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Evaluation of E-Learning Implementation During The Covid-19 Pandemic: A Case Study At Politeknik Negeri Semarang (POLINES) Indonesia

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ABSTRACT: In early 2020, Indonesia, including the world, faces the massive spread of the Covid-19 virus. The spread of COVID-19 has prompted the President of the Republic of Indonesia through the minister of education to issue Circular Number 4 of 2020 concerning the Implementation of Education Policies in Emergency Times Spread of COVID-19 in a Circular It is explained that the learning process is carried out at home through online learning. This policy means changing the learning method from the majority of face-to-face to online learning. Online learning methods are new to all interested parties: teachers, students, and education management. This phenomenon encourages a study to be carried out that aims to determine the effectiveness of online learning at the Semarang State Polytechnic in achieving curriculum targets. This quantitative research begins with a review of policies and literature related to COVID-19 and online learning, which is continued by using an online questionnaire to collect data obtained from 643 student respondents and 76 lecturers in 5 departments and 18 study programs from 25 study programs in POLINES This study wanted to determine the effectiveness of online using El Nino from 1) Content, 2) Interface, 3) Feedback and assessment, 4) Convenience, 5) Interaction, and 6) Social Influence; research findings from the six variables obtained an overall average index. Which was obtained from the lecturers' respondents was 69%, while the overall average index obtained from student respondents was 73%.

Keywords: E-Learning, Accounting Student, Covid-19.

INTRODUCTION

Indonesia first confirmed a case of COVID-19 on March 2, 2020. At that time, President Joko Widodo announced that two Indonesians had tested positive for the Coronavirus. The impact of the COVID-19 outbreak on life is not only in the economic sector; the education sector is also experiencing its impact. (Adedoyin & Soykan, 2020). The real impact that we can see is the change

in learning patterns from face-to-face to online. (Daumiller et al., 2021; Pritchard & Morrow, 2017).

This online learning is in accordance with the Circular Letter of the Minister of Education and Culture Number 4 of 2020 Concerning the Implementation of Education Policy in the Emergency Period of the Spread of COVID-19. In the Circular Letter, it is explained that the learning process is carried out at home through online learning. (Yuliarti, 2019).

The Semarang State Polytechnic carried out the same condition with the SE Director of Polines No 1847/PL4.7.2/PL/2020 concerning preventing COVID-19 infection in the Polines environment. It was stated that lecture activities starting March 16-27, 2020, would be carried out online using the e-learning at https://elnino.polines.ac.id. The latest development of online lecture activities using the e-learning system has been extended until April 9, 2020, following the SE Director of Polines No 1943/PL4.7.2/PL/2020. Seeing these conditions means that lecturers and students must use the e-learning learning process during the entire 2019/2020 academic year semester.

According to Amir et al. (2020), lecturers must adapt their teaching methods to a digital format, which is often more practical than traditional approaches. Some studies highlight how methods such as digital simulations or demonstration videos are employed to replace direct practical sessions.(Amir et al., 2020). The confusion experienced by students and lecturers in adapting to the new system has also become a focal point of research, as this factor often impacts the quality of learning and student engagement. (Dhawan, 2020)Previous studies indicate that higher education institutions face challenges in preparing the necessary infrastructure, including internet access, hardware, and adequate e-learning platforms, to support e-learning. (Bao, 2020). Although numerous studies have tested the effectiveness of e-learning in higher education, research applied specifically to polytechnics remains limited. Based on this background, this study aims to evaluate the implementation of e-learning (El-Nino) at the Semarang State Polytechnic during the COVID- 19 pandemic.

METHOD

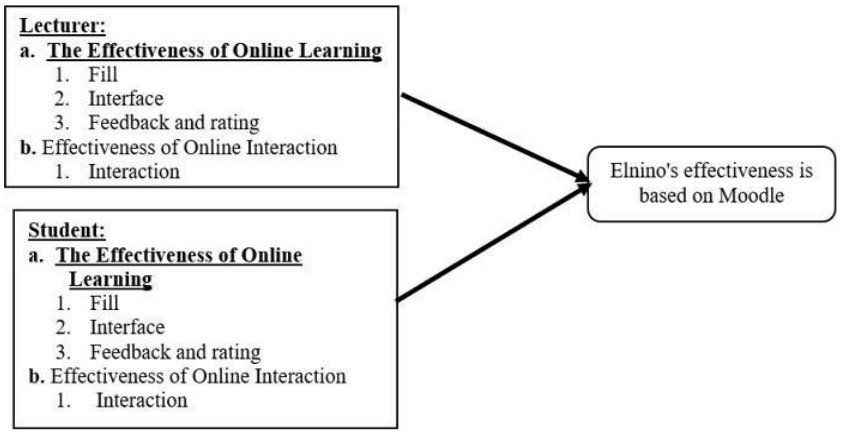
The research model used for this Elnino effectiveness study is a qualitative descriptive approach. This study begins with data collection and then data reduction using a questionnaire with a Likert scale of one to four. The next step is presenting the data, which ends with drawing conclusions. (Jogiyanto, 2007)Validity and reliability testing was then carried out. The test was run using SPSS v23. The validity test was to determine whether the data from the questionnaire results were valid or invalid. Questionnaires are said to be reliable if one's answers to statements are consistent or stable from time to time. A variable is said to be reliable if it gives a Cronbach Alpha value > 0.70 (Ghozali, 2016).

Researchers used data collection techniques with questionnaires to collect primary data in this study (Saldaña, 2021). The sample selection method used in this study was purposive sampling.

The respondents in this study were Polish lecturers and students. The selection of these respondents was based on the consideration that the lecture process used El Nino during the Covid-19 pandemic (Reimers et al., 2020). The data source in this study used primary data by collecting 76 lecturer respondents representing 20% of the total number of lecturers owned by the Semarang State Polytechnic and 643 student respondents representing 12% of the total number of students from various majors owned by the Semarang State Polytechnic (Pandiya & Hamida, 2017).

The research variables used in this study were taken based on the variables contained in the Guidebook for implementing Distance Education (PJJ)/online issued by the 2016 Ministry of Research, Technology and Higher Education and the Online Learning Survey Guidebook Kemenristekdikti 2017 (Najib & Model, 2017)Both the guidebook for implementing distance education and the Online Learning Survey Guidebook refer to the Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 109 of 2013 concerning the Implementation of Distance Education in higher education. (Widoyoko, 2009).

Figure 1. Research Framework



RESULT AND DISCUSSION

The description of the characteristics of the respondents is to describe or provide an overview of the identity of the respondents in this study because by describing the identities of the respondents who are the sample in this study, it will be known to what extent the identity of the respondents in this study. (Yu & Qian, 2018). Therefore, the description of the identity of the respondents in this study can be grouped into several groups, namely

1. Lecturer: gender, teaching experience, study program,
2. Student: Gender, Age, Region/City, Study Program, Semester.

In this study, questionnaires were sent via Google form; the number of participating lecturers was 76 respondents, while for student respondents, there were 643 people. The total number of Semarang State Polytechnic lecturers is 377, which means that the collected respondents represent

20% of the Polines lecturer population, while the total number of active students in 2019-2020 is 5,268, which means that the respondents collected from student groups represent 12% of the Polines student population (Wahono & Waidah, 2005). This can be seen in Table 1 in detail.

Table 1. Respondent Participation Level

No	Information	Lecturers	Students
1	Questionnaire Filling	76	643
2	Questionnaires that cannot be analyzed	2	1
3	The questionnaire that can be analyzed	74	642

Source: Primary data processing in 2020

Lecturer Respondent

1) Gender of Respondents

Based on the results of the questionnaire from lecturers at the policies who entered, it could be grouped that for the male sex, there were 45 people (59.2%) and 31 women people (40.2%). This means that the proportion of men and women is almost equal. Details of the gender of the respondents are shown in table 2.

Table 2. Gender of Lecturer Respondents

No	Gender	Amount	Percentage
1	Woman	31	40.8%
2	Man	45	59.2%
Total		76	100%

Source: Primary data processing in 2020

2) Teaching experience

The questionnaire results from the attending Polines lecturers can be grouped based on teaching experience for up to 5 years. There are 14 people (18.42%) 6-10 years of teaching experience, as many as 5 people (6.58%) teaching experience 11-15 years, as many as 2 people (2.63%), 16-20 years of teaching experience as many as 6 people (7.89%) and teaching experience over 20 years there are 49 people (64.47%). This means that the majority lecturer respondents with teaching experience of more than 20 years, this means the category of senior lecturers. This can be seen in Table 3 below.

Table 3. Teaching Experience of Respondents Lecturers

No	Teaching experience	Amount	Percentage
1	≤ 5 *tahun*	14	18.42%
2	6 - 10 years	5	6.58%
3	11 – 15 years	2	2.63%
4	16 - 20 years	6	7.89%
5	>20 Years	49	64.47%
Total		76	100%

3) Lecturer Respondent Study Program

Based on the results of the incoming questionnaire, it can be grouped according to the study program of the Polines lecturer respondents, namely the D3 accounting study program as many as 20 people (26.30%), the D3 finance and banking study program 2 people (2.63%) the S.Tr managerial accounting study program 5 students (6.58%), Islamic banking S.Tr study program 6 people (7.89%), computerized accounting S.Tr study program 7 people (9.21%), financial analysis S.Tr study program 3 people (3.95%), D3 Business Administration study program 3 people (3.95%), D3 Marketing Management study program 1 person (1.32%), study program D3 Electrical Engineering 5 people (6.58%), study program S.Tr Telecommunications Engineering 2 people (2.63%), Telecommunication Engineering M.Tr study program 1 person (1.32%), and so on.

Student Respondents

1) Gender of Respondents

Based on the results of the questionnaire from the Polines lecturers who entered, it could be grouped that for the male gender, there were 45 people (59.2%) and 31 women people (40.2%). This follows the conditions in the Department of Accounting, where most students are female.

2) Semester Taken by Student Respondents

Based on the results of the incoming questionnaire, it can be grouped according to the semester in which student respondents are currently being taken, namely semester 1 of 194 people (30.17%), semester 3 of 155 people (24.11%), semester 5 of 134 people (20.84%)), and semester 7 as many as 160 people (24.88%). The results of these data mean that student respondents are almost evenly distributed in each semester. Details of the semester taken by the respondent are shown in Table 4 below.

Table 4. Semester taken by Student Respondents

No	Semester	Amount	Percentage
1	Semester 1	194	30.17%
3	3rd semester	155	24.11%
5	5th semester	134	20.84%
7	7th semester	160	24.88%
Total		643	100%

Source: Primary data processing in 2020

3) Origin of Province of Student Respondents

Based on the results of the incoming questionnaire, the respondents can be grouped according to school origin, namely those from Central Java 600 people (93.31%), from East Java as many as 25 people (3.89%), from West Java 13 people (2, 02%), 1 person came from DKI Jakarta (0.16%), 2 people came from Yogyakarta Special Region (0.31%), 1 person came from the Riau Islands

(0.16%), and 1 came from North Sumatra people (0.16%), Thus most of the student respondents came from the province of Central Java.

The scope of research

The population in this study were all lecturers and students of the Semarang State Polytechnic in 2020. Sampling in this study used a purposive sampling method, meaning that the sample was selected because it met certain criteria (Chin et al., 1988). The criteria used are:

1. Lecturer: is a Polines lecturer where e-learning uses El Nino
2. Students: are students who are registered as polines students

The data type is subject data that can be obtained through a questionnaire. (Lazwardi, 2017; Muryadi, 2017)Judging from the data source, this study uses primary data by distributing questionnaires via Google Forms to both lecturer and student respondents. (Dorobat, 2014).

Data analysis

The research model used for this Elnino effectiveness study is a qualitative descriptive approach. According to (Miles et al., 2018), a qualitative descriptive approach is a research that is intended to obtain an overview, investigate, and explain social influences that cannot be measured and explained by a qualitative approach (Krisbiantoro et al., 2017).

The data source in this study used primary data by collecting 76 lecturer respondents representing 20% of the total number of lecturers owned by the Semarang State Polytechnic and 643 student respondents representing 12% of the total number of students from various majors owned by the Semarang State Polytechnic. This study begins with data collection, then data reduction is carried out using a Likert scale of one to four; the next step is presenting the data, which ends with a conclusion. This refers to the book Qualitative Data Analysis: A Methods Sourcebook and The Coding Manual for Qualitative Researchers by (Miles et al., 2018).

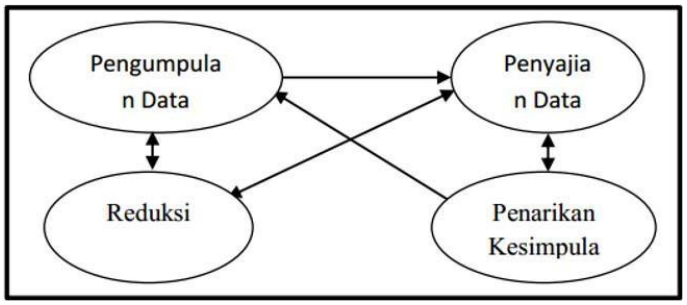


Figure 2. Components of a Qualitative Model

Validity Test

A validity test determines whether the data from the questionnaire results are valid or invalid. If r- r-count is greater than r-table (r-count > r-table) and the value is positive, the statement item is declared valid, and if r-count is less than r-table (r-count < r-table), it is invalid. The data processing results using SPSS 23 to test the validity of all question instruments from the four variables obtained valid results (Friansyah, 2021).

Reliability Test

Questionnaires are said to be reliable or reliable if one's answers to statements are consistent or stable from time to time. A variable is said to be reliable if it gives a Cronbach Alpha value > 0.70 (Ghozali, 2016). Reliability testing is carried out on all statements submitted on each variable. (Dwiastuti, 2017). The following are the results of the reliability test of questionnaire statements in the following studies:

Table 5. Overall Reliability Test Results

No	Variable	*Cronbach Alpha*	Information
1	Learning Content	0.844	*Reliable*
2	Interface	0.738	*Reliable*
3	Feedback and Rating	0.853	*Reliable*
4	Interaction	0.843	*Reliable*

Analysis and Discussion

Lecturer Respondent

1. Elnino Learning Effectiveness (Online)

Table 6. Fill El Nino (Lecturer)

No	Question	Final Score	Index
1	The e-learning system using El Nino provides content that suits your	215	71%
2	The e-learning system using El Nino provides useful content	224	74%
3	The e-learning system using El Nino provides quite complete content	218	72%
4	The e-learning system using El Nino provides up-to-date content	208	68%
Average		216.25	71%

From the lecturer's perspective, Elnino's contents are effective, as can be seen from the average final score of 216 points, of which the maximum points that can be obtained are 304, with an average index of 71%. This can be interpreted as Elnino, which the Semarang State Polytechnic owns, having the required content, complete options, and the latest system for implementing online learning. (Davis, 1989).

Table 7. El Nino Interface (Lecturer)

No	Question	Final Score	Index
1	The e-learning system using El Nino is easy to use	222	73%
2	The e-learning system using El Nino makes it easier for me to find the material I need	211	69%
3	The content provided by e-learning using El Nino is easy to understand	206	68%
4	The operation of the e-learning system is stable and smooth	191	63%
Average		207.5	68%

Elnino's interface, from the perspective of lecturers, is effective, as can be seen from the average final score of 207 points, of which the maximum points that can be obtained is 304, with an average index of 68%. This can be interpreted as Elnino, which the Semarang State Polytechnic owns, already has an easy-to-understand display and easy operation, making it easier to prepare online material. It is just that there are still some complaints about stability and smoothness in use even though it is still in the good category with a score of 191 (Yusof et al., 2008).

Table 8. Elnino Feedback and Rating (Lecturer)

No	Question	Final Score	Index
1	The e-learning system using El Nino makes it easier to evaluate learning performance	209	69%
2	Testing methods such as e-learning tasks using El Nino are easy to understand	207	68%
3	Test methods such as assignments through the e-learning system using El Nino is fair	206	68%
4	The e-learning system using El Nino provides a safe testing environment	208	68%
5	The test method using El Nino gives results quickly	221	73%
Average		210,2	69%

The feedback and assessment provided by Elnino from the lecturer's perspective have had good effectiveness, as can be seen from the average final score of 210 points, of which the maximum points that can be obtained are 304, with an average index of 69%. This can be interpreted as Elnino, which the Semarang State Polytechnic owns, can already accommodate lecturers in conducting performance evaluations, holding exams, giving assignments, and conducting online assessments properly (DeLone & McLean, 2003). Giving an assessment is the most prominent thing because it is considered that the value given is more objective, and the delivery of grades to students is more practical. This can be seen from the index, which reaches 73%.

2. Elnino Interaction Effectiveness

Table 9. Elnino Interaction (Lecturer)

No	Question	Final Score	Index
1	The interaction of the e-learning system using El Nino is clear and easy to understand	204	67%
2	Interaction with e-learning systems using El Nino is flexible	210	69%
3	It is easy to have competence in using e-learning systems in El Nino	194	64%
4	I feel that the e-learning system using El Nino is easy to use compared to other systems	197	65%
Average		201.25	66%

From the lecturer's perspective, Elnino's interaction is effective, although it is the lowest compared to other categories. This can be seen from the average final score obtained, 201 points, with an average index of only 66%. This can be interpreted by Elnino, which Semarang State Polytechnic owns. Although it is already good, some development is still needed to maximize the potential of this Moodle-based system. (Iivari, 2005).

Student Respondents

Learning Effectiveness El-Nino (Online)

Table 10. Fill El Nino (Student)

No	Question	Final Score	Index
1	The e-learning system using El Nino provides content that suits your	1936	75%
2	The e-learning system using El Nino provides useful content	2015	78%
3	The e-learning system using El Nino provides quite complete content	1866	73%
4	The e-learning system using El Nino provides up-to-date content	1931	75%
Average		1937	75%

From the students' point of view, El-Nino's content is effective, as can be seen from the average final score of 1937 points. The maximum point that can be obtained is 2572, with an average index of 71%. This can be interpreted as meaning that Elnino, which the Semarang State Polytechnic owns, has the content needed by students to participate in online learning.

Table 11. El Nino interface (Student)

No	Question	Final Score	Index
1	The e-learning system using El Nino is easy to use	2014	78%
2	The e-learning system using El Nino makes it easier for me to find the material I need	1891	74%
3	The content provided by e-learning using El Nino is easy to understand	1889	73%
4	The operation of the e-learning system is stable and smooth	1715	67%
Average		1877,25	73%

The interface that Elnino has from the point of view of students getting good responses can be seen from the average final score of 1937 points out of the maximum points obtained, which is 2572 with an average index of 71%. This can be interpreted as the Elnino owned by the Semarang State Polytechnic already having an interface that makes it easy without having to take too long or having difficulty learning how to operate the Elnino. (Urbach & Müller, 2012).

Table 12. El-Nino feedback and ratings (Student)

No	Question	Final Score	Index
1	The e-learning system using El Nino makes it easier to evaluate learning performance	1896	74%
2	Testing methods such as e-learning tasks using El Nino are easy to understand	1889	73%
3	Test methods such as assignments through e-learning a system using El Nino is fair	1908	74%
4	The e-learning system using El Nino provides safe testing environment	1918	75%
5	The test method using El Nino gives results quickly	1888	73%
Average		1899,8	74%

Elnino's feedback and assessment from the point of view of students getting good responses can be seen from the average final score of 1899 points from the maximum points obtained, which is 2572 with an average index of 74%. This can be interpreted as Elnino, which Semarang State Polytechnic owns, has assisted students in taking exams and assignments and obtaining an objective assessment. The highest score is on the fourth point, which reaches 75% because during the Covid-19 pandemic when this research was conducted, Elnino was considered a device for participating in safe learning and testing without having to come directly to campus (Roldán & Leal, 2003).

Table 13. Effectiveness of El-Nino Interaction (Student)

No	Question	Final Score	Index
1	The interaction of the e-learning system using El Nino is clear and easy to understand	1836	71%
2	Interaction with e-learning systems using El Nino is flexible	1975	77%
3	It is easy to have competence in using e-learning systems, elNino	1863	72%
4	I feel that the e-learning system using El Nino is easy to use compared to other systems	1878	73%
Average		1888	73%

The interaction provided by Elnino from the student's point of view has a good response, as can be seen from the average final score obtained, which is 1888 points with an average index of only 73%. This can be interpreted that students gain new interaction experience with Elnino in the form of flexibility (77%) and find it easier to use than other systems (73%) (Bashir, 2019; Sandybayev, 2020).

CONCLUSION

From these results, the overall average index obtained from lecturer respondents was 69%, while the overall average index obtained from student respondents was 73%. So that it can be obtained the overall average index for all respondents, both lecturers and students, of 71%. This indicates that Elnino, owned by the Semarang State Polytechnic, has been effective in helping with online lectures during the COVID-19 pandemic in 2020. It is just that the 71% index number also indicates that there is still much to be improved and developed so that Elnino can reach its maximum potential in assisting the effectiveness of learning at Semarang State Polytechnic. It would be more effective if Elnino became a single learning device (a one-stop learning device).

Based on the research results related to the obstacles faced by lecturers and students in using Elnino, it turns out that they have the same two main obstacles, namely network/signal problems and problems related to limitations in explaining lecture material. Based on these two things, the researcher's suggestions for Elnino are (1) adding and strengthening the server used by Elnino so that the connection remains smooth when used by many classes simultaneously and (2) developing and maximizing Moodle's options in Elnino, such as video-conferencing feature.

Suggestions for further research are also given, including (1) Examining the long-term impact of e-learning on the work readiness of polytechnic students, especially in fields that require practical skills. This research can provide insight into whether e-learning can support the development of skills by industry needs and (2) Examine how polytechnic curricula can be designed or adapted to support e-learning optimally, including how to align the core competencies needed with digital teaching methods.

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