

CHAPTER IV

FINDINGS AND DISCUSSION

In this chapter the researcher tried to describe the data analysis of the research about the effectiveness of simulation technique in teaching speaking procedure text in SMP Patriot PeteronganJombang. The data which was taken was organized by using appropriate formula to know what differences of the students' speaking ability of procedure text by using simulation technique than students speaking ability of procedure text using non simulation technique. The data were analysis by using SPSS 16 for window.

A. Findings.

Based on the objective of the research which has been stated by the researcher in the previous chapter, this research was aimed to know whether simulation technique was effective to teach speaking of procedure text. Therefore, in this research the researcher wanted to measure the significant difference between the two groups by conducting test and analyzing the result of test by using t-test.

There were two kinds of test, pre-test and post-test. These two kinds of test were conducted to know whether the students who were using simulation technique achieved better than those who were not using simulation technique. In

this chapter the data presents the result from data analysis of t-test. The data will compare between post-test score of experimental group and control group.

1. Experimental Class Scores Analysis.

The score was given to find out the differences between before and after the treatment students of experimental group. The scores of the data were analyzed by using SPSS 16 for windows.

Tabel 4.1

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
PRETEST	29	5	7	12	10.62	.224	1.208	1.458
POSTTEST	29	5	10	15	13.31	.180	.967	.936
Valid N (listwise)	29							

The table shows that the mean of the pretest was 10.62, standard deviation was 1.208, variance was 1.458 and the minimum and maximum scores were 7 and 12 while mean of the posttest was 13.31, standard deviation was 0.967, variance 0.936 and the minimum and maximum scores were 10 and 15.

Before the paired sample statistic of T-Test performed the data of both must be normal and homogeneous. The normality test was conducted to find out whether the data were normal or homogenous.

a. The Normal Distribution Test.

In calculating the normal distribution, One- Sample *Kolmogorof-Smirnov* test with level of sig. $\alpha = 0.05$ was used. The result of normality distribution test is presented in the following table.

Tabel 4.2
Normality Test of Experimental Class

	PRETEST	POSTTES T
N	29	29
Normal Mean	10.62	13.31
Parameters ^a Std. Deviation	1.208	.967
Most Extreme Absolute	.278	.305
Differences Positive	.204	.203
Negative	-.278	-.305
Kolmogorov-Smirnov Z	1.500	1.644
Asymp. Sig. (2-tailed)	.022	.009
Test distribution is Normal.		

From the result, it can be seen than the significance of pretest was 0.022 and the posttest was 0.09 which were higher than the level of significance ($\alpha - 0.05$). Therefore it can be concluded that the scores of both are normality distributed.

b. The Variance Homogeneity Test.

In calculating the homogeneity of variance, *The Levene Statistic* with level of sig. $\alpha = 0.05$ was used. The result of variance homogeneity test is shown in the following table:

Tabel 4.3

Homogeneity Test of Experimental

	Levene Statistic	df1	df2	Sig.
VALUE Based on Mean	.592	1	56	.445
Based on Median	.083	1	56	.774
Based on Median and with adjusted df	.083	1	51.774	.774
Based on trimmed mean	.264	1	56	.609

The test of homogeneity of variance show the probability (based on mean) of the homogeneity of variance test is higher than the level of significance ($0.445 > 0.05$). It means that the variance of both were equal.

c. The Computation of Experiment group scores.

The computation of the Experimental group was done by using matched t-test formula (paired sample test in SPSS 16), in which the scores of pre-test and pos-test were compared. The level of sig. $\alpha = 0.05$ was used. The result of the statistical computation is presented in table.

Tabel 4.4

Paired Sample T-Test of Experimental Class

	Paired Differences					T	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 PRETEST – POSTTEST	-2.690	.604	.112	-2.919	2.460	-23.990	28	.000

The table shows that the probability is less than the level of significance ($0.000 < 0.05$). As a result, the null hypothesis of no difference is rejected. After receiving simulation technique as a treatment, the experimental group's speaking ability of procedure text was improves.

2. Control Class Scores Analysis.

Beside experimental class, students would get pretest and posttest which given to the control class. The score was given to compare the differences between pretest and posttest students of control group. The scores of the data were analyzed by using SPSS 16 for windows. The following table showed the result of the control class from statistical computation

Tabel 4.5

Descriptive Statistics of Control Class

N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
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	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
PRETEST	29	5	7	12	10.59	.208	1.119	1.251
POSTTEST	29	3	10	13	11.45	.176	.948	.899
Valid N (listwise)	29							

The table shows that the mean of the pretest was 10.59, standard deviation was 1.119, variance was 1.251 and the minimum and maximum scores were 7 and 12 while mean of the posttest was 11.45, standard deviation was 0.948, variance 0,899 and the minimum and maximum scores were 10 and 13.

Before the paired sample statistic of T-Test performed the data of both must be normal and homogeneous. The normality test was conducted to find out whether the data were normal or homogenous.

a. The Normal Distribution Test.

In calculating the normal distribution, One- Sample *Kolmogorof-Smirnov* test with level of sig. $\alpha = 0.05$ was used. The result of normality distribution test is presented in the following table.

Tabel 4.6

Normality Test of Control Class

	PRETEST	POSTTEST
N	29	29
Normal Parameters ^a Mean	10.59	11.45

	Std. Deviation	1.119	.948
Most Extreme Differences	Absolute	.403	.202
	Positive	.287	.199
	Negative	-.403	-.202
Kolmogorov-Smirnov Z		2.170	1.090
Asymp. Sig. (2-tailed)		.000	.186
a. Test distribution is Normal.			

From the result, it can be seen than the significance of pretest was 0.000 and the posttest was 0.186 which were higher than the level of significance ($\alpha - 0.05$). Therefore it can be conclude that the scores of both are normality distributed.

b. The Variance Homogeneity Test.

In calculating the homogeneity of variance, *The Levene Statistic* with level of sig. $\alpha = 0.05$ was used. The result of variance homogeneity test is shown in the following table:

Tabel 4.7

Test of Homogeneity of Variance

	Levene Statistic	df1	df2	Sig.
VALUE Based on Mean	.061	1	56	.805
Based on Median	1.077	1	56	.304
Based on Median and with adjusted df	1.077	1	47.632	.305
Based on trimmed mean	.279	1	56	.599

The test of homogeneity of variance show the probability (based of mean) of the homogeneity of variance test was higher than the level of significance ($0.805 > 0.05$). It means that the variance of both were equal.

c. The Paired Sample Test.

The one sample test was conducted to see whether there was a significant difference between pretest and post-test in experimental class.

Tabel 4.8

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 PRETEST – POSTTEST	-.862	.990	.184	-1.239	-.485	-4.689	28	.000

The table showed that the probability was less than the level of significance ($0.000 < 0.05$). When the probability was less than the level of significant it means that H_0 was rejected. Therefore, it can be concluded that there was significant differences between students' pre-test and post-test score in control group.

3. The Computation of Post-Test in Experimental and Control Class

The post-test was administered to find out the improvement of the experimental group after the treatment. However, the post was also

administered to both of group. The scores of both groups were analyzed by SPSS 16 for window. The following table showed the result of post-test from statistical computation.

Tabel 4.9
Descriptive Statistics of Post Test

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
EXPERIMENTAL	29	5	10	15	13.31	.180	.967	.936
CONTROL	29	3	10	13	11.45	.176	.948	.899
Valid N (listwise)	29							

The table shows that the mean of the experimental class was 13.31, standard deviation was 0.976, variance was 0.936 and the minimum and maximum scores were 10 and 15 while mean of the control class was 11.45, standard deviation was 0.948, variance 0.899 and the minimum and maximum scores were 10 and 13.

a. The Normality Distribution Test

Table 4.10

Normality Test of Post Test

	EXPERIMENTAL	CONTROL
N	29	29
Normal Parameters ^a Mean	13.31	11.45
Std. Deviation	.967	.948
Most Extreme Differences Absolute	.305	.202
Positive	.203	.199
Negative	-.305	-.202
Kolmogorov-Smirnov Z	1.644	1.090
Asymp. Sig. (2-tailed)	.009	.186
a. Test distribution is Normal.		

From the result, it can be seen that the significance of experimental class was 0.009 and control class was 0.186, which were higher than the level of significance ($\alpha = 0.05$). It can be concluded that the scores of both experimental and control class were normally distributed.

b. The Homogeneity Test

Table 4.11

Test of Homogeneity of Variance Post test

	Levene Statistic	df1	df2	Sig.
VALU Based on Mean	.638	1	56	.428
E Based on Median	.527	1	56	.471
Based on Median and with adjusted df	.527	1	55.078	.471
Based on trimmed mean	.546	1	56	.463

The homogeneity of variance showed that the probability (based on mean) of the homogeneity of variance test was higher than the level of significance ($0.638 > 0.05$). It means the variances of the two groups were equal.

c. The Independent T-Test

Table 4.12

Group Statistics

GROUP	N	Mean	Std. Deviation	Std. Error Mean
VALUE EXPERIMENTAL	29	13.31	.967	.180
CONTROL	29	11.45	.948	.176

Table 4.13

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
VALUE Equal variances assumed	.638	.428	7.403	56	.000	1.862	.252	1.358	2.366

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
VAL Equal variances assumed	.638	.428	7.403	56	.000	1.862	.252	1.358	2.366
Equal variances not assumed			7.403	55.977	.000	1.862	.252	1.358	2.366

The analysis of the table above as follow:

a. In table Paired Samples Statistics

Based on the data in SPSS above, it showed that the mean score of experimental class in pre-test was 10.62, and the mean control class was 10.59. From this result it showed that two groups were equivalent scores.

b. In table (Independent Samples Test)

It showed t_{-value} was 7.403 within (2-tailed) = 0.000 where $df = n_x + n_y - 2 = 29 + 29 - 2 = 56$ so that $t_{-table} = 2.003$ at significant level of 5 % [$\alpha = 0.05$].

Based on the statistical value above, the researcher could conclude that

$t_{-value} > t_{-table}$, so H_a was accepted and H_o was rejected. It means that simulation was an effective technique to improve students speaking ability of procedure text speaking of procedure text.

B. Discussion

As stated in chapter one that the aim of this study was to know the effective of simulation technique in improving speaking ability of procedure text than students' speaking ability of procedure text by using non simulation technique in SMP Patriot Jombang. The researcher calculated the difference within two steps by using pre-test calculation and post-test calculation. Those two steps have similar procedures to calculate the data, which first procedure was finding the mean, second procedure was finding normality test, third procedure was finding variant homogeneity, fourth procedure was finding standard deviation and degree of freedom and the last procedure was calculate t_{value} by using t-test formula.

Furthermore, the scores of the students who have been used simulation technique in speaking ability of procedure text (experimental class) also higher than the students who have been used non simulation technique (control class), it can be seen from table 4.1 and table 4.5 above. Before getting the treatment mean of the score in experimental class was 10.62, and mean of the score in control class was 10.59.

After getting the different treatment both classes got difference progress, it showed that mean of speaking ability of procedure text by using simulation

technique was 13.31, it could be seen that improvement in experimental class was 25.32%. Mean of students speaking ability of procedure text by using non simulation technique was 11.45, the improvement in control class was 8.14%.. From the result of improvement score of the two groups, it showed that the students who were using simulation technique achieved higher improvement mean score than the students who were using non simulation technique

Then the t_{value} was calculated by using t-test formula, the result of t_{value} of post-test of both experimental and control group, the t_{value} of post-test was 7.403 then it was compared with the t-table on the level of significance of 0.05 or 5% with the degree of freedom 56 was 2.003. From the result above the t_{value} of post-test of both experimental and control groups was higher than t_{table} , it can be concluded that there was a significant difference between experimental and control group. It means that the simulation technique is considered effective in improving students' speaking ability of procedure text.

Based on the analysis above, it can be seen that the score of both groups increase although the students from the control class did not get treatment. However, the increasing score of the experimental group is higher than the control group. So this research could not be concluded that simulation was the only technique which caused higher achievement of students' speaking ability of procedure text at SMP Patriot Jombang. However this research could identify whether the hypothesis was accepted. The data showed that t_{value} was higher than

t-table, so it could be concluded that simulation technique could affect the students' speaking achievement.

Regarding on the result of data analysis above showed that the simulation technique gave some advantages that motivating to the students because can bring their background experiences into class and make their own decisions, more interest and excitement is created in learning. As suggest by Harmer, they increase the self-confidence of hesitant students, because simulation activities, they will have a different role and do not have to speak for themselves, which means they do not have to take the same responsibility⁴⁸. They can remember new information when they actively participate in activities or simulation. Simulation can also help develop cognitive abilities such as analyzing, evaluating, and synthesizing information⁴⁹.

The analyzed showed that simulation technique more effective to teach speaking ability of procedure text than using non simulation technique in SMP Patriot Jombang. It was mean that simulations Technique can implementation in improving speaking ability of procedure text.

By using simulation technique the researcher found that the students could speak more fluently. Their confidences were increased and they were not afraid of sharing their ideas. The students can improve their speaking ability

⁴⁸ Jeremy Harmer, , *The Practice of English Language Teaching: Fourth Edition*, (England: Pearson Longman,2007), 352

⁴⁹ Ken Hyland, *Language Learning Simulations: A Practical Guide*. (Online serial) 31 (4).<http://eca.state.gov/forum/vols/vol31/no4/p16.htm>

because they are doing an oral presentation while relating themselves with the authentic material. The students have to simulate the real activity as they were doing so in the real world.

