion students were dismissed from schools and universities. This is a step for education providers to suppress the spread of Covid-19 (BBC, 2020). This figure is

approximately 90% of the entire student population in the world. Efforts to dismiss the students and university students not only put them off but changed the learning system, from what they usually meet in-person to online.

The existence of various new conditions in the teaching and learning system has made actors in the world of education and students not ready to adapt. There is an impact that is felt by all parties related to education, both from the side of students and students as well as from the side of the teacher. The impact felt by many families in Indonesia is that many families are not used to doing learning and teaching activities from home. Apart from families, the teaching staff is also not familiar with the online learning system. Students and students who are used to learning face to face with their instructors can only have virtual meetings. However, like it or not, online learning must still be done because there is no certainty regarding the completion of this Covid-19 pandemic.

Including at the tertiary level, students and lecturers who have never carried out the teaching and learning process using system applications and virtual teaching with online applications must also learn to be able to quickly adapt. Student satisfaction with the lecture process needs to be evaluated and is an important factor for higher education as a provider of educational services for students (Andilala & Marhalim, 2019).

Furthermore, previous researchers have investigated e-learning in student perceptions and showed the results that the application of e-learning needs to be analyzed for its impact on students whether students are satisfied or not satisfied in carrying out online lecture activities (Saifuddin, 2018). The results of student satisfaction can be used as evaluation material to improve the quality of online learning. Likewise, student satisfaction with the online learning system at the STIA LAN Bandung Polytechnic during the pandemic needs to be evaluated and researched further.

Based on the description of the background, research on online lecture satisfaction analysis needs to be done. The results of the research are expected to be an evaluation material for lecturers, students, and polytechnics regarding the implementation of online learning during the pandemic. The results of the research are expected to be useful for improving quality and performance as well as supporting the creation of an online learning process that meets student expectations.

2. Literature Review

Literature Review

The level of student satisfaction is one of the benchmarks for the quality of e-learning. The level of student satisfaction using e-learning can show students enjoying the online learning process. Quality learning will have a high level of satisfaction for its users. One of the methods used to measure the effectiveness of learning is NHL Shared Learning (NSL). In the NSL instrument, several factors affect the level of user satisfaction of a media. NHS Shared Learning (2009) developed two types of checklists to evaluate: (1) the quality of learning objects, and (2) the quality of online learning (courses). Evaluation of the quality of learning objects is carried out through the determination of 8 (eight) standards. However, to measure the evaluation of the quality of online learning, it is done by setting 4 (four) standards, including content, learning design, assessment, and technology.

In this study, the level of student satisfaction with e-learning student learning media will be measured using qualitative methods with measurements using a Likert Scale. The level of satisfaction of students participating in e-learning can be a reflection of the quality of online

learning of student learning media. Good quality learning will produce good outcomes as well. The indicators used to measure the level of student satisfaction using the NSL method are:

1. Standard A: Content Evaluation of content standards includes whether:
 - (1) Learning objectives can be measured and stated clearly what will the learner know or be able to do at the end of the lesson?
 - (2) Is there a clear syllabus or lesson plan?
 - (3) The learning objectives are by the needs of the content and the level of the learner's skills?
 - (4) The learning requirements (eg: time allocation, communication methods, learning activities, and assessments) are consistent with the learning objectives and clearly stated?
 - (5) Is the issue of copyright and intellectual property rights clearly stated?
 - (6) Policies regarding data protection are clearly stated when necessary, for example, if the learning program requires user identification?
 - (7) Learning assessment is included and answers and explanations are available?
 - (8) Accurate, up-to-date and unbiased learning content?
 - (9) General information literacy and communication skills included as an integral part of the learning package?
 - (10) Are learning resources available to help learners acquire the prerequisite knowledge and skills before starting learning?
 - (11) Notes and study resources for instructors included?
2. Standard B: Learning Design Evaluation of learning design includes whether:
 - (1) The lesson design reflects a clear understanding of the learner's needs and includes various ways of learning for various levels of mastery (from undergraduate to expert)?
 - (2) The learning packages are arranged in learning units?
 - (3) The learning unit includes an explanation of the learning objectives, learning activities, and learning resources in the unit?
 - (4) Does learning to involve the learner in activities aimed at a variety of learning styles?
 - (5) Written assignments according to learning content and learners?
 - (6) Lessons designed to teach concepts and skills that will last?
 - (7) Learning includes activities that involve learners in active learning?
 - (8) Learning provides alternative learning pathways (learning pathways) to master content based on learner needs?
 - (9) The learning package provides opportunities for learners to be involved in higher-order thinking including problem-solving, mental model development, opinion formation?
 - (10) Learning design allows learning packages to be adapted to accommodate learners with special needs?
 - (11) The lesson design provides opportunities for interaction between the learner and the learning facilitator, including feedback regarding the learner's progress?
 - (12) Learners have access to information and teaching materials that enrich learning?
 - (13) The learning package provides opportunities for learners to provide feedback on the learning content?
3. Standard C: Assessment Evaluation of the assessment standard, including whether:
 - (1) The assessment strategy is consistent with the learning objectives and clearly stated?
 - (2) The structure of the learning package includes methods and procedures to assess the learner's mastery of the learning objectives?
 - (3) Formative assessment is carried out to verify the readiness of learners to follow the next learning stage?

- (4) The assessment strategy makes learners aware of their learning progress?
- (5) The assessment strategy is flexible enough to assess learners in a variety of ways,?
- (6) Rating schemes and models available for tutors to assess learners?
- 4. Standard D: Technology Evaluation of technology standards, including whether:
 - (1)The learning package architecture allows tutors to add content, activities, and assessments to expand learning opportunities?
 - (2)Learning packages are structured according to technical interoperability standards, enabling content sharing and assessments among various LMS?
 - (3) Learning packages comply with W3C AA accessibility standards?
 - (4) Are hardware, browser, and software requirements specified?
 - (5) Required technological skills are clearly stated?
 - (6) Is Navigation in learning easy to do?
 - (7) The learning package provider provides technical assistance and learning management?

The level of student satisfaction with online learning for the Student Learning Media course is measured based on student perceptions including (a) content, (b) learning design, (c) assessment, and (d) the technology of e-learning used. The level of student satisfaction was measured using the Linkert scale. The instrument was used to measure the level of satisfaction in the form of a questionnaire using Google Forms.

The level of student satisfaction in the implementation of e-learning reflects the quality of e-learning student learning media. Good quality learning will produce optimal learning outcomes. A high level of satisfaction can be an indication that online learning for student learning media courses has been going well. In this study, it will be observed the effect of the level of satisfaction of students using e-learning in student learning media courses on student learning outcomes during the Covid 19 pandemic.

3. Method

This survey uses a qualitative method with measurements using a Likert Scale. The Likert scale is a psychometric scale commonly used in questionnaires and is the most widely used scale in survey research. This method was developed by Rensis Likert. The Likert scale is a scale that can be used to measure attitudes, opinions, and perceptions of a person or group of people towards a type of public service. On a Likert scale, respondents were asked to determine their level of agreement with a statement by choosing one of the available options. The research design used is descriptive analysis. According to Linarwati (2016), descriptive research is a form of research that aims to describe existing phenomena, both natural phenomena and man-made phenomena. The data collected is descriptive. The data is not intended to seek explanations, test hypotheses, make predictions, or study implications.

Figure Score Description:

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

4. Result and Discussion

Data collection in this study was conducted on 223 students with a percentage of 71.3% female respondents and 28.7% male respondents.

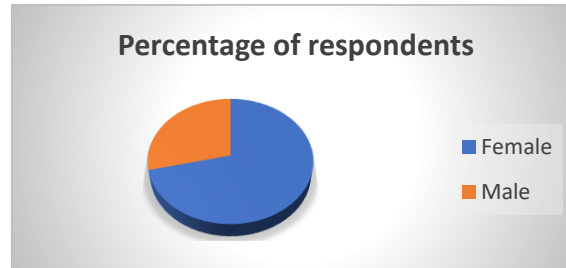


Figure 1 Percentage of Respondents

This study uses a questionnaire with a score of 1-4 with choices from strongly disagree, disagree, agree, and strongly agree. The first is regarding content, the campus has prepared content for online learning, but how do students respond to the content provided by the lecturer, whether the learning objectives can be measured and stated clearly, what will the learner know or can do at the end of the lesson.

In this study, the validity of the instrument was tested or the level of accuracy of the instrument. The instrument used in this study was a questionnaire on the level of student satisfaction in online lectures for Polytechnic of STIA LAN Bandung students. The questionnaire validation test in this study was carried out by correlating the item scores with the total score using the SPSS Statistics 28 program. The following is the output result of the questionnaire item validation correlation in the table below.

Table 1 Person Product Moment Correlation Validation Test for Content

		Correlations					
		X00001	X00002	X00003	X00004	X00005	X00006
X00001	Pearson Correlation	1	.669**	.638**	.603**	.541**	.540**
	Sig. (2-tailed)		<,001	<,001	<,001	<,001	<,001
	N	223	223	223	223	223	223
X00002	Pearson Correlation	.669**	1	.578**	.583**	.403**	.463**
	Sig. (2-tailed)	<,001		<,001	<,001	<,001	<,001
	N	223	223	223	223	223	223
X00003	Pearson Correlation	.638**	.578**	1	.659**	.625**	.637**
	Sig. (2-tailed)	<,001	<,001		<,001	<,001	<,001
	N	223	223	223	223	223	223
X00004	Pearson Correlation	.603**	.583**	.659**	1	.499**	.556**
	Sig. (2-tailed)	<,001	<,001	<,001		<,001	<,001
	N	223	223	223	223	223	223
X00005	Pearson Correlation	.541**	.403**	.625**	.499**	1	.678**
	Sig. (2-tailed)	<,001	<,001	<,001	<,001		<,001
	N	223	223	223	223	223	223
X00006	Pearson Correlation	.540**	.463**	.637**	.556**	.678**	1
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	
	N	223	223	223	223	223	223

X00007	Pearson Correlation	.531**	.511**	.569**	.530**	.611**	.672**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00008	Pearson Correlation	.611**	.570**	.677**	.654**	.582**	.577**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00009	Pearson Correlation	.575**	.499**	.648**	.607**	.589**	.586**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00010	Pearson Correlation	.516**	.561**	.590**	.532**	.500**	.575**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00011	Pearson Correlation	.580**	.476**	.554**	.486**	.590**	.623**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223

Correlations

		X00007	X00008	X00009	X00010	X00011	Total
X00001	Pearson Correlation	.531**	.611**	.575**	.516**	.580**	.782**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00002	Pearson Correlation	.511**	.570**	.499**	.561**	.476**	.724**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00003	Pearson Correlation	.569**	.677**	.648**	.590**	.554**	.826**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00004	Pearson Correlation	.530**	.654**	.607**	.532**	.486**	.774**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00005	Pearson Correlation	.611**	.582**	.589**	.500**	.590**	.763**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00006	Pearson Correlation	.672**	.577**	.586**	.575**	.623**	.798**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00007	Pearson Correlation	1	.650**	.569**	.609**	.641**	.796**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00008	Pearson Correlation	.650**	1	.687**	.669**	.555**	.835**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00009	Pearson Correlation	.569**	.687**	1	.709**	.612**	.814**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	<.001
	N	223	223	223	223	223	223
X00010	Pearson Correlation	.609**	.669**	.709**	1	.634**	.794**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001	<.001
	N	223	223	223	223	223	223
X00011	Pearson Correlation	.641**	.555**	.612**	.634**	1	.775**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		<.001
	N	223	223	223	223	223	223

Correlations

		X00001	X00002	X00003	X00004	X00005	X00006
Total	Pearson Correlation	.782**	.724**	.826**	.774**	.763**	.798**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223

Correlations

	X00007	X00008	X00009	X00010	X00011	Total
Total Pearson Correlation	.796**	.835**	.814**	.794**	.775**	1
Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	
N	223	223	223	223	223	223

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

Table 2. Person Product Moment Correlation Validation Test For Learning Design

Correlations

	X00001	X00002	X00003	X00004	X00005	X00006
X00001 Pearson Correlation	1	.721**	.700**	.682**	.656**	.658**
Sig. (2-tailed)		<,001	<,001	<,001	<,001	<,001
N	223	223	223	223	223	223
X00002 Pearson Correlation	.721**	1	.787**	.590**	.593**	.651**
Sig. (2-tailed)	<,001		<,001	<,001	<,001	<,001
N	223	223	223	223	223	223
X00003 Pearson Correlation	.700**	.787**	1	.628**	.675**	.724**
Sig. (2-tailed)	<,001	<,001		<,001	<,001	<,001
N	223	223	223	223	223	223
X00004 Pearson Correlation	.682**	.590**	.628**	1	.614**	.708**
Sig. (2-tailed)	<,001	<,001	<,001		<,001	<,001
N	223	223	223	223	223	223
X00005 Pearson Correlation	.656**	.593**	.675**	.614**	1	.753**
Sig. (2-tailed)	<,001	<,001	<,001	<,001		<,001
N	223	223	223	223	223	223
X00006 Pearson Correlation	.658**	.651**	.724**	.708**	.753**	1
Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	
N	223	223	223	223	223	223
X00007 Pearson Correlation	.676**	.713**	.726**	.714**	.654**	.767**
Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001
N	223	223	223	223	223	223
X00008 Pearson Correlation	.701**	.670**	.663**	.688**	.636**	.743**
Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001
N	223	223	223	223	223	223
X00009 Pearson Correlation	.634**	.697**	.701**	.609**	.620**	.666**
Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001
N	223	223	223	223	223	223
X00010 Pearson Correlation	.586**	.615**	.578**	.643**	.572**	.595**
Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001
N	223	223	223	223	223	223
X00011 Pearson Correlation	.696**	.656**	.666**	.641**	.663**	.677**
Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001
N	223	223	223	223	223	223
X00012 Pearson Correlation	.663**	.704**	.663**	.646**	.582**	.635**
Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001
N	223	223	223	223	223	223

Correlations

		X00007	X00008	X00009	X00010	X00011	X00012
X00001	Pearson Correlation	.676**	.701**	.634**	.586**	.696**	.663**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00002	Pearson Correlation	.713**	.670**	.697**	.615**	.656**	.704**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00003	Pearson Correlation	.726**	.663**	.701**	.578**	.666**	.663**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00004	Pearson Correlation	.714**	.688**	.609**	.643**	.641**	.646**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00005	Pearson Correlation	.654**	.636**	.620**	.572**	.663**	.582**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00006	Pearson Correlation	.767**	.743**	.666**	.595**	.677**	.635**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00007	Pearson Correlation	1	.708**	.726**	.600**	.728**	.731**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00008	Pearson Correlation	.708**	1	.651**	.720**	.713**	.640**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
X00009	Pearson Correlation	.726**	.651**	1	.591**	.630**	.698**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	<.001
	N	223	223	223	223	223	223
X00010	Pearson Correlation	.600**	.720**	.591**	1	.649**	.590**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001	<.001
	N	223	223	223	223	223	223
X00011	Pearson Correlation	.728**	.713**	.630**	.649**	1	.721**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		<.001
	N	223	223	223	223	223	223
X00012	Pearson Correlation	.731**	.640**	.698**	.590**	.721**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	
	N	223	223	223	223	223	223

Correlations

		X00013	Total
X00001	Pearson Correlation	.670**	.834**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00002	Pearson Correlation	.642**	.834**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00003	Pearson Correlation	.697**	.850**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00004	Pearson Correlation	.652**	.817**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00005	Pearson Correlation	.617**	.797**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00006	Pearson Correlation	.651**	.854**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00007	Pearson Correlation	.728**	.877**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00008	Pearson Correlation	.648**	.850**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00009	Pearson Correlation	.650**	.823**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00010	Pearson Correlation	.575**	.772**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00011	Pearson Correlation	.741**	.847**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00012	Pearson Correlation	.749**	.833**
	Sig. (2-tailed)	<,001	<,001
	N	223	223

Correlations

		X00001	X00002	X00003	X00004	X00005	X00006
X00013	Pearson Correlation	.670**	.642**	.697**	.652**	.617**	.651**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
Total	Pearson Correlation	.834**	.834**	.850**	.817**	.797**	.854**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223

Correlations

		X00007	X00008	X00009	X00010	X00011	X00012
X00013	Pearson Correlation	.728**	.648**	.650**	.575**	.741**	.749**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223
Total	Pearson Correlation	.877**	.850**	.823**	.772**	.847**	.833**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001
	N	223	223	223	223	223	223

Correlations

		X00013	Total
X00013	Pearson Correlation	1	.830**
	Sig. (2-tailed)		<.001
	N	223	223
Total	Pearson Correlation	.830**	1
	Sig. (2-tailed)	<.001	
	N	223	223

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

Table 3. Person Product Moment Correlation Validation Test for Assessment

Correlations

		Total
X00001	Pearson Correlation	.841**
	Sig. (2-tailed)	<.001
	N	223
X00002	Pearson Correlation	.869**
	Sig. (2-tailed)	<.001
	N	223
X00003	Pearson Correlation	.878**
	Sig. (2-tailed)	<.001
	N	223
X00004	Pearson Correlation	.891**
	Sig. (2-tailed)	<.001
	N	223
X00005	Pearson Correlation	.866**
	Sig. (2-tailed)	<.001
	N	223
X00006	Pearson Correlation	.860**
	Sig. (2-tailed)	<.001
	N	223
Total	Pearson Correlation	1
	Sig. (2-tailed)	
	N	223

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

Table 4. Person Product Moment Correlation Validation Test for Technology

		Correlations	
		X00007	Total
X00001	Pearson Correlation	.730**	.863**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00002	Pearson Correlation	.676**	.856**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00003	Pearson Correlation	.690**	.896**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00004	Pearson Correlation	.653**	.868**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00005	Pearson Correlation	.695**	.894**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00006	Pearson Correlation	.657**	.836**
	Sig. (2-tailed)	<,001	<,001
	N	223	223
X00007	Pearson Correlation	1	.845**
	Sig. (2-tailed)		<,001
	N	223	223
Total	Pearson Correlation	.845**	1
	Sig. (2-tailed)	<,001	
	N	223	223

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

According to the data above, it displays the correlation value between each item and the total score. To determine the validity of each item out of 37 items based on content, learning design, assessment, and technology, a comparison was made between the total score (r count) and r table. The value of r table is obtained at a significance level of 5% with a sample of 223 people of 0.138. Of the thirty-seven items tested, all of them have a calculated r value greater than r table = 0.138. Based on the comparison between the calculated r of each item with the r table, it can be concluded that the ten indicators of student satisfaction with online lectures are declared valid with a significance level of 5%.

Table 5. Reliability test using Cronbach's alpha test for Content

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	223	100.0
	Excluded ^a	0	.0
	Total	223	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.939	11

Table 6. Reliability test using Cronbach's alpha test for Learning Design

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	223	100.0
	Excluded ^a	0	.0
	Total	223	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.963	13

Table 7. Reliability test using Cronbach's alpha test for Assessment

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	223	100.0
	Excluded ^a	0	.0
	Total	223	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.934	6

Table 8. Reliability test using Cronbach's alpha test for Technology

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	223	100.0
	Excluded ^a	0	.0
	Total	223	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.942	7

Based on the reliability test above, it shows that the variation of all items has a positive relationship with the online lecture process variable, namely by comparing the Cronbach's alpha value of 0.939 for content, 0.963 for learning design, 0.934 for assessment, and 0.942 for technology with an r table of 0.138. Therefore, it can be concluded that the thirty-seven items studied are reliable.

According to the validity test above, it can be concluded that the questionnaire on the level of student satisfaction with online lectures conducted on students at the Polytechnic of STIA LAN Bandung is declared valid. After testing the validity of the instrument, the next step is to test the reliability of the instrument. Instrument reliability test aims to determine the level of confidence in the results of a measurement. An instrument can be said to be reliable if it has been used many times in measuring the same object, it will get the same data results.

For online learning, students still hope that conditions will return to normal, and they can enjoy offline lectures or a mixture of offline and online. Regarding assignments in online lectures, the lecturers finally made a lot of assignments to control the quality of student learning. The results of online learning that are known are that students already have the basic facilities and infrastructure needed to conduct online learning. The existence of flexibility in the implementation of online learning has a good impact on learning independence and student motivation to be more active in the learning process. In addition, online learning can reduce student crowds and encourage social distancing behavior so that it can reduce the potential for the spread of Covid-19 in the campus environment. Meanwhile, the obstacles faced are the problem of network infrastructure for students in remote areas, the high cost of quotas, and the supervision of weak students.

5. Conclusions

Based on the analysis of online lectures in the calculation of validity tests, reliability tests and calculations using a Likert scale with SPSS 28. Then the following conclusions can be drawn:

1. From the results of the validity test of the online lecture process questionnaire, all indicators or items are declared valid.
2. The results of calculations using a Likert scale on the level of student satisfaction in lectures at the STIA LAN Bandung Polytechnic, obtained an r count of 0.939 for content, 0.963 for learning design, 0.934 for assessment, and 0.942 for technology of Cronbach's alpha.
3. At the 5% significance level, it shows that all variations of the item have a positive relationship.

This study concludes that overall students are satisfied with online learning, although there are still some obstacles faced, namely the problem of network infrastructure for students in remote areas, the high cost of quotas, and supervision of weak students.

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