



COMPARISON OF THE EFFECT OF E-LEARNING ON LEARNING OUTCOMES STUDENTS DEPARTMENT OF ENGINEERING AND MANAGEMENT MAJORING IN MERCU BUANA UNIVERSITY

Viciwati Viciwati¹

Corresponding Author: Viciwati

Abstract: In today's digital era, it affects all aspects, including in the world of education. Some students do not only study on campus but they also learn by e-learning. However, since the corona pandemic, all the world of education has been carried out using e-learning. Seeing this phenomenon, the authors need to examine the comparison of Learning Outcomes between engineering and non-technical students because engineering students certainly need practical learning while non-technical children in this case such as management can learn E learning. The test used is the Independent Sample T test because the data is normally distributed. The results showed that there was no difference in learning outcomes between children from the management department or from the engineering department as a whole. However, if you look at it per statement, you can see that there is only one statement that differs significantly between the answers from management students and engineering students, namely the statement about I use e-learning as a complement to this learning, which means that the answers of students majoring in management are on average higher than the average. the answer of students majoring in engineering, meaning that more management students use e-learning to complement their learning.

Keywords: e- learning, Knowledge of e-learning, Characteristics of e-learning, The advantages of e- learning and Weaknesses of e-learning

INTRODUCTION

Since the outbreak of the pandemic caused by the Coronavirus in Indonesia, the government has taken many ways to prevent its spread. One of them is through a circular letter from the Ministry of Education and Culture (Kemendikbud) Directorate of Higher Education No. 1 of 2020 regarding the prevention of the spread of Corona Virus Disease (Covid-19) in universities. Through this circular, the Ministry of Education and Culture gave instructions to universities to conduct distance learning and advised students to study from their homes (Firman, 2020: 81). The distance learning system is carried out online by relying on information and communication technology. There are several kinds of applications that are used during online learning during the Covid-19 pandemic, including Google Classroom, WhatsApp, Meet, Zoom, Schoology, etc This application can make it easier for lecturers and students to carry out an online learning system. However, online learning still has many

obstacles such as signal interference, inadequate internet quota, and so on.

Distance learning is also still less effective than face-to-face learning. This is because students who study exact sciences will find it difficult to understand exact science concepts properly and correctly so that it becomes a challenge for students who study these sciences, especially in the field of engineering. Not only the difficulty in understanding the concept, but also the students who should do the practicum actually become hampered. However, there are some universities that implement online practicum through available applications or websites. There are also those who apply it by analyzing the videos found on the internet. Of course, this is still not optimal, because it cannot be practiced directly. Non-exact students, such as management, are easier to adapt because of the large amount of material being studied, rarely practicing like engineering students

LITERATURE REVIEW

Understanding E-Learning

The term e-learning has a very broad definition. e-learning consists of the letter e which stands for electronic and learning which means learning. Thus e-learning can be interpreted as learning by utilizing the help of electronic devices, especially computer devices. In terminology, e-learning is a learning process that is carried out through a network (computer network), usually via the internet or intranet. E-learning means the process of transforming learning from teacher-centered to learner-centered. Learning does not depend on the teacher, because access to information (knowledge) is wider and more complete so that learners can learn anytime and anywhere. learning through e-learning can take place anytime, anywhere, through any path at any speed. In this learning, teachers and students do not need to be in the same place and time to carry out the learning process, but it is enough to use the internet as a medium. Teachers simply upload learning material data on the e-learning site. Students can learn learning materials from the teacher concerned by opening the e-learning site. E-learning is very developed because it does not require high costs but has a wide reach, because e-learning can reach all over the world without being limited by geographical conditions, making it easier to convey learning information.

Characteristics of E-Learning

E-learning is not the same as conventional learning. E-learning has the following characteristics: (Ibid., Munir, Op.Cit, p. 170)

- a. Interactivity, the availability of more channels, either directly such as chat or messenger or indirectly, such as forums, mailing lists or guest books.
- b. Independence, flexibility in terms of providing time, place, teachers and teaching materials. This causes learning to be more student-centered.
- c. Accessibility, learning resources become more accessible through distribution on the internet network with wider access than the distribution of learning resources in conventional learning.
- d. Enrichment, learning activities, presentation of lecture materials and training materials as enrichment, enabling the use of information technology devices such as video streaming, simulation and animatio

The advantages and disadvantages of e-learning according to Rusman (2001) are as follows:

1. Availability of e-moderating facilities where teachers and students can communicate easily through internet facilities on a regular basis or whenever communication activities are carried out without being limited by distance, place, and time.
2. Teachers and students can use teaching materials or structured and scheduled study instructions via the internet, so that everyone can assess each other to what extent the teaching materials are studied.
3. Students can study or review lecture materials at any time and anywhere if needed considering that teaching materials are stored on the computer.
4. If students need additional information related to the material they are studying, they can access the internet more easily.
5. Both teachers and students can conduct discussions via the internet which can be followed by a large number of participants, thereby adding to knowledge and broader insight.
6. Changes in the role of students from being passive to being active and more independent.
7. Relatively more efficient, for example for those who live far from school or college.

However, the use of the internet for learning or e-learning is also inseparable from various shortcomings. Various criticisms about e-learning, among others:

1. Lack of interaction between teachers and students or even between students themselves. This lack of interaction can slow down the formation of values in the learning process
2. The tendency to ignore psychomotor or social aspects and instead encourage the growth of commercial aspects.
3. The learning process tends towards training rather than education.
4. Changes in the role of teachers from previously mastering conventional learning techniques are now also required to know learning techniques based on ICT.
5. Students who do not have high learning motivation tend to fail.
6. Not all places have internet or network facilities.

E-Learning Dimensions and Indicators

The dimensions measured in this comparative study are as follows:

Lack of personnel who know and have the skills to operate the internet.

Table 1. Operational Definition

Variabel	Sub Variabel	Indikator	Statemen
Learning with E-Learning	Knowledge of e-learning Munir (2009)	Implementation of e-learning	1, 2, 3
	Characteristics of e-learning Munir (2009)	Interactivity	4
		Independence	5, 6, 7
		Enrichment	9, 10
		Ease of communication	11

The advantages of e-learning Rusman (2011)	Ease of obtaining teaching materials	12, 13
	Ease of reviewing lessons	14
	Students become active and independent	15
Weaknesses of e-learning (Rusman, 2011)	Less interaction	16

Research Framework

Based on the theories that have been reviewed and the hypotheses that have been developed, the research framework for the conduct of the study might be proposed as follows:

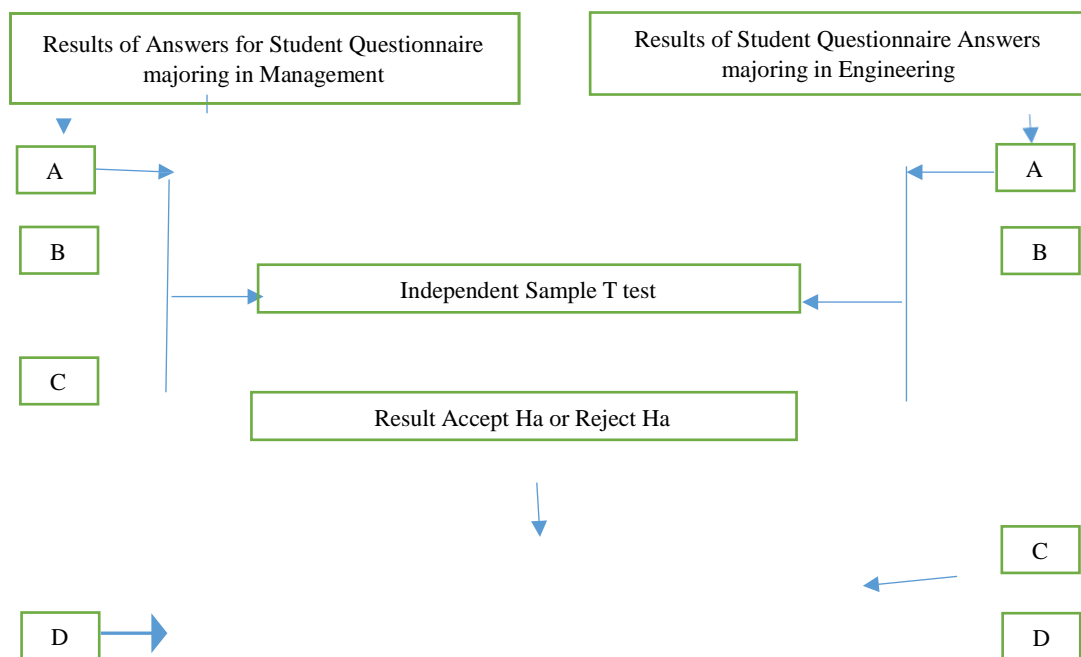


Figure 1
Thinking Framework for Hypothesis Testing Differences in Learning Outcomes between Engineering majors and Management majors

Information :

A = Knowledge of e-learning

B = Characteristics of e-learning

C = .The advantages of e-learning

D = Weaknesses of e-learning

The Differential Test Hypothesis is as follows:

Ha : There are differences in the effect of e learning on the learning outcomes of students majoring in engineering and students majoring in management

RESEARCH METHOD

Data and Data Collection Methods

The type of data in this study is quantitative data, namely data in the form of numbers. While the datasources in this study include:

- Primary data, namely data are taken directly from the source (research object). In this research, data is taken from questionnaires filled out by respondents directly.
- Secondary data is primary data that has been obtained or available by other parties which is useful to provide additional images, descriptions of other parties that are useful for further processing.

Method of collecting data

The source of data in this study is primary data (Primary Data). Primary data is the source of research data obtained directly from the original source (not through intermediaries) (Indriantoro and Supomo, 1997). Primary data is specifically collected by researchers to answer research questions. The research was conducted by distributing online questionnaires using Google forms.

Table 2. Operational Indicator Variable

Variabel	Sub Variabel	Indikator	Scale
Learning with E-Learning	Knowledge of e-learning Munir (2009)	Implementation of e-learning	Likert (1 – 5)
	Characteristics of e-learning Munir (2009)	Interactivity	Likert (1 – 5)
		Independence	Likert (1 – 5)
		Accessibility	Likert (1 – 5)
		Enrichment	Likert (1 – 5)
		Ease of communication	Likert (1 – 5)
	The advantages of e-learning Rusman (2011)	Ease of obtaining teaching materials	Likert (1 – 5)
		Ease of reviewing lessons	Likert (1 – 5)
		Students become active and independent	Likert (1 – 5)
	Weaknesses of e-learning (Rusman, 2011)	Less interaction	Likert (1 – 5)

Sampling Method

The sampling method used is non-probability sampling which uses a purposive sampling method in which researchers take samples with an existing purpose and a previous plan is available (Sugiyono, 2014). at Mercu Buana who have experienced E-learning spending in the engineering and management department, as for Determining the number of representative samples according to Hair et al. (1995 in Kiswati 2010) is dependent on the number of indicators multiplied by 5 Likert scales. The number of samples in this study are:

Sample = number of indicators x 5
 Sample = 16 indicators x 5
 Sample = 80

This number is the minimum number of samples, if possible the number of samples can be more than 80 respondents divided into at least 40 students majoring in Engineering and 40 students from majoring in Management.

From the above calculation, the minimum number of samples was 90 respondents and these respondents later were selected based on the following considerations:

1. The respondents are students at Mercu Buana University.
2. The respondents minimum 40 students from management and minimum 40 students from technique

All of the tests or the calculation processes in the study were assisted by SPSS Version 20 program. Then, the normality test was conducted first in the study in order to identify whether the data had been normally distributed or not. Then, the subsequent tests or calculation processes were conducted by means of parametric statistical differential test method (Independent Sample t-Test)

Data collection technique

The data collection method used a questionnaire that was distributed to respondents according to the criteria by Google Form. In this study, 5 levels of scale were used, namely:

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree

The data analysis technique used in this study was the Independent Sample T test with the help of SPSS Version 20 and use Likert.

Data Analysis Techniques

Research Instrument Test

Descriptive Analysis

Descriptive analysis is an analysis that provides an overview of a situation regarding data or observations that have been carried out by collecting, summarizing, and presenting data so as to provide useful results. The aim is to provide an overview of the data so that the data presented can be understood and informative for people who read it.

Data Quality Analysis

Analysis of data quality using normality test which aims to test whether the data used are normally distributed. The test uses the Kolmogorov-Smirnov with the assumption of normality at the significance number (sig 2-tailed) > 0.05 and vice versa.

Hypothesis: Ho : Data is normally distributed
 Ha : Data are not normally distributed

Test Statistics : Kolmogorov-Smirnov Test Criteria :

- c. If sig > 0.05 then Ho is accepted
- d. If sig < 0.05 then Ho is rejected

Independent T-test

The Independent T test is a parametric test used to test whether two sample means from the population have the same value. Independent T-test is used on research data that are normally distributed.

H₀ : X₁ = X₂ This means that there is no difference in the effect of e learning on student learning outcomes majoring in engineering with students majoring in management at Mercu Buana University

H_a : X₁ ≠ X₂ This means that there is a difference in the effect of e learning on student learning outcomes majoring in engineering with students majoring in management at Mercu Buana University

Test: Independent T test:

- c. If sig (2-tailed) > 0.05, then Ho is accepted
- d. If sig (2-tailed) < 0.05, then Ho is rejected

RESULTS AND DISCUSSION

Research result

The results of the study were divided into 5, namely descriptive statistics for respondents, descriptive data statements, validity and reliability tests, data normality tests and data hypothesis tests.

Descriptive Statistics of Research Respondents' data

Descriptive statistical data of respondents is divided into two, namely for respondents from the management department and respondents from the engineering department, the results can be seen in the tables below:

Table 3. Descriptive Results of Respondents Statistics by Gender

Gender	Management		Engineering	
	Frequency	Percentage	Frequency	Percentage
Men	21	42	31	62
Women	29	58	19	38
Total	50	100	50	100

Based on gender, it can be seen that 50 respondents from the management department were more female than male, namely 29 women and 21 men. Meanwhile, 50 respondents from engineering majors were more male than female, namely 31 men and 19 women. This is natural because more men than women enter engineering majors, women tend to choose other majors such as management.

Table 4. Descriptive Results of Respondents Statistics by Age

Age	Management		Engineering	
	Frequency	Percentage	Frequency	Percentage

< 20 Year	4	8	1	2
20 - 23 Year	28	56	10	20
> 23 Year	18	36	39	78
Total	50	100	50	100

Furthermore, descriptively based on age, respondents were from the management department, respondents aged between 20-23 years were as many as 28 people, while most respondents from the engineering department were more than 23 years old.

Table 5. Descriptive Results of Respondents Statistics by Semester

Semester	Management		Engineering	
	Frequency	Percentage	Frequency	Percentage
< 2	2	4	2	4
2 - 5	11	22	23	46
> 5	37	74	25	50
Total	50	100	50	100

The next statistical descriptive of respondents is based on the semester currently taken, seen in the table below, it can be seen that respondents from the management and engineering majors are mostly taking more than the 5th semester

Descriptive Statistics Research Statement Data Data

Descriptive statistics for statements from respondents' answers are shown below:

Table 6. Descriptive Results of Research Statement Statistics

Table 6. Descriptive Statistics

Code	Statement	Management			Engineering		
		Min	Max	Mean	Min	Max	Mean
EL1	I use the wifi facilities on campus for learning facilities	1	5	2,72	1	5	3,28
EL2	I learned to use the internet as a source of information	3	5	4,44	1	5	4,36
EL3	3. I use e-learning to complement my learning	2	5	4,32	1	5	3,64
EL4	I communicate with teachers or friends regarding lessons using an internet connection	1	5	4,20	4	5	4,30
EL5	5. I can study independently by using e-learning	1	5	3,72	2	5	3,38
EL6	6. I read the subject matter before the teacher delivers it in class through e-learning.	1	5	3,64	1	5	3,42
EL7	7. I do the assignments given by the teacher easily by using e-learning.	1	5	3,70	1	5	3,30
EL8	8. It is easier for me to understand the subject matter provided in e-learning.	1	5	3,18	1	5	2,88
EL9	9. I can work on e-learning questions given by the teacher	1	5	3,76	2	5	3,50

EL10	10. I can find practice questions through sites on the internet	1	5	3,92	2	5	4,08
EL11	11. I can communicate with teachers and other friends easily without being limited by distance temp and time through e-learning	1	5	3,84	2	5	3,68
EL12	12. I can communicate with teachers and other friends easily without being limited by distance time and time through e-learning	1	5	3,68	2	5	3,86
EL13	13. I can get additional information relatedto the subject matter through the internet more easily	1	5	3,96	3	5	4,06
EL14	14. I can study or review the subject matter anytime and anywhere through an internet connection	2	5	4,04	2	5	4,08
EL15	15. I become more active and independent because of e-learning	1	5	3,58	2	5	3,68
EL16	16. I am not really close/familiar with teachers and friends because I use e-learning	1	5	3,54	1	5	3,76

Based on the table above, it can be seen that the statement with the code EL2 in the answers of respondents from the management department is about me learning to use the internet as a source of information, namely no one answered disagree or strongly disagree.

Validity and Reliability Test

Validity for Department of Management and Engineering data

Based on the validity test conducted on data management and techniques, the following results were obtained:

Table 7. Results of Data Validity Test for Management and Engineering

Code	r-table	Management r-critis	Conclution	Engineering r-critis	Conclution
EL1	0,273	0,574**	Valid	0,438**	Valid
EL2	0,273	0,290	Valid	0,504**	Valid
EL3	0,273	0,387**	Valid	0,479**	Valid
EL4	0,273	0,441**	Valid	0,281*	Valid
EL5	0,273	0,777**	Valid	0,651**	Valid
EL6	0,273	0,798**	Valid	0,299*	Valid
EL7	0,273	0,837**	Valid	0,688**	Valid
EL8	0,273	0,728**	Valid	0,438**	Valid
EL9	0,273	,853**	Valid	0,667**	Valid
EL10	0,273	,605**	Valid	0,518**	Valid
EL11	0,273	,747**	Valid	0,502**	Valid
EL12	0,273	,825**	Valid	0,740**	Valid
EL13	0,273	,840**	Valid	0,295*	Valid

EL14	0,273	,659**	Valid	0,486**	Valid
EL15	0,273	,827**	Valid	0,428**	Valid
EL16	0,273	0,177	Valid	0,279*	Valid

Based on the table above, it can be seen that the r-critis value for both the data for management and engineering has an r-Critis value > from the r-table so it can be concluded that all statements both management and engineering are valid.

Reliability for Data Management and Engineering

Based on the reliability tests carried out on data management and Engineering , the following results are obtained:

Table 8. Results of Data Reliability Test for Management and Department Management Department Data Reliability Test Results

Reliability Statistics	
Cronbach's Alpha	N of Items
,902	16

Engineering Department Data Reliability Test Results

Reliability Statistics

Cronbach's Alpha	N of Items
,725	16

The results of the reliability test show that the Cronbach Alpha value of the two data above is greater than 0.6, meaning that both data are reliable.

Normality Test of Research Hypothesis

Uji Normalitas Data

Following are the results of the Normality test for the Questionnaire data majoring in Management and Engineering:

Table 9. Normality Result One-Sample Kolmogorov-Smirnov Test

		Manajemen	Teknik
N		50	50
Normal Parameters ^{a,b}	Mean	3,78	3,71
	Std. Deviation	,650	,429
Most Extreme Differences	Absolute	,144	,149
	Positive	,144	,125
	Negative	-,112	-,149
Kolmogorov-Smirnov Z		1,021	1,052
Asymp. Sig. (2-tailed)		,248	,218

a. Test distribution is Normal.

b. Calculated from data.

Asym Value. Signature. (2-tailed) for both Management and Engineering majors, it looks greater (>) than 0.05, which means we accept the HO hypothesis, namely the research data is normally distributed so that an Independent T-test can be performed.

Research Hypothesis Test

After we carry out the tests carried out as a condition for conducting the Independent T-test, then based on the test results, the following results are obtained:

Table 10. Overall Independent T-test results Calculated from data.

Group Statistics

	Code	N	Mean	Std. Deviation	Std. Error Mean
Major	Management	50	3,78	,650	,092
	Engineering	50	3,71	,429	,061

Based on the output above, it can be seen that the average overall management statement is slightly higher than the average statement from technical respondents, but the average score for both management and technical statements is still below 4 (Agree).

Table 11. Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Major	2,951	,089	,563	98	,575	,062	,110	-,157	,281
			,563	84,798	,575	,062	,110	-,157	,281

Untuk menjawab hipotesa penelitian maka berdasarkan output di atas terlihat nilai Sig. (2-tailed) pada Equal variances not To answer the research hypothesis, based on the output above, it can be seen that the value of Sig. (2-tailed) on Equal variances not assumed is greater than 0.05, which is 0.575, so we accept the Ho hypothesis that there is no difference in the average value of the statement from the management department and the engineering department. If we want to see which statement is different then we can do an independent t test for each statement as shown in the table below:

**Table 12. Recapitulation of T test per Statement
Independent Samples Test**

	Levene's Test for Equality of Variances		t-test for Equality of Means							
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper	
EL1	Equal variances assumed	0,06	0,81	-1,88	98	0,064	-0,56	0,298	-1,15	0,032
	Equal variances not assumed			-1,88	97,99	0,064	-0,56	0,298	-1,15	0,032
EL2	Equal variances assumed	0,82	0,37	0,512	98	0,610	0,08	0,156	-0,23	0,39
	Equal variances			0,512	88,85	0,610	0,08	0,156	-0,23	0,39

not assumed										
EL3	Equal variances assumed	1,51	0,22	3,801	98	0,000	0,68	0,179	0,325	1,035
	Equal variances not assumed			3,801	93,78	0,000	0,68	0,179	0,325	1,035
EL4	Equal variances assumed	15,4	0	-0,59	98	0,557	-0,1	0,17	-0,44	0,237
	Equal variances not assumed			-0,59	65,64	0,558	-0,1	0,17	-0,44	0,239
EL5	Equal variances assumed	0,04	0,84	1,651	98	0,102	0,34	0,206	-0,07	0,749
	Equal variances not assumed			1,651	96,65	0,102	0,34	0,206	-0,07	0,749
EL6	Equal variances assumed	0,51	0,48	1,15	98	0,253	0,22	0,191	-0,16	0,6
	Equal variances not assumed			1,15	96,95	0,253	0,22	0,191	-0,16	0,6
EL7	Equal variances assumed	0,63	0,43	1,863	98	0,066	0,4	0,215	-0,03	0,826
	Equal variances not assumed			1,863	97,88	0,066	0,4	0,215	-0,03	0,826
EL8	Equal variances assumed	0,32	0,57	1,289	98	0,200	0,3	0,233	-0,16	0,762
	Equal variances not assumed			1,289	97,98	0,200	0,3	0,233	-0,16	0,762
EL9	Equal variances assumed	0,31	0,58	1,33	98	0,187	0,26	0,195	-0,13	0,648
	Equal variances			1,33	97,76	0,187	0,26	0,195	-0,13	0,648

not assumed									
Equal variances assumed	1,11	0,3	-0,98	98	0,330	-0,16	0,163	-0,48	0,164
EL1 Equal variances not assumed			-0,98	95,76	0,330	-0,16	0,163	-0,48	0,164
Equal variances assumed	0,03	0,86	0,827	98	0,410	0,16	0,193	-0,22	0,544
EL1 Equal variances not assumed			0,827	96,88	0,410	0,16	0,193	-0,22	0,544
Equal variances assumed	4,26	0,04	-0,97	98	0,336	-0,18	0,186	-0,55	0,189
EL12 Equal variances not assumed			-0,97	92,42	0,336	-0,18	0,186	-0,55	0,19
Equal variances assumed	3,08	0,08	-0,67	98	0,505	-0,1	0,149	-0,4	0,197
EL13 Equal variances not assumed			-0,67	80,98	0,505	-0,1	0,149	-0,4	0,197
Equal variances assumed	0,04	0,83	-0,27	98	0,791	-0,04	0,151	-0,34	0,259
EL14 Equal variances not assumed			-0,27	98	0,791	-0,04	0,151	-0,34	0,259
Equal variances assumed	0,22	0,64	-0,54	98	0,588	-0,1	0,184	-0,47	0,265
EL15 Equal variances not assumed			-0,54	96,79	0,588	-0,1	0,184	-0,47	0,265
Equal variances assumed	0,01	0,94	-0,86	98	0,394	-0,22	0,257	-0,73	0,29
EL16 assumed									

Equal			-0,86	97,72	0,394	-0,22	0,257	-0,73	0,29
not assu									
variances									

Based on the table above, it can be seen that almost all statements given to students majoring in management and engineering did not differ significantly except for the statement with the EL3 code which stated about the use of e-learning as a complement in learning where the average answer from the management department (4.32) is higher than the average of engineering majors (3.64). This shows that students majoring in management mostly use e-learning to complete the learning process compared to students majoring in engineering. While the answers that are not much different are statements with code EL14, namely student statements when studying or reviewing subject matter at any time and anywhere via an internet connection, where the average for the management major is 4.04 while the engineering major is 4.08. This means that both management and engineering students who use the internet can review subject matter wherever they are.

From the 16 statements, we can also see which statements have a low average and a high average. This can be seen in the table below:

Table 13. Recapitulation of Means and T-test Significance of Research Statements

Code	Statements	Management			Engineering			T test Sig. (2-tailed)
		Min	Max	Mean	Min	Max	Mean	
EL1	I use the wifi facilities on campus for learning facilities	1	5	2,72	1	5	3,28	0,064
EL2	I learned to use the internet as a source of information	3	5	4,44	1	5	4,36	0,610
EL3	I use e-learning to complement my learning	2	5	4,32	1	5	3,64	0,000
EL4	I communicate with teachers or friends regarding lessons using an internet connection	1	5	4,20	4	5	4,30	0,557
EL5	I can study independently by using e-learning	1	5	3,72	2	5	3,38	0,102
EL6	I read the subject matter before the teacher delivers it in class through e-learning.	1	5	3,64	1	5	3,42	0,253
EL7	I do the assignments given by the teacher easily by using e-learning.	1	5	3,70	1	5	3,30	0,066
EL8	It is easier for me to understand the subject matter provided in e-learning.	1	5	3,18	1	5	2,88	0,200

EL9	I can work on e-learning questions given by the teacher	1	5	3,76	2	5	3,50	0,187
EL10	I can find practice questions through sites on the internet	1	5	3,92	2	5	4,08	0,330
EL11	I can communicate with teachers and other friends easily without being limited by distance, temp and time through e-learning	1	5	3,84	2	5	3,68	0,410
EL12	I can communicate with teachers and other friends easily without being limited by distance, time and time through e-learning	1	5	3,68	2	5	3,86	0,336
EL13	I can get additional information related to the subject matter through the internet more easily	1	5	3,96	3	5	4,06	0,505
EL14	I can study or review the subject matter anytime and anywhere through an internet connection	2	5	4,04	2	5	4,08	0,791
EL15	I become more active and independent because of e- learning	1	5	3,58	2	5	3,68	0,588
EL16	I am not really close/familiar with teachers and friends because I use e-learning	1	5	3,54	1	5	3,76	0,394

Average

3.77

3.70

Based on the table above, it can be seen that the lowest average is the statement answered by students majoring in management for statements with the EL1 code, namely I use wifi facilities on campus for learning facilities, with an average value of 2.73. This makes it possible for more students to have their own internet access. The answer The statement that has another low average is for the EL8 statement, namely, I find it easier to understand the subject matter provided in e-learning, which is 2.88 from students majoring in engineering. give it online, especially if there are practical assignments that are usually done together and get direct supervision from the teacher.

RESULT AND DISCUSSION

RESULTS OF THE COMPARISON OF E-LEARNING EFFECTS ON STUDENTS' RESULTS IN ENGINEERING DEPARTMENT AND MANAGEMENT DEPARTMENTS UNIVERSITY OF MERCU BUANA showed that there was no difference in learning outcomes between students majoring in management and majoring in engineering as a whole. However, when viewed per statement, it appears that there is only one statement that differs

significantly between the answers of management students and engineering students, namely the statement about me using e-learning as a complement to this learning, which means that the average answer of management students is higher than the average. flat. the answer of students majoring in engineering, it means that management students use e-learning more to complete their learning.

For answers to other statements it can be seen that the average value of the lowest answer is that I use the wifi facility in the dictionary for learning facilities, where the answer from students majoring in management is 2.72, this is because with the covid 19, all students use their own wifi in learning While the lowest statement is statement I easier to understand the subject matter given in e-learning. The answer of students majoring in engineering has the lowest answer, which is 2.88. The material for engineering students is indeed quite difficult so that sometimes they have difficulty understanding the subject matter, for that it is necessary to have support from the lecturer in charge of the course. Suryati 2011 in the results of his research stated that with all the conveniences and advantages provided by the E-Learning learning application. It should be understood that internet/E-learning technology only acts as a tool/media which if used in learning will help a lot, but the use of technology in the learning process cannot take over the entire role of a teacher/teacher.

The statement that has the highest average score from both engineering and management majors is that I communicate with teachers or friends about lessons using an internet connection, the answers from respondents from both majors agree that they communicate via an internet connection such as the Wa Group which allows them to talk like faces. face to face by using the Video call facility on Wa, google meet and zoom. As the results of research from Suharno Pawirosumarto in 2016 which stated that if the university's e-learning system further improves system quality, information quality, and service quality, then the teaching and learning process with the e-learning system will run well as expected, especially on the part of college student. In line with that, Euis Karwati 2014 in his research stated that the more intensively e-learning is used, the quality of student learning will also increase.

CONCLUSION

The conclusion of the research on the effect of e-learning on the learning outcomes of students majoring in engineering and students majoring in management is that there is no difference between the learning outcomes of students majoring in management and students majoring in engineering.

Suggestion

Suggestions for improving the E-learning system are the need for full implementation of e-learning from the University and is ready to use it as optimally as possible. Factors needed in the implementation of e-learning include; awareness of all parties, willingness, and ability of human resources (HR), infrastructure and socialization, expansion of the E-earnings learning method also needs to be supported by other facilities such as meetings with Google Meet, Wagroup, and Zoom so that there is clearer communication between students. and teacher.

REFERENCES

- Dewi, W. A. (2020). DAMPAK COVID-19 TERHADAP IMPLEMENTASI PEMBELAJARAN DARING DI SEKOLAH DASAR. *Jurnal Ilmu Pendidikan*, 2(1), 56.
- Firman, & Rahman, S. R. (2020). Pembelajaran Online di Tengah Pandemi Covid-19. *Indonesian Journal of Educational Science (IJES)*, 2(2), 81.
<https://pustakabergerak.id/artikel/dampak-sistem-pembelajaran-daring-di-perguruan-tinggi-era-pandemi-covid-19>
- Karwati, Euis. PENGARUH PEMBELAJARAN ELEKTRONIK (E-LEARNING) TERHADAP MUTU BELAJAR MAHASISWA , 2014, *Jurnal Penelitian Komunikasi* Vol. 17No. 1, Juli 2014 : 41-54

Muzid Syafiul dan Mishbahul Munir. PERSEPSI MAHASISWA DALAM PENERAPAN E-LEARNING SEBAGAI APLIKASI PENINGKATAN KUALITAS PENDIDIKAN (STUDI KASUS PADA UNIVERSITAS ISLAM INDONESIA). ISBN: 979-756-061-6. Yogyakarta, 18 Juni 2005

Pawirosumarto, Suharno. PENGARUH KUALITAS SISTEM, KUALITAS INFORMASI, DAN KUALITAS LAYANAN TERHADAP KEPUASAN PENGGUNA SISTEM E-LEARNING.

MIX: Jurnal Ilmiah Manajemen, Volume VI, No. 3, Okt 2016. Hal : 416 – 433 Universitas MercuBuana Jakarta

Sadikin, Ali. Pembelajaran Daring di Tengah Wabah Covid-19 (Online Learning in the Middle of the Covid-19 Pandemic). Jurnal Ilmiah Pendidikan Biologi Vol. 06, No. 02 (2020), Hal. 214 – 224 Septantiningtyas, Niken. PENGARUH PEMBELAJARAN JARAK JAUH DENGAN APLIKASIGOOGLER CLASS TERHADAP HASIL BELAJAR MAHASISWA, edureligia Vol. 2, No. 2, 2018

Sugiyono. (2014). Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif Dan R&D. Bandung: Alfabeta.

Syofian, S. (2014). Statistik Parametrik untuk Penelitian Kuantitatif. Penerbit Bumi Aksara, Jakarta

Viciwati

Fakultas Ekonomi dan Bisnis

Universitas Mercu Buana, 11610, Jakarta, Indonesia Email: viciwati@mercubuana.ac.id