#### **Chapter Four**

### **Results and Discussion**

This chapter discusses the results of this research. The content of this chapter is divided into two parts. The first part is about the results from the data which was obtained from the research. The second part is discussion which discusses the relation between the data which was obtained from the research along with the references.

### Results

Quasi-experimental research was conducted in which it involved two groups. They were experimental group and control group. The experimental group was treated with reciprocal teaching technique as the treatment while the control group was using teacher-centered teaching technique. The experimental group consisted of 33 students from VIII D. Likewise the control group consisted of 33 students from VIII B. The procedures during the experiment are explained as follows.

**Experimental group condition.** Class VIII D was given a pre-test, reciprocal teaching technique as a treatment, and a post-test. The pre-test which was attended by 36 students and it was conducted on February 6<sup>th</sup> 2017. There were 2 students who did not join the pre-test because of absence and sickness.

The researcher gave the students a treatment, after the pre-test was done. The researcher used reciprocal teaching technique as the treatment. It was conducted on February 7<sup>th</sup> to 28<sup>th</sup> 2017. The treatment was conducted 4 times in 4 weeks, every Tuesday. In the process of teaching, the researcher used four strategies in teaching

reading especially in teaching narrative text. The strategies that researcher used are questioning, clarifying, predicting and summarizing.

At the end of the meeting, the researcher gave the students post-test. The purpose of post-test is to know the students' reading comprehension especially in comprehending narrative text after the researcher used reciprocal teaching technique as a treatment. The post-test was conducted after the pre-test and treatment. The post-test was conducted on March 7<sup>th</sup> 2017. It was attended by 36 students. When the post-test was carried out, the students who attended it were also incomplete. There were 3 students who did not join the post-test. Two of them were absent, and one of them was sick.

As a result, the researcher took 33 students out of 36 students. It was because the students who completed both pre-test and post-test were 33 students. Thus, the total of the participants in the experimental group were 33 students.

**Control group condition.** The researcher used VIII B class for the control group. The researcher also gave the control group pre-test, teacher-centered teaching technique, and post-test. The pre-test was conducted on February 6<sup>th</sup> 2017. The students who attended the pre-test were 36 students. It means, all students joined the pre-test.

After the pre-test was done, then the researcher taught the students narrative text by using teacher-centered teaching technique. The teaching and learning process was conducted on February 13<sup>th</sup> to 6<sup>th</sup> March 2017 which took place once a week on Monday for four weeks. In the control group, the researcher used teacher-centered teaching technique. Hence, the students used memorizing and reviewing strategies in reading comprehension.

The post-test was conducted after the researcher taught narrative text in the fourth meeting. It was conducted on March 7<sup>th</sup> 2017. Initially, there were 33 students who were supposed to attend the post-test, yet 3 of them could not join the post-test because of some reasons. Two of them were sick and, one of them was absent. The researcher used the result of post-test in control group to compare with the result of post-test in the experimental group.

As a result, the total number of participants in the control group were 33 students. It was because the students who completed both pre-test and post-test were 33 students. Similarly, the total number of the participants in the experimental group were 33 students. Therefore, the amount of participants of both experimental group and control group was equal that made researcher to gain stable data.

The analysis of data distribution. The researcher used SPSS version 17.00 to know the significant difference between experimental group and control group. The steps that researcher used are comparing the gain scores of two groups, checking the normality and homogeneity of the data, and checking the hypothesis using T-test.

*Distribution of gain scores.* Before analyzing the data, the researcher got the gain score. To get the gain score of each group, the researcher subtracted the post-test and pre-test scores. Therefore, the researcher used gain score to answer the research question in this research.



## *Figure 4.3* Data Distribution of Gain Scores. The figure shows the score differences between pre-test and post-test in both group

The chart above showed the result of gain scores of students' pre-test and posttest in reading comprehension especially in narrative text from experimental group and control group. If the scores are more than 0, it means the students' scores between pretest and post-test increased. In addition, if the scores are less than 0, it means the students' score between pre-test and post-test did not increase and even the score decreases.

Based on the chart above, in experimental group, there are 33 students and most of them show some improvements from pre-test to post-test in their reading comprehension. There are 6 students whose score increase up to 5 points, 5 students gain score up to 10 points, 6 students also improve their score up to 15 points, 6 students gain 10 points more. Futher, 4 students add their score up to 25 points while 3 students gain up to points. There is only 1 student who obtain the highest score which is 35 points. On the other hand, there was 1 student whose score decreased to 5 points and 1 student whose score neither decrease nor increase in her/his score. Hence, the use of reciprocal teaching technique has a significant improvement in students' reading comprehension score in experimental group.

In the control group, not all students have an improvement on their scores. There are 6 students whose score decrease up to 5 points, 6 students gain 10 points which lower than the score in pre-test. 2 students also decrease their score up to 15 points. There ares also 1 student who decrease his/her score up to 25 points, 1 student obtain 30 points, and 2 students gain 35 points which those score are lower than the score in pre-test. On the other hand, there are 12 students who have improvement in their score for post-test in control group. Those are 5 students who improve their score up to 5 points, 1 student who improve their score up to 20 points, and 2 students who gain 15 points, 2 students who improve their score up to 20 points, and 2 students with highest score in post-test which are 25 points. Besides, 1 student whose score neither decreased nor increased in her/his score. Thus, the use of teacher-centered teaching technique are not improve students' reading comprehension score, especially in comprehension score.

*Normality.* After analyzing the gain scores of pre-test and post-test from experimental group and control group, the researcher also analyzed the normality of data distribution. It is because the samples should be checked if the distribution of every variable in the data was normally distributed. According to Arikunto (2006), Kolmogorov-Smirnov is more accurate if the numbers of participants are more than

fifty. The researcher uses the analysis of Kolmogorov-Smirnov because the participants of this research are more than fifty participants. Thus, the table below shows the result of normality of the data

		Kolmogorov-Smirnovª			Shapiro-Wilk		
	Group	Statistic	Df	Sig.	Statistic	Df	Sig.
Gainscore	Experimental Group	.108	33	.200 <sup>*</sup>	.970	33	.469
	Control Group	.132	33	.151	.967	33	.403

# *Table 4.1* Normality of the Data Using Kolmogorov-Smirnov. The table shows the normality of the data in two group both experimental and control group

Based on table 4.1 above, it can be seen that table 4.1 shows the result of Kolmogorov-Smirnov and Shapiro-Wilk of normality data of this research. The result showed that the number of significant of two groups is higher than 0.05 (Sig > 0.05). The normality test of Kolmogorov-Smirnov should refer to the score of significant. If the result of significant is more than 0.05 (Sig > 0.05), the data is considered normal. The number of significant scores from experimental group is 0.200 and control group is 0.151. It means, the data in this research is considered normal because the number of significant of two groups is higher than 0.05.

*Homogeneity*. After the normality test is done, the researcher then check the homogeneity of the research. The homogeneity test is used to know the level variance of two or more distributions (Cohen, Manion, & Morrison, 2011). It means, the researcher uses the homogeneity test to know whether the samples of the research come from the same variance or have same characteristics. Thus, the table below shows the homogeneity of variances that is analyzed using Levene statistic.

Levene Statistic	df1	df2	Sig.
1.076	1	41	.306

### Table 4.2 Homogeneity of the data. The table shows the homogeneity of the data by using Levene statistic

On the table 4.2 above, it indicates that F value is 1.076 with df1 is 1, df2 is 41, and the number of significant is 0.306. There are two ways to check the homogeneity of variances. The first is by reviewing the number of significance. If the number of significant is higher than 0.05 (Sig > 0.05) then the data is homogeneous. Therefore, the data in this research is significant because 0.306 is higher than 0.05 (0.306 > 0.05). The second is by comparing F value and F table. The requirement is F value should be smaller than F table (F value < F table). If df1 is 1 and df2 is 41, then F table = 4.08. Thus, the result showed that F value is 1.076. It means 1.076 is smaller than 4.08 (1.076 < 4.08), it could be concluded that the data of this research in both experimental group and control group come from the same variance or have the same characteristic. *Hypothesis.* This research uses t-test to see the difference of two groups as experimental group and control group. After checking the normality and homogeneity variances of the data, then the researcher checks the hypothesis in this research. According to Sugiyono (2011) if the number of significant is smaller than 0.05 (sig < 0.05) or t-value is higher than t-table (t-value > t-table), it means the null hypothesis (Ho) is rejected. Moreover, the table 4.3 and 4.4 below shows the table statistic of data and the result of the hypothesis test of data by using independent sample test.

	Group	Ν	Mean	Std. Deviation	Std. Error Mean
Gain score	Experimental Group	33	15.45	9.631	1.677
	Control Group	33	-3.94	15.996	2.785

## Table 4.3 Statistic of the Data. The table shows the differences mean from experimental group and control group

Table 4.3 indicate the difference between experimental group and control group by the mean. The participants of experimental group and control group were 33 students in which experimental group has mean score 15.45 and control group has mean score of -3.94. It means, the mean score of experimental group is higher than the mean score of control group (15.45 > -3.94). Then, the standard deviation of experimental group is 9.631 and control group is 15.996. Therefore, reciprocal teaching technique in improving reading comprehension can make significant differences in two groups which is 19.4. It is obtains from subtracting the higher score and the lower score or the mean of experimental group and the mean of control group (15.45 - (-3.94)).

	Levene's Test for Equality of Variances		t-test for Equality of Means							
									95% Confidence Interval of the	
								Dif	ference	
							Std.			
					Sig.	Mean	Error			
Gainscore					(2-	Differenc	Differenc			
	F	Sig.	Т	Df	tailed)	e	e	Lower	Upper	
Equal variances assumed	5.842	.019	5.967	64	.000	19.394	3.250	12.901	25.887	
Equal variances not assumed			5.967	52.506	.000	19.394	3.250	12.873	25.915	

# Table 4.4 T-test using Independent Samples Test. The table shows the result of hypothesis testing

Moreover, the researcher employed two ways in checking the hypothesis in this research. Firstly, the researcher reviewed the number of significant value to see the significant of data. Secondly, the researcher reviewed the *t*-value to test the hypothesis in this research whether it accepted or rejected. Thus, the detail is described as follows.

Firstly, the hypothesis can be checked by analyzing the number of significance. The requirements are if the number of significant is lower than 0.05 (sig.<0.05). Then the data are significant. The table 4.4 displays that the result of significance is 0.019 and it is lower than 0.05 (0.019 < 0.05). Also, the significant value in 2-tailed is 0.000 and it is lower than 0.05 (0.000 < 0.05). It means that this research is significant. As a result, the null hypothesis (Ho) in this research is rejected which means reciprocal teaching technique is effective in improving reading comprehension in comprehending narrative text at SMP Muhammadiyah 1 Gamping.

Secondly, in hypothesis testing, it could also be analyzed by observing the *t*-value which is by comparing the *t*-value and *t*-table. The requirements are if *t*-value is higher than *t*-table (*t*-value > *t*-table), the null hypothesis (Ho) is rejected. According to table 4.4, the result of *t*-value is 5.967, whereas, *t*-table for df64 is 1.671. In other words, 5.967 is higher than 1.671 (5.967 > 1.671). It means, the null hypothesis (Ho) in this research is rejected in which the equal variance is not assumed or there is a difference between experimental group and control group. Consequently, reciprocal teaching technique is effective in improving reading comprehension especially in comprehending narrative text at SMP Muhammadiyah 1 Gamping. This research also gives the significant and positive result for the students in experimental group in which their reading comprehension were improving especially in reading narrative text. As the result, the researcher can address the research question in this research.

*Effect size.* After checking the hypothesis in this research, the researcher checked the effect size in this research. Effect size is to know how large the effect of the influence from the hypothesis test between the samples or variables. According to Cohen (2011), the deviations of effect size, as following.



Figure 4.4 Effect Size. The chart shows the categories of effect size

The criteria of effect size are:

0 - 0.20	Weak effect
0.21 - 0.50	Modest effect
0.51 – 1.00	Moderate effect
>1.00	Strong effect

Based on figure 4.2 above, it could be explained that Cohen (2011) divided the criteria of effect size as weak, modest, moderate, and strong effect. Therefore, the researcher also measured the effect size of this research by using standardized way to know the effect size of this research. The effect size could be calculated as follows.

$$r = \sqrt{\frac{t^2}{t^2 + df}}$$
$$= \sqrt{\frac{5,967^2}{5,967^2 + 64}}$$
$$= \sqrt{\frac{25,61}{99,61}} = 0.59$$

After calculated the benchmarks of the effect size above, the result is 0.59. It means the effect size of this research is in moderate effect. According to Cohen (2011), 0.51 to 1.00 is in moderate effect, and it shows that 0.59 is more than 0.51. Hence, in this research it can be concluded that reciprocal is not only significant in improving students' reading comprehension but also has moderate effect on reading comprehension.

In conclusion, the result above shows that there is a significant difference between two groups which are experimental group and control group. Those two groups are experimental group used reciprocal teaching technique and control group uses of teacher-centered teaching technique. In experimental group, there is a significant effect to students in their reading comprehension. Unfortunately, the result of control group does not show significant effect compare to experimental group.

#### Discussion

Reading is one of the language skills that the students have to acquire. Reading is the ability to understand the information in a text. One of the aspects in reading that the students need to master is reading comprehension because it is an aspect which cannot be separated from reading activity. If the students' reading comprehension is good, their language learning process will develop well because reading comprehension allows the students to learn effectively. In reading comprehension, the readers get a lot of information and knowledge from the text by connecting the ideas between the reader and the writer.

The effect of reciprocal teaching technique. As discussed in chapter two, according to Palincsar and Klenk (1991), reciprocal teaching technique is used to teach the students reading comprehension skill which uses an instructional procedure in which the teacher and students have discussion about narrative text. The purpose of the discussion is to achieve the students' understanding about the text by using four strategies namely questioning, clarifying, predicting and summarizing. In relation to this study, the researcher also used reciprocal teaching technique as the treatment when the researcher taught the students narrative text. In the process of comprehending narrative text, the students used four strategies in which the first strategy is questioning. The students used questioning strategy to check and make sure that they can answer their own question before reading. The second is clarifying. The students used clarifying strategy to ask clarification if the text is difficult to understand. The third is predicting where the students predict what happen next in the story. The last is summarizing strategy in which the students have to use this strategy to paraphrase what they had read using their own words.

Furthermore, reciprocal teaching technique helps the students understand the text especially in comprehending narrative text. Also, this technique makes the students find out the information from the text quickly and it makes the students better in

answering the questions which was discussed based on narrative text. Hence, the researcher concluded that reciprocal teaching technique that uses four strategies in reading including questioning, clarifying, predicting and summarizing is effective. Furthermore, the previous researcher also stated that reciprocal teaching technique is effective in improving students reading comprehension. For example, Palinscar and Brown (1984) who studied reciprocal teaching of comprehension fostering and comprehension monitoring activities in University of Illinois. They found that reciprocal teaching technique is effective in comprehension-fostering and comprehension monitoring activities. Then, Harjono, Sumarsono and Imran (2013) also conducted the research to examine the effectiveness of reciprocal teaching technique in reading skill for student at high school. The result of the study suggested that reciprocal is effective in teaching reading at second year student. The similar study was also conducted Nugraha (2011), he studied the use of reciprocal teaching to improve students' reading comprehension. This technique has succeeded in making the students have higher score in reading than using teacher-centered teaching technique. For this reason, the null hypothesis (Ho) in this research was rejected which means reciprocal teaching technique is effective in improving reading comprehension in comprehending particularly narrative text at SMP Muhammadiyah 1 Gamping.