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Analysis Effectiveness of the Learning Online During Covid-19, A Case Study of Electrical Engineering Students at Manado State Polytechnic

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ABSTRACT

This research aims to analyze the effectiveness of Learning (Online) after Covid-19: Concepts, Platforms, and Implementation of the Electrical Engineering Department students. To describe and measure students' attitudes towards using technology, tool/learning aids, and learning activities using the internet, interactive with lecturers, group learning, and self-study. The application of learning in the network (online) is carried out massively in the future Covid-19 pandemic. Its implementation brings up a lot of new things, especially for areas with minimal internet access. For this reason, it is necessary to conduct a study what are the views of students in carrying out online learning. The study was determined by student perceptions in the implementation of learning online during the Covid-19 pandemic in areas with minimal internet access. The type of this research is qualitative descriptive research, where the research subject is a student at Engineering Department Manado State Polytechnics. This research is done through four stages, namely (1) data collection, (2) data reduction data, (3) data presentation, (4) concluding. The instrument used is a questionnaire/questionnaire consisting of 21 questions. Data analysis was carried out by descriptive. The study results indicate that students have different perceptions of various aspects of the implementation of online lectures. These perceptions include perception of online learning infrastructure by 67%, learning skills online by 78%, perceptions of the quality of online academic interactions by 69%, benefits of online learning by 56%, obstacles faced by 45%, factors supporting online learning by 48%, and expectations of future online learning by 57%. This research concludes that various student perceptions in online education during the Covid-19 pandemic range from infrastructure, quality interactions, and student benefits.

Keywords

Analysis, effectiveness, implementations, learning online

1. INTRODUCTION

The concept study that can be used as a solution during the COVID-19 pandemic is online learning. The practice of online education is carried out by various levels of education from elementary, middle, high school to university levels. There are no more learning activities in classrooms as is usually done by educators: teachers and lecturers. The right step but without adequate preparation. The government minimizes the spread of Covid-19 in addition to limiting human encounters in large numbers. According to Anggrawan A. (2019), Face-to-face and online learning models have advantages and disadvantages in supporting student learning styles. Student learning styles represent what students like in

learning and affect student learning outcomes [1]. School is a teaching and learning space between students and teachers; activities limit students and lecturers. The direct face-to-face learning process held in every classroom was stopped. The termination of the face-to-face learning process is one of the decisive actions set by the government to break the chain of the spread of COVID-19 through the world of education. [www.kompas.com] the following learning process is carried out using the Distance Learning (PJJ) method. E-learning is an electronic-based learning process used by the education of Manado State Polytechnic. Web-based learning can be accessed at the e-learning Polimdo. All those involved in this online learning activity can log in through their respective accounts.

Based on the background, the problems raised in this study are to analyze the effectiveness of online learning after covid-19 on concepts, platforms and implementations for students majoring in Electrical Engineering to identify the point of online learning after covid-19: the use of e-learning, ideas, media and performance in the Electrical Engineering department

Research Objectives are to analyzing the effectiveness of online learning on concepts, platforms and implementations for students majoring in Electrical Engineering and identify the practice of online learning concepts, media, feature and implementation of online learning during the covid-19 period.

2. METHOD

This research is a qualitative descriptive study and describes students' perceptions of online learning by the network. This research was conducted on Electrical Engineering students. The object of study is students' perceptions regarding the implementation of online learning during the Covid-19 period. This research is conducted in four stages, namely (1) data collection, (2) data reduction, (3) data presentation, (4) concluding data collection using two research instruments, namely questionnaires and interview guides. Data reduction in this study will continuously after field research until the information is complete. Data presentation is carried out to display descriptive data from the results of the questionnaire given. The conclusion stage is the final stage of research to answer how students perceive online learning implementation during the Covid-19 period.

The instrument used a questionnaire that consisted of 7 perceptual indicators, which were scattered into 21 questions. These perception indicators are online learning infrastructure, online learning skills, perceptions of the quality of online academic interactions, benefits of online learning, obstacles faced, supporting factors for online learning, and expectations of future online learning..

3. RESULT AND DISCUSSION

Humans are accustomed to thinking visually or having graphical images in their brains, even though the information received is verbal. Visual perception can affect the forms of imagination in his mind that are influenced by previous knowledge and experience even though verbal messages are conveyed (Abbasi et al., 2020). To be done online learning, lecturers must prepare learning modules.

Modules designed by lecturers must meet the following requirements: (1) have clear, specific, observable, and measurable learning objectives to change learner behavior and (2) the module's content is relevant to the needs of students, society, and the world of education: Work, or the world of Education (Pratiwi, 2020)..

Of course, the modules prepared by the lecturer follow the curriculum and syllabus. The lecture design is the same as the face-to-face lecture design. For example, it takes 16 weeks for a semester, including two weeks for the midterm and final exams. The online mode of learning design is the same as the face-to-face mode. It's just that the difference is online mode learning using internet media (Pratiwi, 2020). Online mode learning is the use of the internet network by students in the learning process. The online mode learning approach has the following characteristics: (1) requires students to build and create knowledge independently (constructivism), (2) students will collaborate with other students in building their knowledge and solving problems together (social constructivism), (3) forming an inclusive learning community, (4) utilizing website media that can be accessed via the internet, computer-based learning, virtual classes, and digital classes; (5) Interactivity, independence, accessibility, and enrichment (Directorate General of GTK Kemendikbud, 2016). Through the online learning model, students have the flexibility to study time. Students can learn anytime and anywhere. Students can interact with lecturers simultaneously, earning interactions. Details of the student perception are presented in Table 1

Table 1. Student Perception

No	Student Perception	Point	Percent ages
1	Perceptions of online learning infrastructure	Objectives	67%
2	Online learning skills	Scale 1-5	78%
3	Perceptions of the quality of online academic interactions	Objectives	69%
4	Benefits of online learning	Scale 1-5	56%
5	Obstacles encountered	Scale 1-5	45%
6	Supporting factors for online learning	Scale 1-5	48%
7	Expectations for online learning in the future	Scale 1-5	57%

The understanding of students during online lectures according to data analysis has advantages and disadvantages, are presented in Table 2a, and 2b:

Table 2. Student Perception during online

Advantages of online learning according to students	
no need for preparation	80,80%
more flexible and relaxed	72,20%
new experience	47,70%
Documented and releasable material	32,20%
Dare to ask questions and discuss	26,80%

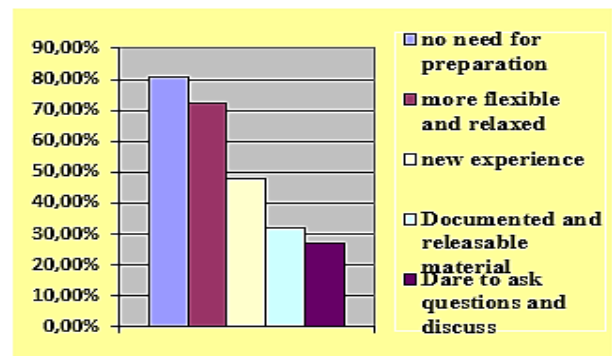


Fig 1: Advantages of the student during online learning

Table 2b. Student Perception

Disadvantages of online learning according to students	
Internet network	76,2
Frequent Tasks online	67,1
Concentration decreased	63,7
Overload Duty	61,2
Lecturers are less interactive and communicative	26,7

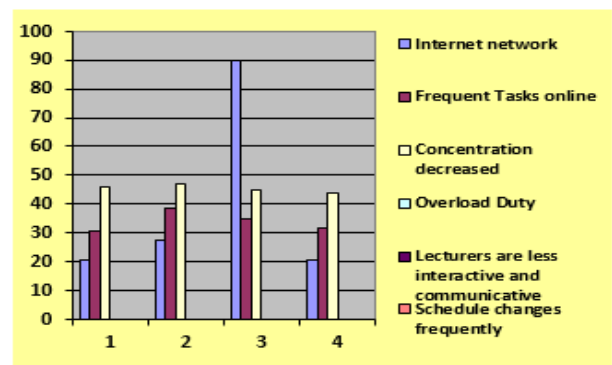


Fig 2 Disadvantages of the student during online learning.

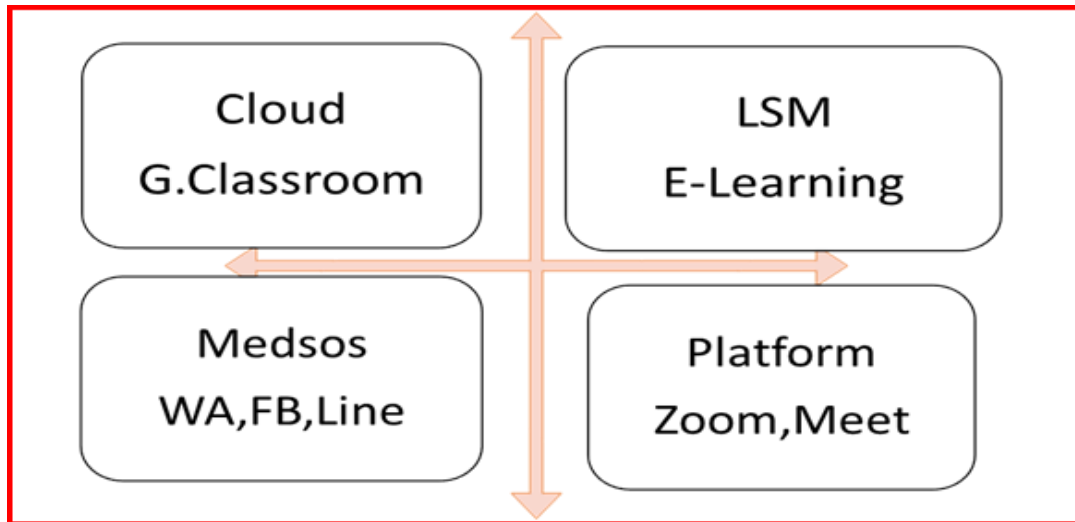


Fig 3: Effectiveness Features of Learning Online

4. CONCLUSION

The results of this research conducted show that students have different perceptions of learning online by lectures. These perceptions include perceptions of online learning infrastructure 57%, online learning skills 67%, perceptions of the quality of online academic interactions 78%, benefits of online learning 69%, obstacles faced 56%, supporting factors for online learning 45%, and future online learning expectations of 48%. The positive side obtained from student statements is the ease in carrying out lectures, maximum interaction, good feedback given by the lecturer. However, there are opposing sides, including limited network usage, expensive quotas, and interrupted network electricity. From this research, several studies were found to be used as a reference in researching the future. (1) It is necessary to know the effectiveness of online learning, especially for students in areas with minimal internet, (2) From the perceived constraints of students, it is necessary to develop the best learning mode in minimal internet situations.

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