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THE EFFECT OF USING GUIDED DISCOVERY LEARNING MODEL BY ASSISTED ELSA APPLICATION ON STUDENTS' SPEAKING ABILITY AT XI GRADE OF SMA NEGERI 1 MERANTI IN 2023/2024 ACADEMIC YEAR

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Abstract

The objective of this research is to determine how students speaking abilities are affected when using guided discovery learning model by assisted ELSA application is used when making suggestions and offers at the XI grade of SMA NEGERI 1 MERANTI during the 2023/2024 academic year. This research employs experimental methodologies in a quantitative research design. Speaking test is used to collect data. The researchers collected 66 samples in total for this research, divided into two classes, XI MIA 3 as the experimental group and XI II 2 as the control group. From the data showed that the mean of students' score in pre-test was 62,4 and the score mean was being 90,3 in post-test. In the control group showed that the mean of students' score in pre-test was 57,7 and the score mean was being 74,7 in post-test. To determine the hypothesis, the independent sample t-test was used. After analysing the data into t-test, it was found that the value of t count (th)9,630. If this was adjusted to the critical score of the product moment of degree of freedom (df) N1 + N2 – 2, df 33+33-2=64, the value of t table with the significant 0.05 (tt) 2.002. Therefore, the calculated t count (th) value the greater than t table (tt) value (9,630≥2.002). Than Ho is rejected and Ha is accepted. The research findings support the using Guided Discovery Learning Model by assisted ELSA application give significantly effect on students' speaking ability.

***Keywords**: Guided Discovery Learning Model, ELSA Application, Speaking Ability*

INTRODUCTION

Speaking is the act of expressing words verbally. We use a variety of body components to produce sounds when we speak, including the tongue, lips, vocal chords, lungs, and vocal tract. Speaking involves a communication process between the speaker and the listener. Some people struggle with pronunciation, grammar, vocabulary, fluency, and other aspects of learning English.

Guided discovery learning is a way of teaching that involves students in the process of mental activity through exchanging opinions, discussions, seminars, reading on their own and trying for themselves so that children can learn on their own.

ELSA (English Learning Speak Assistant) is an application that helps users practice English pronunciation through the use of artificial intelligence (AI) for

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speech recognition. ELSA application was founded in 2015 with the motto "Anyone can speak English" (Anyone can speak English well). In the guided discovery learning methodology, the ELSA application is selected as a medium to assist students who struggle with English speech.

Based on the aforementioned issue, the objective of the research is to determine whether the guided discovery learning model, with assistance from the ELSA application, had a substantial impact on students' speaking abilities when making suggestions and offers at the XI grade of SMA NEGERI 1 MERANTI during the 2023/2024 academic year.

METHOD

This research method will use experimental method with quantitative approach. There are two groups of samples namely Experimental Group and Control Group. This research consists of two varibles and two groups. Those two variables are guided discovery learning model as independent variable and speaking ability as dependent variable. This design focuses on treatment and outcome. Data will be collected from the pretest and posttest to find out whether guided discovery learning model by assisted the ELSA application is effective in students' speaking ability. To take the sample of this research used simple random sampling technique. The Sample of this research was XI MIA 3 and XI IIS 2, where students of XI MIA 3 are as the experimental class and the students of XI IIS 2 are as the control class. This design of this research is below.

Table 1. Two Groups Pre-test Post-test Design

Group	Pre-test	Independent Variable	Post-test
E	Y1	X	Y2
C	Y1	-	Y2

Note:

E: Experimental Group

C: Control Group

Y1: Pre-Test

Y2: Post-Test

X: Treatment

Student test results will be used to gather research data, which will then be quantitatively examined. Statistical analysis is a statistical formula used in quantitative analysis. Its purpose is to ascertain the meaningful distinction between students who receive instruction using Guided Discovery Learning learning Model by assisted ELSA application and those who do not. The t-test will be used to examine the data using Excel and SPSS 23.0 for Windows. Lastly, the degree of freedom (df) of the test, the t-test, will be compared with the significance of the sum, the t-test, and the t-table in the following manner:

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$$t = \frac{M_x - M_y}{\sqrt{\frac{X^2 + Y^2}{N_1 + N_2 - 2} + \frac{1}{N_1} + \frac{1}{N_2}}}$$

Where:
N_1 = Total of the data (subject) of Experimental Group
N_2 = Total of data (subject) of Control Group
M_x = Mean of Experimental Group
M_y = Mean of Control Group
X^2 = Standard deviation (SD) of Experimental Group
Y^2 = Standard deviation (SD) of Control Group

RESULTS AND DISCUSSION

The research data was collected in order to determine whether the guided discovey learning model by assisted ELSA application has a significant impact on students' speaking ability in offers and suggestions material. The data consisted of the results of the guided discovey learning model by assisted ELSA application and the conventional way (lecturing method).

Table 2. The Result of Pre-Test and Post-Test in Experimental Group

Experimental Group						
No.	**Student's Initial Name**	**Score of Pre-test (X)**	**Score of Post-test (Y)**	**X^2**	**Y^2**	**XY**
1	APNP	52	84	2704	7056	4368
2	AZ	56	88	3136	7744	4928
3	AP	56	88	3136	7744	4928
4	AAS	52	84	2704	7056	4368
5	CAP	68	96	4624	9216	6528
6	CIBS	68	92	4624	8464	6256
7	CA	68	92	4624	8464	6256
8	DMS	72	96	5184	9216	6912
9	ETBS	72	96	5184	9216	6912
10	IM	56	88	3136	7744	4928
11	IEF	56	88	3136	7744	4928

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12	JKBS	72	96	5184	9216	6912
13	JH	52	88	2704	7744	4576
14	LP	60	92	3600	8464	5520
15	LS	60	92	3600	8464	5520
16	MFA	64	92	4096	8464	5888
17	MAS	60	84	3600	7056	5040
18	MA	60	84	3600	7056	5040
19	MF	52	88	2704	7744	4576
20	MN	68	92	4624	8464	6256
21	NF	68	84	4624	7056	5712
22	NKSA	68	92	4624	8464	6256
23	NAS	68	92	4624	8464	6256
24	PABS	68	96	4624	9216	6528
25	RGP	72	96	5184	9216	6912
26	SAT	68	92	4624	8464	6256
27	SSP	52	88	2704	7744	4576
28	SSM	56	88	3136	7744	4928
29	TPH	64	92	4096	8464	5888
30	VM	56	88	3136	7744	4928
31	YP	64	92	4096	8464	5888
32	YR	68	88	4624	7744	5984
33	ZA	64	92	4096	8464	5888
N = 33		**∑X = 2060**	**∑Y = 2980**	**∑X2 = 110272**	**∑Y2 = 184610**	**∑XY = 142416**

Table 3. The Result of Pre-Test and Post-Test in Control Group

Control Group

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No.	Student's Initial Name	Score of Pre-test (X)	Score of Post-test (Y)	X^2	Y^2	XY
1	AR	56	76	3136	5776	4256
2	AA	52	76	2704	5776	3952
3	AC	52	72	2704	5184	3744
4	APSH	52	72	2704	5184	3744
5	A	60	76	3600	5776	4560
6	DAL	60	72	3600	5184	4320
7	DN	60	72	3600	5184	4320
8	DA	60	72	3600	5184	4320
9	DSR	64	84	4096	7056	5376
10	EA	56	76	3136	5776	4256
11	FW	56	72	3136	5184	4032
12	HBWD	64	84	4096	7056	5376
13	IFP	52	72	2704	5184	3744
14	IRR	60	76	3600	5776	4560
15	IU	60	72	3600	5184	4320
16	MEMB	56	80	3136	6400	4480
17	MA	56	72	3136	5186	4032
18	MR	56	76	3136	5776	4256
19	MR	52	72	2704	5184	3744
20	MZA	60	76	3600	5776	4560
21	NMS	60	68	3600	4624	4080
22	PRP	60	76	3600	5776	4560
23	RS	60	84	3600	7056	5040

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24	RA	60	72	3600	5184	4320
25	RS	64	84	4096	7056	5376
26	RA	60	76	3600	5776	4560
27	RSS	56	68	3136	4624	3808
28	SBT	56	72	3136	5184	4032
29	SFRP	56	76	3136	5776	4256
30	SD	52	72	2704	5184	3744
31	TH	56	68	3136	4624	3808
32	WP	60	76	3600	5776	4560
33	WA	60	72	3600	5184	4320
	N = 33	**∑X = 1904**	**∑Y = 2464**	**∑X2 = 110272**	**∑Y2 = 184610**	**∑XY = 142416**

From table 2 and table 3 showed that:

1. The highest and lowest scores in the experimental group in the pre-test were 72 and 52, while the highest and lowest scores in the post-test were 96 and 84. So, it was higher than the pre-test.

2. The highest and lowest scores in the control group in the pre-test were 64 and 52, while the highest and lowest scores in the post-test were 84 and 68. So, it was higher than the pre-test.

3. The number of pre-test scores in the experimental group was 2060 after being given treatment using the problem-based learning model, the number of post-test scores increased to 2980.

4. The number of pre-test scores in the control group was 1904 after being given treatment using conventional way the number of post-test scores increased to 2464.

5. Points 3 and 4 showed that the use of the guided discovery learning model by assisted ELSA application give significant effect on students' speaking ability in offers and suggestions material rather than using conventional way (lecturing method). It can be seen with the number of post-test scores in the experimental group higher than the control group.

The data was analysed by applying by t-test, finally the significant of the sum, the t-test and t-table would be compared with degree of freedom (df) of the test, the t-test as follow.

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$$t = \frac{M_X - M_Y}{\sqrt{\left\{\frac{X_2 + Y_2}{N_1 + N_2 - 2}\right\}} + \sqrt{\left\{\frac{1+1}{N_1 + N_2}\right\}}}$$

Before calculating the data using t-test formula, the research has to find the mean standart deviation variable x and variable y.

$$M_Y = \frac{\sum X}{N}$$
$$M_Y = \frac{2464}{33}$$
$$M_Y = 74{,}7$$
$$SD_Y = \sqrt{\frac{\sum_X 2}{N}}$$
$$SD_Y = \sqrt{\frac{184610}{33}}$$
$$SD_Y = \sqrt{5594{,}24}$$
$$SD_Y = 74{,}8$$

So, the standard deviation of control group is 74,8.

$$M_X = \frac{\sum X}{N}$$
$$M_X = \frac{2980}{33}$$
$$M_X = 90{,}3$$
$$SD_X = \sqrt{\frac{\sum_X 2}{N}}$$
$$SD_X = \sqrt{\frac{269584}{33}}$$
$$SD_X = \sqrt{8169{,}21}$$
$$SD_X = 90{,}4$$

So, the standard deviation of experimental group is 90,4.

After getting the mean and standard deviation of each group the data of analyzed by using t-test formula:

$$t = \frac{M_X - M_Y}{\sqrt{\left\{\frac{X_2 + Y_2}{N_1 + N_2 - 2}\right\}} + \sqrt{\left\{\frac{1+1}{N_1 + N_2}\right\}}}$$

Where:
M_x : 90,3
M_y : 74,7
X_2 : 90,4
Y_2 : 74,8

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$$t = \frac{M_X - M_Y}{\sqrt{\left\{\frac{X_2 + Y_2}{N_1 + N_2 - 2}\right\}} + \sqrt{\left\{\frac{1+1}{N_1 + N_2}\right\}}}$$

$$t = \frac{90{,}3 - 74{,}7}{\sqrt{\left\{\frac{90{,}4+74{,}8}{33+33-2}\right\} + \left\{\frac{1}{33} + \frac{1}{33}\right\}}}$$

$$t = \frac{15{,}6}{\sqrt{\left\{\frac{165{,}2}{64} + \frac{2}{33}\right\}}}$$

$$t = \frac{15{,}6}{\sqrt{2{,}58 + 0{,}06}}$$

$$t = \frac{15{,}6}{\sqrt{2{,}64}}$$

$$t = \frac{15{,}6}{1{,}62}$$

$$t = 9{,}630$$

So, t-test or t_{score} = 9,630

To know degree of freedom (df) is used the formula:

df = $N_1 + N_2 - 2$
df = 33+33-2
= 64

So, the critical score of t-table with the significant 0,05 was 2,002.

With the basis of decision making in the independent sample t-test, as follow: compare t count (t_h) with t table (t_t)

1. If $t_h \geq t_t$ with a significance level of 0.05, then Ho is rejected and Ha is accepted.
2. If $t_h \leq t_t$ with a significance level of 0.05, then Ho is accepted and Ha is rejected.

After analysing the data into t-test, it was found that the value of t count (th)=9,630. If this was adjusted to the critical score of the product moment of degree of freedom (df)= $N_1 + N_2 - 2$, df = 33+33-2=64, the value of t table with the significant 0.05 (t_t)= 2.002. Therefore, the calculated t count (t_h) value the greater than t table (t_t) value= (9,630≥2.002). Than Ho is rejected and Ha is accepted.

Therefore, the research was successfully, Ha accepted and revealed that there is significant effect of using Guided Discovery Learning Model by assisted ELSA Application on Students' Speaking Ability at XI Grade of SMA NEGERI 1 MERANTI in 2022/2023 Academic Year. Because students learning outcomes used ELSA application got a higher score than without the ELSA application.

CONCLUSION

The results of students' tasks in speaking ability after using the guided discovery learning model are higher than using conventional way (lecturing method) at XI grade of SMA Negeri 1 Meranti. After analysing the data into t-test, it was found that the value of t count (th)=9,630. If this was adjusted to the critical score of the product moment of degree of freedom (df)= $N_1 + N_2 - 2$, df = 33+33-2=64, the value of t table with the significant 0.05 (t_t)= 2.002. Therefore, the

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calculated t count (t_h) value the greater than t table (t_t) value= (9,630≥2.002). Then Ho is rejected and Ha is accepted.

After analyzing the data, it can be concluded:

1. Using the guided discovery learning model by assisted ELSA application makes it easier for students' speaking ability.
2. Students become capable in speaking, especially in offers and suggestion material and can easily understand what they said.
3. By using guided discovery learning model by assisted ELSA application, students are more active in improving their speaking ability.

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