

CHAPTER IV

RESEARCH FINDING AND DISCUSSION

In this chapter relate with finding and discussion of the research. Finding research showed the result of the data obtained during the research. In discussion of the research analysed the data in finding of the research.

4.1 Research Finding

In this part, the researcher described and analysed the data before and after treatment. The data of this research was taken by using pre-test and post-test. Pre-test and post-test were given for experimental group and control group. Pre-test was given before treatment and post-test was given after treatment by using Word Chain. The researcher gave pre-test and post-test to know whether it was effective or not use Word Chain through English song to improve the students' vocabulary mastery.

4.1.1 The Calculation of Trying Out Instrument

Trying out instrument is needed to know validity and reliability of the test. Trying out test was conducted on Sunday, October 25th 2020 in XI IPA 2 MA Roudlotul Mubtadiin Balekambang Jepara. There were 15 students as participants. There were 50 questions of multiple choice that given to the students. This

test was given before the researcher did pre-test and post-test to experimental group and control group. After giving the test, the researcher analysed the validity and reliability.

4. 1.1.1 The Validity of Instrument

The researcher measured vocabulary mastery validity using *IBM SPSS statistic 24* and Microsoft excel. The item was valid if $r\text{-count} > r\text{-table}$ with significant level 0,05. The result of the validity in instrument can be seen in the table below:

Table 4.1
Validity of Trying Out Instrument

Criteria	Numbers of Items	Total Items
Valid	1, 2, 5, 10, 12, 17, 20, 21, 22, 25, 26, 29, 33, 35, 38, 40, 43, 45, 47, 50.	20 items
Invalid	3, 4, 6, 7, 8, 9, 11, 13, 14, 15, 16, 18, 19, 23, 24, 27, 28, 30, 31, 32, 34, 36, 37, 39, 41, 42, 46, 48, 49.	30 items

Based on the calculation above, it showed that there were 20 items were valid and 30 items were invalid from 50 items. So, the researcher used 20 items as instrument for pre-test and post-test that given to the students. The

complete result of try-out test validity can be seen in the appendix.

4. 1.1.2 The Reliability of Instrument

The researcher found out the reliability after measuring the validity of the test. According Sugiyono (2018:193), reliability was consistency of measurement. The researcher used *Cronbach's Alpha* formula in *IBM SPSS 24*. It was aimed to know the instrument was reliable or not. The result of Cronbach's Alpha formula in examining the reliability of instrument was below:

Table 4.2
Reliability of Trying out Instrument

Reliability Statistics	
Cronbach's Alpha	N of Items
.881	50

The instrument was reliable if Cronbach's Alpha > 0,06 and the instrument was not reliable if Cronbach's Alpha < 0,06. Based on the table above, it showed that Cronbach's Alpha in this research was > 0,06 (0,881 > 0,60). It meant the instrument in this research was reliable.

4.1.2 Normality and Homogeneity Testing

4.1.2.1 Normality of Instrument

Normality test was conducted to determine that was going to be analysed whether both of groups or class had normal distribution or not. The researcher used *IBM SPSS 24 Statistics* by the value of significance (α) = 0,05. The result of normality data test in pre-test and post-test score as follows:

a. The Normality of Pre-test Score

Testing normality of pre-test score in experimental and control class can be seen in the table below:

Table 4.3
Normality Test of Pre-test

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
AClass	.120	25	.200*	.965	25	.528
BClass	.099	25	.200*	.963	25	.467

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the output SPSS above was known that the significance value of experimental class was (0,528 > 0,05) and control class was (0,467 > 0,05). It

showed that both of the students' score in pre-test were normal distribution.

b. The Normality of Post-test Score

The result of testing normality of post-test in experimental and control class can be seen in the table below:

Table 4.4
Normality of Post-test

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Aclass	.164	25	.079	.949	25	.234
Bclass	.170	25	.059	.946	25	.200

a. Lilliefors Significance Correction

Based on the output SPSS above is known that the significance value of experimental class was (0,234 > 0,05) and control class was (0,200 > 0.05). It showed that both of the students' score in post-test were normal distribution.

4. 1.2.2 Homogeneity of Instrument

Homogeneity test was conducted to determine whether experimental group and control group that were decided, population that has relatively same variant or not. The researcher used *One Way Anova* test with *IBM SPSS 24*

Statistics by the value of significance (α) = 0,05. The result of homogeneity data test in pre-test and post-test score as follows:

a. The Homogeneity of Pre-Test Score

The analysis of homogeneity testing in pre-test scores of experimental and control class can be seen in the table below:

Table 4.5

Homogeneity of Pre-test

Test of Homogeneity of Variances				
B Class				
Levene Statistic	df1	df2	Sig.	
1.516	7	13	.245	

Based on the output from SPSS above was known that the significance value of variances score was higher than 0,05. It can be conclude that both of the variances were homogeny ($0,245 > 0,05$).

b. The Homogeneity of Post-test Score

The analysis of homogeneity testing of post-test scores in experimental and control class can be seen in the table below:

Table 4.6

Homogeneity of Post-test**Test of Homogeneity of Variances**

Post Test Result

Levene Statistic	df1	df2	Sig.
.123	1	48	.728

Based on the output SPSS above was known that the significance value of variance was higher than 0,05. It meant that both of the variance were homogeny ($0,728 > 0,05$).

4.1.3 Statistical Analysis Result**4.1.3.1 Scoring the Students' answer in Pre-test and Post-test**

The researcher conducted the pre-test and post-test in experimental class and control class. The pre-test of experimental class and control class were given on Wednesday, November 4th 2020. The post-test of experimental class and control class were given on Sunday, November 15th 2020. The following table the researcher showed the pre-test score and post-test score of experimental class and control class. There were 25 students of experimental class and 25 students of control class.

Table 4.7

Pre-test Score and Post-test of Experimental and Control Class

Experimental Class				Control Class			
No	Students' Code	Pre-test Score	Post-test Score	No	Students' Code	Pre-test Score	Post-test Score
1	A1	40	75	1	B1	30	65
2	A2	70	75	2	B2	90	80
3	A3	65	80	3	B3	60	90
4	A4	95	100	4	B4	60	70
5	A5	35	80	5	B5	55	70
6	A6	55	75	6	B6	50	60
7	A7	50	90	7	B7	70	80
8	A8	80	100	8	B8	65	75
9	A9	75	80	9	B9	35	70
10	A10	50	85	10	B10	45	70
11	A11	70	80	11	B11	50	70
12	A12	45	70	12	B12	60	75
13	A13	70	90	13	B13	70	90
14	A14	40	65	14	B14	75	90
15	A15	45	75	15	B55	45	80
16	A16	80	90	16	B16	65	65
17	A17	55	80	17	B17	80	80
18	A18	75	90	18	B18	60	80
19	A19	70	85	19	B19	55	80
20	A20	80	85	20	B20	55	85

21	A21	45	80	21	B21	30	85
22	A22	85	75	22	B22	70	75
23	A23	60	85	23	B23	80	85
24	A24	65	80	24	B24	30	70
25	A25	65	85	25	B25	75	80
Total		1565	2055	Total		1460	1920
Mean		62,6	82,2	Mean		58,4	76,8

Based on the table above was could be concluded for pre-test, the lowest score was 35 and the highest score was 95 in experimental class. Besides that, in the control class the lowest score was 30 and the highest score was 90. Moreover, the average score of experimental class was 62,2 and the average score of control class was 58,4 for pre-test score. For post-test the lowest score was 65 and the highest score was 100 in experimental class. Besides that, in the control class the lowest score was 60 and the highest score was 90. Moreover, the average of experimental class was 82,2 and the average of control class was 76,8. It meant the students' score of experimental class better that the students' score of control class in the post-test. But in this result was not sure yet before it was tested by using normality test, homogeneity test, and t-test.

4.1.3.2 The classification of Students' Pre-test Score

The pre-test score was analyzed through statistical computation in *IBM SPSS Statistics 24*. The result of pre-test was described as follows:

Table 4.8

Pre-test Result

Group Statistics

	Class	N	Mean	Std. Deviation	Std. Error Mean
Result of study	Experimental	25	62.60	16.016	3.203
	Control	25	58.40	16.439	3.288

Based on the table above, it was shown the differences between experimental class and control class. The mean score of experimental class was 62,60 and the standard deviation was 16,016. The mean score of control class was 58,40 and the standard deviation was 16,439.

To see detail explanation about pre-test in experimental and control group, the researcher used the T-test to examine whether there was significant difference between experimental group and control group. The researcher used *Independent Samples Test* to know the significant score between pre-test and post-test. The result of *Independent Samples Test* in experimental and control group, it can be seen in the table below:

Table 4.9

Result of T-test in Pre-test

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
Results study	Equal variances assumed	,038	,846	,915	48	,365	4,200	4,590	-5,029	13,429
	Equal variances not assumed			,915	47,967	,365	4,200	4,590	-5,029	13,429

The table above described the t-test analysis using SPSS 24 of students' pre-test score in the experimental class and the control class. The table showed that the mean score of experimental class was 62,60 and the mean score of control class was 58,40. The standar deviation of experimental class was 16,016 and the standard deviation of control class was 16.439. It was known from the mean score both of the class, the experimental class was higher than the control class. In this calculation of pre-test score in the experimental class and control class, the Sig. (2-tailed) was 0,365. It was indicated that there was no significant between experimental class and control class.

In conclusion, both of those had the same level of vocabulary achievement.

Here is the note :

If Sig.(2-tailed) > 0,05 = there is no significant

If Sig.(2-tailed) < 0,05 = there is significant

It meant that the result from this calculation above was Sig.(2-tailed) > 0,05 (0,365 > 0,05).

4.1.3.3 The Classification of Students' Post-test Score

The pre-test score was analyzed through statistical computation in *IBM SPSS Statistics 24*. The result of pre-test was described as follows:

Table 4.10
Post-test Result

Group Statistics					
	Class	N	Mean	Std. Deviation	Std. Error Mean
Resultofstudy	Experimental	25	82.20	8.302	1.660
	Control	25	76.80	8.276	1.655

Based on the table above, it was shown the differences between experimental class and control class. The mean score of experimental class was 82,20 and the standard deviation was 8,302. The mean score of control class was 76,80 and the standard deviation was 8,276.

To see detail explanation about pre-test in experimental and control group, the researcher used the T-test to examine whether there was significant difference between experimental group and control group. The researcher used *Independent Samples Test* to know the significant score between pre-test and post-test. The result of *Independent Samples Test* in experimental and control group, it can be seen in the table below:

Table 4.11
Result of T-test in Post-test

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
Res ults of stu dy	Equal variances assumed	,123	,728	2,303	48	,026	5,400	2,344	,686	10,114
	Equal variances not assumed			2,303	48,000	,026	5,400	2,344	,686	10,114

The table above described the t-test analysis using SPSS 24 of students' post test score in the experimental class

and the control class. The table showed the mean score of experimental class was 82,20 and the mean score of control class was 76,80. The standar deviation of experimental class was 8,302 and the standard deviation of control class was 8,276. It was known from the mean score both of the class, the experimental class was higher than the control class. In this calculation of post test score in the experimental class and control class, the Sig. (2-tailed) was 0,026. It was showed that Sig. (2-tailed) was lower than 0.05 ($0,026 < 0,05$). It was indicated that there is significant between experimental class and control class in post test score. In conclusion, it meant that there was significant difference of the vocabulary achivement between students taught using Word Chain Game and those taught by using cooperative learning. Moreover, it proved that teaching vocabulary by using Word Chain Game is more effective.

4.2 Hypothesis Testing

This research was held to answer the question whether the use of Word Chain through English song was effective to improve the students' vocabulary mastery of the eleventh grade of MA Roudlotul Muhtadiin Balekambang Jepara or not. To answer the question, the researcher wrote the Alternative Hypothesis (H_a) and Null Hypothesis (H_0) as follow:

- a. The Alternative Hypothesis (H_a): There was significant difference in students' vocabulary mastery between the students who were taught by using Word Chain through English song and who were not taught.
- b. Null Hypothesis (H_0): There was no significant difference in students' vocabulary mastery between the students who were taught by using Word Chain through English song and the students who were not taught.

To know the hypothesis, the data obtained in pre-test and post-test were calculated by using t-test formula with assumption as follow:

- a. If Sig. (2-tailed) > 0.05 , the Null Hypothesis (H_0) was accepted and Alternative Hypothesis (H_a) was rejected. It was proven that Word Chain through English song was not effective to improve the students' vocabulary mastery.
- b. If Sig (2-tailed) $< 0,05$, Null Hypothesis (H_0) was rejected and Alternative Hypothesis (H_a) was accepted. It was proven that Word Chain through English song was effective to improve the students' vocabulary mastery.

Based on the result of t-test, there was difference significance between the experimental class and control class. The t-test result by using SPSS 24 showed that the Sig (2-tailed) $< 0,05$ ($0,026 < 0,05$). Thus, Null Hypothesis (H_0) was rejected and Alternative Hypothesis (H_a) was

accepted. In other words, using Word Chain through English song for teaching vocabulary mastery at the eleventh grade was effective.

4.3 Discussion

To concern of this research was to know the effectiveness of Word Chain through English song in improving the students' vocabulary mastery. Before the students' gave the treatment, the researcher gave a pre-test to experimental class and control class. The pre-test was to measure the students' about vocabulary before giving treatment and post-test was to know the students' after got the treatment. The result of experimental class in pre-test the mean was 62,6 and post-test was 82,2. The result of control class in pre-test the mean was 58,4 and post-test 76,8. It showed that the mean score of experimental class was higher than control class. Besides that, the Sig (2-tailed) $< 0,05 = 0,026 < 0,05$. It meant that the Alternative Hypothesis (H_a) was accepted. It can be concluded that Word Chain through English song is effective in improving the students' vocabulary mastery. It can be conclude that Word Chain through English Song was effective in improving students' vocabulary mastery. It happened because the students in experimental class very enthusiasm during teaching learning process. But, in control class the students' not to enthusiasm because some of the control sudents felt bored and sleepy because they just listen to the researcher explanation.

In line with previous study on Sitepu (2018), Gultom (2018), Yanti (2017), Izzah (2015), and Firmansyah (2015) stated that Word Chain game was one of games that can improve students' vocabulary

mastery. It was also an aid to spelling, playing word games help create an interest in words and their spelling. Word Chain also can make the teaching learning process more attractive and funny. In other media that can improve the students vocabulary was English song. Suri (2012:115) stated that teaching vocabulary using song was effective because it can make the students feel enjoy with listen the music. The researcher combined Word Chain with English song to improve the students' vocabulary mastery. From some previous study can be concluded that used Word Chain Game through English song was effective in improving the students' vocabulary mastery. The result of statistical analysis in experimental and control class, it can be seen in the table below:

Table 4.12
Statistical Analysis in Pre-Test and Post-Test

Group	Pre-Test		Post-Test	
	Mean	Std. Deviation	Mean	Std. Deviation
Experimental	62,6	16,016	82,2	8,302
Control	58,4	16,439	76,8	8,276
T-test Sig. (2-tailed) of Post-test				
0,026 < 0,05				
H ₀ was rejected				
H _a was accepted				

Based on the result of statistical analysis, the students' score of experimental group were higher than control group. It found the explanation that the mean score of pre-test in experimental group was 62,2 and in control group was 58,4. The mean score of post-test in experimental group was 82,2 and in control group was 76,8. The standard deviation of pre-test in experimental group was 16,016 and in control group was 16,439. Then, the standard deviation in post-test of experimental group was 8,302 and in control group was 8,276

From the T-test explanation that the result of post-test was showed that Sig. (2-tailed) was lower than the level of significance 0,05 ($0,026 < 0,05$). It meant there was a significant difference in students' score post-test after giving the treatment, the result of post-test the students' score was increasing to moderate level. It concluded that H_0 was rejected and H_a was accepted. So, the hypothesis of the research was accepted. It could be concluded that the use of Word Chain through English song to improve the students' vocabulary mastery at eleventh grade of MA Roudlotul Muhtadiin Balekambang Jepara was effective.

Table 4.13

The Result of T-test Analysing in Post-test

	T_{observe}	T_{table}	T-test Result
Post-test	2,303	2000	H_a was accepted $T_{observe} > T_{table}$ (2,303 > 2000)

From the calculation of T-test above, it showed that the score of t_{observe} was 2.303 while score of t_{table} was 2.000. It shows that $t_{\text{observe}} > t_{\text{table}} = 2.303 > 2.000$ in the degree significance 5%. It means that the Alternative (H_a) was accepted. It could be concluded that the use of Word Chain through English song to improve the students' vocabulary mastery at eleventh grade of MA Roudlotul Muhtadiin Balekambang Jepara was effective.

