CHAPTER IV

FINDINGS AND DISCUSSION

A. Findings

The researcher conducted field research on 30th October until 14th November 2017. The researcher got the data as in the data collection procedures. The data collected from test, interview, and observation. The main data in this research were collected from test, the data from interview and observation were supported data. Based on the statement of problems the researcher found the result as follows:

1. The Result from Experiment Class

The Table 4.1 below shows the students' pre-test and post-test score on reading comprehension of narrative text in experiment class. Pre-test score was students' score before the researcher did treatments in experiment class, while post-test score was students' score after the researcher did treatments in experiment class using story mapping technique. There were 35 students in experiment class.

Table 4.1 Students'	Pre-test and	Post-test Score	of Ex	periment	Class
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No	Students	Pre-test	Post-test	Gained Score
1	Student-A	56	68	12
2	Student-B	48	64	16
3	Student-C	48	60	12
4	Student-D	40	72	32
5	Student-E	64	80	16

6	Student-F	40	60	20
7	Student-G	76	80	4
8	Student-H	36	60	24
9	Student-I	48	64	16
10	Student-J	52	64	12
11	Student-K	48	60	12
12	Student-L	36	52	16
13	Student-M	56	56	0
14	Student-N	44	56	12
15	Student-O	24	40	16
16	Student-P	24	32	8
17	Student-Q	40	64	24
18	Student-R	44	64	20
19	Student-S	44	56	12
20	Student-T	36	56	20
21	Student-U	40	56	12
22	Student-V	56	60	4
23	Student-W	36	48	12
24	Student-X	76	84	8
25	Student-Y	44	52	8
26	Student-Z	28	44	16
27	Student-AA	40	52	12
28	Student-BB	44	76	28
29	Student-CC	52	76	24
30	Student-DD	36	64	28
31	Student-EE	52	72	20
32	Student-FF	32	44	12
33	Student-GG	52	72	24
34	Student-HH	48	72	24

35	Student-II	56	72	16
Σ		1596	2152	552
Mean		45.60	61.49	15.77

Based on the table above, it can be seen that the lowest score of pre-test was 24 and the highest score was 76. While, the lowest score of post-test was 32 and the highest was 84. The mean of pre-test was 45.60 and the mean of post-test was 61.49. After conducting pre-test and post-test, the researcher found the mean gained score was 15.77. The mean of post-test after giving treatments using story mapping technique is higher than the mean of pre-test before giving treatments. It means that there was a difference improvement on students' score of pre-test and post-test in experiment class.

2. The Result from Control Class

The Table 4.2 below presents the students' pre-test and post-test score on reading comprehension of narrative text of control class, which was taught without using story mapping technique. In control class the researcher did not give treatments as in experiment class. There were also 35 students in control class.

No	Students	Pre-test	Post-test	Gained score	
1	Student-A	48	60	12	
2	Student-B	48	56	8	

Table 4.2 Students' Pre-test and Post-test Score of Control Class

3	Student-C	32	56	24
4	Student-D	52	60	8
5	Student-E	44	56	12
6	Student-F	44	68	24
7	Student-G	32	44	12
8	Student-H	56	52	-4
9	Student-I	52	64	12
10	Student-J	40	52	8
11	Student-K	52	64	12
12	Student-L	40	64	24
13	Student-M	48	64	16
14	Student-N	52	72	20
15	Student-O	52	60	8
16	Student-P	48	44	-4
17	Student-Q	40	60	20
18	Student-R	36	52	16
19	Student-S	36	48	12
20	Student-T	60	64	4
21	Student-U	44	56	12
22	Student-V	28	40	12
23	Student-W	48	56	8
24	Student-X	32	44	12
25	Student-Y	40	52	12
26	Student-Z	40	56	16
27	Student-AA	56	60	4
28	Student-BB	72	76	4
29	Student-CC	36	60	24
30	Student-DD	48	56	8
31	Student-EE	36	52	16

32	Student-FF	56	60	4
33	Student-GG	48	76	28
34	Student-HH	40	52	12
35	Student-II	48	56	8
Σ		1584	2012	424
Mean		45.26	57.49	12.11

According to table 4.2 above, it can be seen that the lowest score of pre-test was 28 and the highest score was 72. While, the lowest score of post-test was 40 and the highest was 76. After conducting pre-test and post-test, the researcher found the mean gained score was 12.11. The mean of pre-test was 45.26 and mean post-test was 57.49. It showed that the students' score of control class was also increased.

However, even though the students' score of control class was also increased, it was not as high as the students' score of experiment class which is the mean of gained score was 15.77. It can be inferred that the students' score of experimental class which learning reading narrative text using story mapping technique was higher than the students' score in control class which learning reading narrative text without using story mapping technique.

3. The Result of Significant Difference on Students' Score Between Experiment and Control Class

Based on the result data gained score, the data showed that there was any significant difference on students' score between experiment and

control class. The following table is the data of gained score both experiment class using story mapping technique and control class without using story mapping technique.

No	Students (X)	Students (Y)	Gained Score (X)	Gained Score (Y)
1	Student-A	Student-A	12	12
2	Student-B	Student-B	16	8
3	Student-C	Student-C	12	24
4	Student-D	Student-D	32	8
5	Student-E	Student-E	16	12
6	Student-F	Student-F	20	24
7	Student-G	Student-G	4	12
8	Student-H	Student-H	24	-4
9	Student-I	Student-I	16	12
10	Student-J	Student-J	12	8
11	Student-K	Student-K	12	12
12	Student-L	Student-L	16	24
13	Student-M	Student-M	0	16
14	Student-N	Student-N	12	20
15	Student-O	Student-O	16	8
16	Student-P	Student-P	8	-4
17	Student-Q	Student-Q	24	20
18	Student-R	Student-R	20	16
19	Student-S	Student-S	12	12
20	Student-T	Student-T	20	4
21	Student-U	Student-U	12	12
22	Student-V	Student-V	4	12
23	Student-W	Student-W	12	8
24	Student-X	Student-X	8	12
25	Student-Y	Student-Y	8	12
26	Student-Z	Student-Z	16	16

Table 4.3. The Comparison Gained Score of Each Students in **Experiment Class and Control Class**

27	Student-	Student-	12	4
	AA	AA		
28	Student-BB	Student-BB	28	4
29	Student-CC	Student-CC	24	24
30	Student-	Student-	28	8
	DD	DD		
31	Student-EE	Student-EE	20	16
32	Student-FF	Student-FF	12	4
33	Student-	Student-	24	28
	GG	GG		
34	Student-	Student-	24	12
	HH	HH		
35	Student-II	Student-II	16	8
Σ			552	424
Mean			15.77	12.11

Based on the table above, it can be seen that the total of gained score in experiment class (X) is 552 and the total of gained score in control class (Y) is 424. After conducting pre-test and post-test in both experiment and control class, the researcher got the mean of gained score on experiment class was 15.77 while the mean of gained score in control class was 12.11.

4. The Result Effectiveness Using Story Mapping Technique In Teaching Reading Comprehension of Narrative Text

To measure the effectiveness of story mapping technique, the researcher used the gained test as Nuraeni in Mahmudah (2014, p.59) stated by using the following formulas:

 $g = \frac{score \; post \; test - score \; pre \; test}{score \; maximal - score \; pre \; test}$

Notes :

Score maximal= 100

Students (N) = 35

= gain score

$$g = \frac{\sum g}{N}$$

g

	Ta	ble	4.4	Cate	gories	Score	of	Test	for	Mea	asuring	Effect	tiveness
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Score	Categories
g < 0,3	Low
$0,3 \le g \le 0,7$	Fair
g > 0,7	High

The following table is the result calculation of gained test for measure the effectiveness story mapping technique in experiment class.

	Sc	ore	Gained	score nostlest - score protest
Students	Pre- test	Post- test	Score	$g = \frac{score positiest - score pretest}{score maximal - score pretest}$
1	56	68	12	0.272727
2	48	64	16	0.307692
3	48	60	12	0.230769
4	40	72	32	0.533333
5	64	80	16	0.44444
6	40	60	20	0.333333
7	76	80	4	0.166667
8	36	60	24	0.375
9	48	64	16	1.307692
10	52	64	12	0.25
11	48	60	12	0.230769
12	36	52	16	0.25

13	56	56	0	0
14	44	56	12	0.214286
15	24	40	16	1.210526
16	24	32	8	0.105263
17	40	64	24	0.4
18	44	64	20	0.357143
19	44	56	12	0.214286
20	36	56	20	0.3125
21	40	56	12	0.2
22	56	60	4	0.090909
23	36	48	12	0.1875
24	76	84	8	0.333333
25	44	52	8	0.142857
26	28	44	16	0.222222
27	40	52	12	0.2
28	44	76	28	0.5
29	52	76	24	0.5
30	36	64	28	0.4375
31	52	72	20	0.416667
32	32	44	12	0.176471
33	52	72	24	0.5
34	48	72	24	0.461538
35	56	72	16	0.363636
	Σ			12.249063

$$g = \frac{\sum g}{N} = \frac{12.249063}{35} = 0.3410$$

Based on the result of calculation above, the value g = 0.3410, and it can be concluded that effectiveness of using story mapping technique in experiment class in fair category.

B. Discussions

After the researcher got the result students' pre-test and post-test score of both experiment and control class, the researcher categorized students' score into five categories as suggested by Anas Sudijono (2011, p.35) as follows:

Score	Frequencies	Categories
80 - 100	0	Very Good
66 - < 80	2	Good
56 - < 66	5	Fair
46 - < 56	9	Low
0 - < 46	19	Very Low
Total	35	

Table 4.6 Categories Students' Score Pre-test in Experiment Class

According to table above, it can be seen that students' pre-test score in experiment class is 19 students in very low categories, 9 students in low categories, 5 students in fair categories, and 2 students in good categories.

Table 4.7 Categories Students' Score Post-test in Experiment Class

Score	Frequencies	Categories
80 -100	3	Very Good
66 - < 80	7	Good
56 - < 66	17	Fair
46 - < 56	4	Low
0 - < 46	4	Very Low
Total	35	

Based on the table above, after doing treatment the result students' post-test score in experiment class shows most of students increased into fair categories with 17 students, 3 students in very good categories, 7 students in good categories, and 4 students in low and very low categories.

Score	Frequencies	Categories
80 -100	0	Very Good
66 - < 80	1	Good
56 - < 66	4	Fair
46 - < 56	13	Low
0 - < 46	17	Very Low
Total	35	

 Table 4.8 Categories Students' Score Pre-test in Control Class

From the table it can be seen that the students' pre-test score in control class got the result 1 students in good categories, 4 in fair categories, 13 in low categories, and 17 in very low categories.

Score	Frequencies	Categories
80 -100	0	Very Good
66 - < 80	4	Good
56 - < 66	19	Fair
46 - < 56	8	Low
0 - < 46	4	Very Low
Total	35	

Table 4.9 Categories Students' Score Post-test in Control Class

The table above shows the result of students' post-test score in control class also most of students in fair categories with 19 students, 4 students in good categories, 8 students in low categories, and 4 students in very low categories.

According to the result from experiment class, the students' score on reading comprehension of narrative text which taught using story mapping technique in experiment class has the mean score of pre-test was 45.60 before beeing given treatments using story mapping technique which the lowest score 24 and the highest score 76. After conducted pre-test, the researcher applied treatment in teaching reading comprehension of narrative text by using story mapping technique 3 times, the researcher got the mean score of post-test 61.49 which the lowest score 32 and the highest score 84. The researcher got the mean of gained score 15.77 after conducting pre-test and post-test, and the mean of gained score showed significant different before and after applying story mapping technique. Thus, it can be concluded that story mapping technique has improved tudents' score on reading comprehension of narrative text. It has proved that story mapping technique could increase students reading comprehension of narrative text.

As Babyak et al. argue that story mapping represents the elements of narrative text, it makes the students become easier to read story in narrative text and apply it into story mapping elements. Hence, when the students are taught using story mapping technique, they could be easy to read the narrative text. Because they were familiar with the story mapping elements, they could be easy to read the passage and answer the questions relating to the passage. It can be seen from students' score in post-test after applying story mapping technique which the mean score of post-test was 61.49, and it was higher than the mean score of pre-test (45.60).

Meanwhile, from the result in control class the students' score on reading comprehension of narrative text which was taught without using story mapping technique, the researcher got the mean score of pre-test was 45.26 which the lowest score was 28 and the highest score was 72. In control class, the researcher did not use story mapping technique but using the technique as usual. He asked the students to read the story to translate the story into Indonesian language and answer the questions based on the story. The researcher also taught 3 times using usual technique. The mean score of post-test was 57.49 which the lowest score was 40 and the highest score was 76. The researcher got the mean of gained score 12.11 after conducting pre-test and post-test. The students' score of control class was also increased, but it was not so higher than the students' score of experiment class which the mean of gained score was 15.77. It can be summarized that the gained score of experiment class was higher than control class.

Before testing the hypothesis, the researcher analyzed the normality and homogeneity of the data. Normality test were used to decide whether the data was distributed normally or not. To find out normality of the data, the researcher used *SPSS program v.16 for windows*. Normality

of the data was used as a requirement to calculate t_{test} . If the data was distributed normally, t_{test} could be applied to find out the significant difference between post-test control class and experiment class. To make decision wether the data was normaly distributed or not, the researcher see the result of significant table of SPSS on Shapiro-Wilk. If significant value was higher than 0.05, it could be concluded that the data were normally distributed.

Homogeneity test has purpose to find wether the data in both classes are homogenous or heterogenous. The researcher also used *SPSS* program v.16 for windows to find out the homogeneity of the data by looking at the significance value of the data. If the significance value higher than 0.05, it means the data is homogeneous. It was important because the similarity of both classes would influence the result of test. Moreover, homogeneity of a test was used also as a requirement to calculate t_{test} . The following tables are the output of test normality and homogeneity from SPSS:

Tests of Normality									
Pre-test Experiment and		Kolmogorov-Smirnov ^a			Shapiro-Wilk				
Control		Statistic	df	Sig.	Statistic df S		Sig.		
Pre-test score	Pre-test Experiment class (x)	.107	35	.200 [*]	.949	35	.106		

Table 4.10. Normality Pre-test of Experiment Class and Control Class

Pre-test						
Control class	.131	35	.136	.961	35	.250
(y)						

a. Lilliefors Significance Correction

According to result of the test, it can be seen that data of pre-test in both experiment and control class show normaly distributed with significance value of pre-test score in experiment class on *Shapiro-Wilk* was 0.106 is higher than 0.05 (0.106 > 0.05). While, significance value of pre-test score in control class on *Shapiro-Wilk* was 0.250 also higher than 0.05 (0.250 > 0.05).

Tests of Normality								
Post-test Experiment &		Kolmogo	orov-Sr	nirnov ^a	Shapiro-Wilk			
Control class		Statistic	df	Sig.	Statistic	df	Sig.	
Post-test score	Post-test Experiment class (x)	.102	35	.200 [*]	.978	35	.708	
	Post-test Control class (y)	.125	35	.181 [*]	.960	35	.234	

Table 4.11.Normality Post-test of Experiment Class and Control Class

a. Lilliefors Significance Correction

On the table 4.11 above, the significance value of post-test score in experiment class based on *Shapiro-Wilk* was 0.708. While, the significance value of post-test score in control class based on *Shapiro-Wilk* was 0.234. It means the data of post-test of both classes also normally distributed because 0.708 is higher than 0.05 (0.708 > 0.05) and 0.234 is higher than 0.05 (0.234 > 0.05).

Test of Homogeneity of Variances						
Pre-test score						
Levene Statistic	df1	df2	Sig.			
1.093	1	68	.299			

Table 4.12. Homogeneity of Pre-test Result between Experiment Classand Control Class

According the table above, significance value is 0.299. It is higher than 0.05 (0.299 > 0.05). It could be concluded that the data of pre-test between experiment and control class were homogenous.

Table 4.13. Homogeneity of Post-test Result between ExperimentClass and Control Class

Test of Homogeneity of Variances						
Post-test score						
Levene Statistic	df1	df2	Sig.			
3.620		68	.061			

Besed on the table above, significance value is 0.061, it is higher than 0.05 (0.061 > 0.05). It can be infered that the data of post-test between experiment and control class were homogenous. By seeing the result of pre-test and post-test homogeneity, the researcher concluded that the data from two classes were homogenous so the t_{test} could be counted.

After knowing the data were normally distributed and homogenous, the researcher calculated the data to test the hypothesis whether there is significant different on students' score in reading comprehension of narrative text by using story mapping technique in experiment class and students' score in reading comprehension of narrative text without using story mapping technique in control class. The researcher calculated the data using t-test formula. Two classes were compared, the experiment class as variable X and the control class as variable Y.

The following table is statistical calculation of data gained score of both experiment class and control class:

No	Students (X)	Students (Y)	Gained Score f(X)	Gained Score f(Y)	X	Y	$f(\mathbf{x})^2$	$f(\mathbf{y})^2$
1	Student-A	Student-A	12	12	-3.77	-0.11	14.2129	0.0121
2	Student-B	Student-B	16	8	0.23	-4.11	0.0529	16.8921
3	Student-C	Student-C	12	24	-3.77	11.89	14.2129	141.3721
4	Student-D	Student-D	32	8	16.23	-4.11	263.4129	16.8921
5	Student-E	Student-E	16	12	0.23	-0.11	0.0529	0.0121
6	Student-F	Student-F	20	24	4.23	11.89	17.8929	141.3721
7	Student-G	Student-G	4	12	-11.77	-0.11	138.5329	0.0121
8	Student-H	Student-H	24	-4	8.23	-16.11	67.7329	259.5321
9	Student-I	Student-I	16	12	0.23	-0.11	0.0529	0.0121
10	Student-J	Student-J	12	8	-3.77	-4.11	14.2129	16.8921
11	Student-K	Student-K	12	12	-3.77	-0.11	14.2129	0.0121
12	Student-L	Student-L	16	24	0.23	11.89	0.0529	141.3721
13	Student-M	Student-M	0	16	-15.77	3.89	248.6929	15.1321
14	Student-N	Student-N	12	20	-3.77	7.89	14.2129	62.2521
15	Student-O	Student-O	16	8	0.23	-4.11	0.0529	16.8921
16	Student-P	Student-P	8	-4	-7.77	-16.11	60.3729	259.5321

Table 4.14. The Statistical Calculation of Gained Score of Each Students inExperiment Class and Control Class

17	Student-Q	Student-Q	24	20	8.23	7.89	67.7329	62.2521
18	Student-R	Student-R	20	16	4.23	3.89	17.8929	15.1321
19	Student-S	Student-S	12	12	-3.77	-0.11	14.2129	0.0121
20	Student-T	Student-T	20	4	4.23	-8.11	17.8929	65.7721
21	Student-U	Student-U	12	12	-3.77	-0.11	14.2129	0.0121
22	Student-V	Student-V	4	12	-11.77	-0.11	138.5329	0.0121
23	Student-W	Student-W	12	8	-3.77	-4.11	14.2129	16.8921
24	Student-X	Student-X	8	12	-7.77	-0.11	60.3729	0.0121
25	Student-Y	Student-Y	8	12	-7.77	-0.11	60.3729	0.0121
26	Student-Z	Student-Z	16	16	0.23	3.89	0.0529	15.1321
27	Student- AA	Student- AA	12	4	-3.77	-8.11	14.2129	65.7721
28	Student- BB	Student- BB	28	4	12.23	-8.11	149.5729	65.7721
29	Student- CC	Student- CC	24	24	8.23	11.89	67.7329	141.3721
30	Student- DD	Student- DD	28	8	12.23	-4.11	149.5729	16.8921
31	Student- EE	Student- EE	20	16	4.23	3.89	17.8929	15.1321
32	Student-FF	Student-FF	12	4	-3.77	-8.11	14.2129	65.7721
33	Student- GG	Student- GG	24	28	8.23	15.89	67.7329	252.4921
34	Student- HH	Student- HH	24	12	8.23	-0.11	67.7329	0.0121
35	Student-II	Student-II	16	8	0.23	-4.11	0.0529	16.8921
Σ			552	424			1821.4515	1903.5435
Mean			15.77	12.11				

Based on the table above, it can be concluded that the total of gained score of the experiment class (X) is 552 and the control class (Y) is 424. Then the researcher calculated t-test based on the procedure of the calculation by using the following formulas:

1. Determining mean of variable X (Experimental Class), with formula:

$$M_x = \frac{\sum fx}{N_x} = \frac{552}{35} = 15.77$$

2. Determining mean of variable Y (Control Class), with formula:

$$M_y = \frac{\sum fy}{N_y} = \frac{424}{35} = 12.11$$

3. Determining standard deviation of variable X, with formula:

$$SD_{x} = \sqrt{\frac{\sum fx^{2}}{N_{x}}}$$
$$= \sqrt{\frac{1821.4515}{35}} = \sqrt{52.04}$$
$$= 7.21$$

4. Determining standard deviation of variable Y, with formula:

$$SD_{y} = \sqrt{\frac{\sum f y^{2}}{N_{y}}}$$
$$= \sqrt{\frac{1903.5435}{35}} = \sqrt{54.39}$$
$$= 7.37$$

5. Determining standard error of mean variable X, with formula:

$$SE_{mx} = \frac{SD_x}{\sqrt{N-1}} = \frac{7.21}{\sqrt{35-1}} = \frac{7.21}{\sqrt{34}} = \frac{7.21}{5.83} = 1.24$$

6. Determining standard error of mean variable Y, with formula:

$$SE_{my} = \frac{SD_y}{\sqrt{N-1}} = \frac{7.37}{\sqrt{35-1}} = \frac{7.37}{\sqrt{34}} = \frac{7.37}{5.83} = 1.26$$

7. Determining standard error of different mean variable X and mean of variable Y, with formula:

$$SE_{mx-my} = \sqrt{SE_{mx^2} + SE_{My^2}}$$
$$= \sqrt{(1.24)^2 + (1.26)^2}$$
$$= \sqrt{1.5376 + 1.5876}$$
$$= \sqrt{3.1252}$$
$$= 1.77$$

8. Determining t_c, with formula:

$$t_c = \frac{M_x - M_y}{SE_{mx-my}}$$
$$= \frac{15.77 - 12.11}{1.77}$$
$$= \frac{3.66}{1.77} = 2.07$$

9. Determining t-table in significance level 5% with degrees of freedom (df), with formula:

$$df = (N_1 + N_2) - 2$$

= (35 + 35) - 2
= 70 - 2 = 68

= 68 in the significance level 5% (0.05) is 2.00 (see apendix)

From the calculation above the t_{table} value of df 68 in the degrees of significance level 5% (0.05) is 2.00. Based on the calculation data above, it can be seen that t_{count} is higher than t_{table} . because 2.07 > 2.00.

The final calculation was testing the hypothesis. This calculation to answer whether the students who were taught using story mapping technique gained significantly better score on reading comprehension of narrative text than students who were taught without using story mapping technique. Based on statement of hypothesis, the researcher formulate the hypothesis as follows:

a. Alternative Hypothesis (H_a)

The ninth grade students of MTsN 3 TAPIN who are taught by using story mapping technique in teaching reading comprehension of narrative text gain significantly better score on reading comprehension of narrative text than students who are taught without using story mapping technique.

b. Null hypothesis (H_0)

The ninth grade students of MTsN 3 TAPIN who are taught by using story mapping technique in teaching reading comprehension of narrative text do not gain significantly better score on reading comprehension of narrative text than students who are taught without using story mapping technique.

The criteria used to make decision as follows:

- If t-count (t_c) > t-table (t_t) in significant degree of 0.05, H_a (alternative hypothesis) is accepted and H_o (null hypothesis) is rejected.
- If t-count (t_c) < t-table (t_t) in significant degree of 0.05, H_0 (the null hypothesis) is accepted and H_a (alternative hypothesis) is rejected.

Based on result of t_{test} the value $t_{count} = 2.07$ and the value of t_{table} with df 68 in the degrees of significance level 5% (0.05) is 2.00 it can be infered that $t_c > t_{table}$ (2.07 > 2.00). Hence, the alternative hypothesis (H_a) is accepted and the null hypothesis (H_o) is rejected. It means the ninth grade students of MTsN 3 Tapin who were taught using story mapping technique gained significantly better score on reading comprehension of narrative text than students who were taught without using story mapping technique.