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Analysis of Online Learning Applications During the Covid-19 Pandemic

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Abstract : This study aims to analyze the perceptions of English language education students towards applications that are used effectively and the most effective applications for online learning in the era of the Covid-19 pandemic. This research uses the SEM (Structural Equation Modeling) method. The subjects of this study were 105 sixth-semester students of English Language Education at UIN Sultan Maulana Hasanudin Banten. The instrument used in this study was a questionnaire. Analyze data using descriptive statistics and structural equation modeling in inferential statistics. The findings showed that students had a positive or positive perception of effective applications for online learning during the Covid-19 pandemic. Based on the findings, it can be seen that the application used by students in online learning in this pandemic era is very effective because the distance learning process has become easier with the application. Then 77% of respondents said that the most efficient application used in online learning is Google Meet because, technically, Google Meet is easier to use, does not require much internet costs, does not interfere when online learning, and is convenient to use.

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Introduction

At the beginning of the new year, 2020, the world was shocked by the discovery of a deadly virus called Covid-19 (Hani & Rahmani, 2021). Coronavirus disease 2019, or Covid-19, causes severe and highly contagious acute respiratory illness. The Covid-19 virus was first detected in Wuhan City, China, at the end of the year, precisely December 2019 (Zhou et al., 2020). Over time, the number of patients infected with this virus increased until March 11, 2020, when the WHO (World Health Organization) declared Covid-19 a pandemic(Fitri, 2020). Until now, the number of Covid-19 patients continues to increase. The coronavirus pandemic has changed life activities differently than usual, and institutions have closed entire communities to minimize the increase in coronavirus cases. The Coronavirus (Covid19) spread to almost all elements of society in the world, including in Indonesia. In Indonesia, COVID-19 is a challenge for the education system. The Indonesian education system needs new innovations in terms of learning models and learning processes. The government's policy

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of implementing social distancing significantly impacts the world of education in Indonesia, especially in the learning process. During the pandemic, the learning process took place online. Then in this online system, all elements of education, such as lecturers and students, must facilitate the online learning process so that learning becomes active as usual. Lecturers, who are the main body of education, must be able to adapt to online learning and make the learning process fun. In Indonesia, almost all educational institutions have adopted online systems, and several schools and universities have implemented distance learning to prevent and break the chain of the spread of Covid-19, including Sultan Maulana Hasanuddin National Islamic University. Students utilize learning media through applications for online learning. So far, many online learning media applications have been used to help the learning process, such as Google Classroom, Zoom cloud meeting, Cisco Webex, Google Meet, Telegram, and others(Gunawan & Amaludin, 2021). The instructor must choose an effective and efficient application to communicate the learning objectives well.

Perception (from Latin Perception) is a cognitive process forming a subjective world picture. It is a mental process consisting of a whole object or reflective phenomenon that directly affects the surface of sensory receptors(Harisah & Masiming, 2008) (human perception). Perception is one of the biopsychological functions determining the complex process of receiving and transforming information obtained through the senses that form a subjective holistic picture of an object through the sensory whole initiated by a said object acting on the analyzer. According to Wood, perception is the active process of meaning creation through the selection, organization, and interpretation of objects, situations, and people. Mick Randall states that perception results from an information processing system that constantly interprets incoming information based on previous experience (Qasha, 2006).

Online learning is distance learning that does not require face-to-face. Zhu, McKnight, and Edwards describe online learning as a formal educational process where the learning process takes place when students and instructors are not in the same location and internet technology is used to facilitate communication between instructors and students(Clayton, 2014).

According to Arsyad, the word medium comes from the Latin word "medium," which means presentation. What it means for the medium to be a conveyor of a message from one recipient to another(Fuady & Mutalib, 2018). Meanwhile, Basyiruddin said the media is a tool that can convey information and motivate students to learn. The media must be carefully designed to be easy to see, hear and read to communicate intent and purpose(Puspitaloka et al., 2022).

Each medium has certain characteristics or traits that relate to or are visible to various educational institutions. According to Gerlach and Ely, learning-based learning media has three characteristics: the use of learning media as a guideline for teachers to develop teaching materials. Three properties of learning media are: a) Fixed nature, namely learning media that can record, store, preserve, and reconstruct events or objects; b) Manipulability, i.e., the ability of the media to restore previously stored events or objects. For example, in butterflies that experience the process of larvae pupating and then becoming butterflies, this is a process where the medium can speed up the time of recording changes in butterflies, but these changes can reappear because they have been stored before. c) Nature of distribution, the media can distribute an unlimited number of research subjects (Ediyani et al., 2020).

An application is a program people use to do something on a digital device. A mobile application system is an easy-to-use application that allows users to move from one place to another without interfering with the use of the device. A mobile app is an application

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software designed to perform certain actions on a phone, computer, tablet, or other device. From the definition above, it can be concluded that an application is a software used to perform operations such as communication, learning processes, and others (Foster et al., 2013).

According to Winarno, efficiency is the relationship or comparison between the output factor (output) of goods and services with what is scarce (input) in the work unit or the decision of how (effort, work) to do something (by not waste). time, effort, and cost) (Winarno & Hermana, 2019). Mulyadi added that efficiency is the right way (effort, work) to get things done without wasting time, energy, and money. In short, it can be seen that the application of online learning media is very important. Hence, this study examines and analyzes how much influence one variable has on students' positive perceptions. The unit of analysis of this research is a 6th-semester English language education student of UIN Sultan Maulana Hasanudin, Banten. It is hoped that the findings of this research can help stakeholders of higher education leaders to develop and implement the most effective and efficient online learning media applications, and then from the birth of online learning media applications, the success and success of secondary education institutions can be realized easily.

The application of online learning media used will be more effective and efficient in achieving college learning goals because teachers feel that any online learning media application used will not hurt(Kurniasih et al., n.d.; Urh et al., 2015). Online learning media and student perceptions are important factors in conducting learning and learning in post-secondary institutions. Based on the theoretical framework above, the conjecture is as follows: 1. Students' perception of online learning in the era of the Covid-19 pandemic is positive. 2. The most effective application to use in online learning in the era of the Covid-19 pandemic.

Research Method

In this study, the survey method was combined with the causal method(Yao et al., 2021). Data analysis will use the inferential statistics SEM method with LISREL 8.80(Chu, PH. and Chang, 2017). To determine the direct influence of each research variable. To obtain respondents' perceptions of each variable studied, structures and indicators were built as the basis for preparing research instruments in the form of questionnaires(Bishop et al., 2005).

The data collection process is done through surveys using questionnaire instruments as research tools. Two variables will be analyzed in this study, namely: (1) Online learning media application (X_1) (2) Student perception (X_2). (1) Online learning media application (X_1), (2) Student perception (X_2). This research approach uses a descriptive quantitative approach to analyze the influence of several independent variables on the dependent variable. The contribution of indicators for each variable can be viewed in detail using SEM(Grace & Bollen, 2008).

Descriptive analytics is used for data presentation and central and scatter measurements. The data will also explain the minimum score, maximum score, average, median and mode, standard deviation, and score range. For the data to be clearer and more organized, the collected data will be displayed in the form of a frequency histogram and a list of distribution numbers. The inferential analysis is used to test hypotheses through path analysis techniques. To see the indicators in each variable, researchers calculated each sub-indicator with a computer-aided normality test using the Microsoft Excel program.

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The subjects of this study were 105 sixth semester students of English Language Education at UIN Sultan Maulana Hasanudin Banten. Given that the population is homogeneous, it is quite large, and the sample size used in the study is calculated according to the Slovin technique (Tresnanto & Nuswantara, 2021).

A sample size of 105 students was used, based on calculations using the Slovin technique. For the sampling technique of 105 people, the author used proportional random sampling (Creswell, 2003; Madow, 1946) or random sampling techniques, which are sampling techniques that are not systematic but random by considering the proportion of the population in each class. Its main purpose is to represent the entire population. If sampling is not random, it is not guaranteed to be representative of the entire population.

The sampling steps are as follows: Determining the population that can be reached, namely all 6th-semester students majoring in English Language Education UIN Sultan Maulana Hasanudin Banten totaling 144 people, so that the number of samples and the number of sampling frames are 144 people, namely by writing down sequence numbers 1 to 144, from 105 research samples randomly selected from 144 existing people.

Result And Discussion

The table above illustrates respondents' responses to student perceptions. Based on the processing results in the table above, it can be seen that the average total score of student perception is 3.91. The average score is entered in a continuous line whose measurement is determined in the previous point. As seen in the table above, the index that contributes the most to other variables is the comprehension index, with a percentage of 44.71%. At the same time, the smallest contribution is the stimulus absorption index, with a percentage of 19.57%.

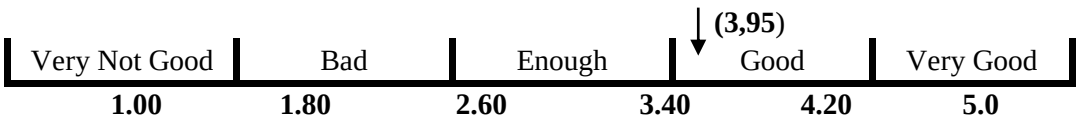
Description of Student Perception Research and Online Learning Media Applications

1. Student Perception Indicators.

1.1 Against Stimuli

Tabel 1. Respondents' Gaps About Absorption Indicators Against Stimuli

No	Statement	Alternative Answers					Average
		Very often	Often	Sometimes	Infrequently	Never	
		1	2	3	4	5	
1	X1.1	0	40	13	123	97	4.01
2	X1.2	4	12	36	115	106	4.12
3	X1.4	0	24	64	121	64	3.82
4	X1.5	0	28	46	135	64	3.86
Average							3.95



In the calculation results of the table above, it can be seen that the average score is 3.95. Thus, the indicator of the frequency of absorption against excitatory has a good category.

1.2 Understanding

Table 2. Respondents' responses on indicators of understanding

No	Statement	Alternative Answers					Average
		Very often	Often	Sometimes	Infrequently	Never	

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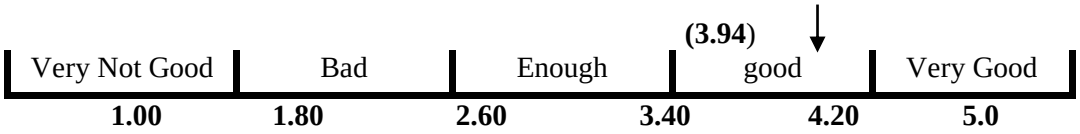
		1	2	3	4	5	
1	X1.6	0	19	30	174	50	3.93
2	X1.7	0	15	38	162	58	3.96
3	X1.9	5	20	58	125	65	3.82
4	X1.10	0	15	22	135	101	4.18
5	X1.11	0	14	48	122	89	4.05
6	X1.12	0	0	81	133	59	3.919
7	X1.13	0	0	77	122	74	3.989
8	X1.15	4	29	83	90	67	3.685
Average							3.94

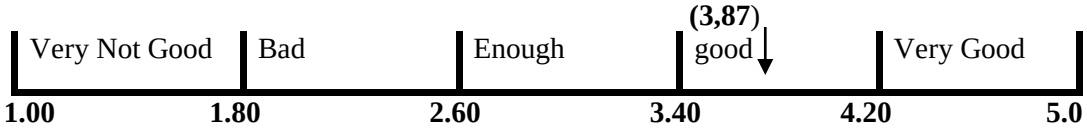


In the calculation results of the table above, it can be seen that the average score is 3.94. Thus, the frequency of understanding indicators has a good category.

1.3 Assessment

Tabel 3. Respondents' Responses on Assessment Indicators

No	**Statement**	**Alternative Answers**					**Average**
		Very Often	Often	Sometimes	Infrequently	Never	
		1	2	3	4	5	
1	X1.16	0	45	84	106	38	3.50
2	X1.17	5	0	65	144	59	3.92
3	X1.18	0	40	0	95	138	4.21
4	X1.19	0	4	61	124	84	4.05
5	X1.20	5	17	33	193	25	3.79
6	X1.21	18	11	79	100	65	3.67
Average							3.87



In the calculation results of the table above, it can be seen that the average score is 3.87. Thus the Assessment frequency indicator has a good category.

Table 4. Recapitulation of Student Perceptions(X1)

Variable	**Average**	**Category**
Absorption Against Stimuli (AAS)	3.95	Good
Understanding (UN)	3.94	Good
Valuation (VN)	3.87	Good
Student Perception	3.92	Good

Source: Primary Data Processing Results, 2023

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The table above illustrates respondents' responses regarding student perceptions. Based on the processing results presented in the table above, it can be seen that the average total score for student perception is 3.91. The average of such scores is entered into a continuum, the measurement of which is determined in the previous point.

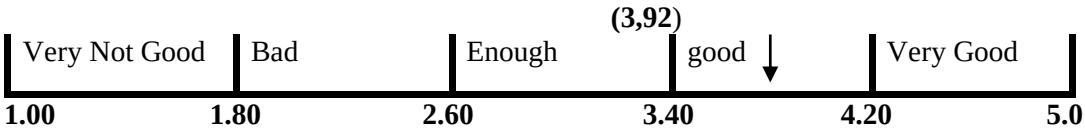


Table 5. Contribution of Student Perception Indicators

NO	Student Perception Indicators	Indicator Values	Percentage
1.	Absorption Against Stimuli (AAS)	19.566	19.57%
2.	Understanding (UN)	44.706	44.71%
3.	Valuation (VN)	35.728	35.73%

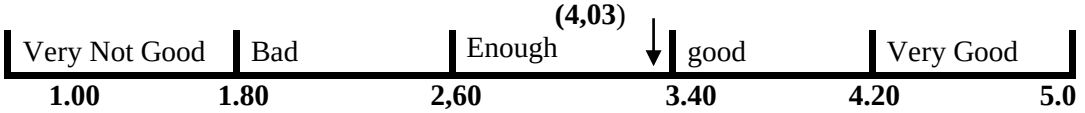
From the table above, it can be seen that the indicator that contributes the most to influencing other variables is the comprehension indicator with a percentage of 44.71%, while the one that contributes the smallest is the Absorption to Stimuli indicator with a percentage of 19.57%.

2. Online Learning Media Applications

2.1 Easy features

Table 6. Respondents' Feedback About Indicators Easy features

No	Statement	Alternative Answers					Average
		Very Often	Often	Sometimes	Infrequently	Never	
		1	2	3	4	5	
1	X2.19	0	40	0	95	138	4.21
2	X2.20	0	40	26	69	138	4.12
3	X2.21	0	5	41	154	73	4.08
4	X2.22	4	0	53	152	64	4.00
5	X2.23	0	21	43	155	54	3.89
6	X2.24	0	15	56	155	47	3.86
7	X2.25	0	0	94	128	51	3.84
8	X2.26	0	0	22	155	96	4.27
Average							4.03



In the calculation results of the table above, it can be seen that the average score is 4,03. Thus the easy features frequency indicator has a good category.

2.2 Easy to use

Table 7. Respondents' Responses on the easy to use Indicator

No	Statement	Alternative Answers					Average
		Very Often	Often	Sometimes	Infrequently	Never	

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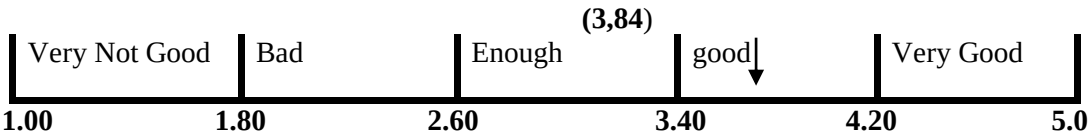
		1	2	3	4	5	
1	X2.27	0	40	26	69	138	4.12
2	X2.22	4	0	53	152	64	4.00
3	X2.28	4	29	83	90	67	3.68
4	X2.29	0	45	84	106	38	3.50
5	X2.23	0	21	43	155	54	3.89
				Average			3.84

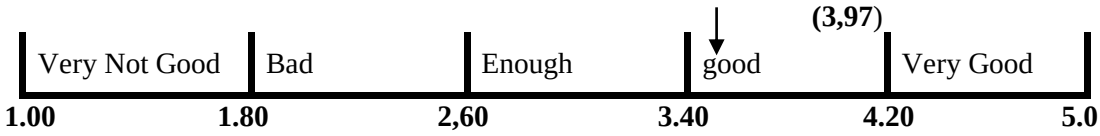


In the calculation results of the table above, it can be seen that the average score is 3.84. Thus, easy-to-use frequency indicators have a good category.

2.3 Small Internet Quota

Table 8. Respondents' Responses on the Small Internet Quota Indicator

No	**Statement**	**Alternatif Jawaban**					**Average**
		Very Often	Often	Sometimes	Infrequently	Never	
		1	2	3	4	5	
1	X2.16	13	14	71	135	40	3.64
2	X2.17	0	11	30	114	118	4.24
3	X2.18	13	18	40	124	78	3.86
4	X2.20	0	40	26	69	138	4.12
				Average			3.97



In the calculation results of the table above, it can be seen that the average score is 3.97. Thus the small quota frequency indicator has a good category.

Table 9. Respondents' Feedback online learning media applications (X_2)

Variable	Average	Category
Easy Features (EF)	3.85	good
Easy to use (ETU)	3.84	good
Small Internet Quota (SIQ)	3.97	good
Online Learning Media Applications	3.88	**good**

Source: Primary Data Processing Results, 2023

The table above illustrates respondents' responses regarding online learning media applications. Based on the processing results presented in the table above, it can be seen that the average total score for online learning media applications is 3.88. The average of such scores is entered into a continuum, the measurement of which is determined in the previous point.

(3,88)

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Very Not Good	Bad	Enough	good	Very Good
1.00	**1.80**	**2.60**	**3.40**	**4.20** **5.0**

Tabel 10..Contribution of Online Learning Media Application Indicators

NO	Online Learning Media Application Indicators	Indicator Values	Percentage
1.	Easy features	42.092	42.01 %
2.	Easy to use	38.968	38.97 %
3.	Small Internet Quota	18.94	18.94 %

It can be seen from the table above that the index that has the greatest influence on other variables is the easy feature index which is 42.01%, and the smallest contribution is the small quota index which is 18.94%.

The influence of student opinion on the use of online learning media is (32.8%), meaning that the variable use of online learning media can increase student opinion of UIN Sultan Maulana Hasanudin Banten (32.8%). The findings of this study are supported by previous research that shows the influence between online learning media applications and students' perceptions. The use of online learning media can be a predictor and influence student perception (Maphosa, 2021; Marks et al., 2005; Sahin & Shelley, 2008). Therefore, in this case, especially universities and lecturers so that the implementation of institutions can work together to improve the quality of universities. The influence of the variable application of online learning media on the usability index (ETU) of (0.87), the influence of the variable application of online learning media on the usability index (ETU) of (0.95), and the influence of media are on the Small Quota (0.92) Indicator (SIQ) of applying online learning. Furthermore, the analysis of LISREL (maximum likelihood) estimates shows that the main contributor to eLearning media application variables is (42.01%) simple features (EF).

The second relationship between student perception variables and indicators. The influence of each student perception variable on the stimulus absorption indicator (AAS) of (0.83), the influence of student perception variables on the comprehension indicator (UN) of (0.94), and the influence of student perception variables on assessment. The indicator (VN) is (1.05). In addition, the results of the LISREL Estimates (Maximum Likelihood) analysis show that the indicator that plays the most role in student perception variables is understanding (UN) (44.71%). In addition, the results of the LISREL Estimates (Maximum Likelihood) analysis show that the indicator that plays the most role in student perception variables is understanding (UN) (44.71%).

From the results of hypothesis testing, it can be concluded that the application of online learning media affects student perception, with a path coefficient value of 0.33. This means that online learning media applications have a direct impact on the perception of students. The impact of using online learning media on students' cognition. This study's findings align with Eom's view that the use of online learning media can be a predictor and influence students' perceptions(Eom et al., 2006). (Maphosa, 2021; Sakkir et al., 2021). The information explains how online learning media applications affect student perception, thus reinforcing the findings of this study.

Based on these findings, students who were respondents to the study responded positively to the efficiency of using applications used in online learning during the pandemic. 77% of students said that using apps for online learning was very effective during the outbreak, and respondents said that applications were very helpful in conducting teaching and learning activities at home as an alternative to in-person or face-to-face learning. The only

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way or alternatives students can support online learning. From the research results above, it was also found that the most efficient online learning application in the era of the Covid-19 pandemic, 77% of respondents chose Google Meet as the most efficient online learning application. This is related to the statement of one expert, Solihatin, who stated that "several media efficiency criteria must be considered, including time, cost, availability, the context of use, and technical quality.

Conclusion

After research and analysis of "Student Perceptions of Efficient Applications Used in Online Learning in the Covid-19 Pandemic Era" (research of Semester 6 students of the Department of English Language Education, Sultan Maulana Hassanuddin, Banten National Islamic University). Shows that students have a positive perception of using applications in online learning. From the data analyzed by respondents, using applications is very helpful for conducting online learning and alternative ways of learning well in the Covid-19 era. During the Covid-19 pandemic, almost all universities implemented online or distance learning to prevent the spread of the Covid-19 virus. At the same time, 77% of respondents surveyed expressed their opinions about the most effective application used in online learning. The author believes this study chose Google Meet as the most effective learning application. Respondents chose Google Meet because it is easy to use, does not cost much to connect to the internet, does not take much time, and supports signals.

Suggestion:

Based on these findings, researchers provide the following recommendations: For students although not face-to-face, students must be more independent and know what the instructor explains through online learning applications. Students must also be able to take advantage of applications in learning. In this pandemic era, because applications can be an alternative to online learning and are important to support distance learning. For lecturers it is expected that lecturers understand information technology in this modern online era, especially in an era where face-to-face learning is replaced with online learning due to the Covid-19 pandemic. Learning, knowing which applications are appropriate for students to support learning, instructors must have more control over which applications stimulate or enhance student learning. Future researchers who intend to conduct research can use this research as a reference, and subsequent researchers can also complete the shortcomings of this study.

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