CHAPTER IV

RESULT AND DISCUSSSION

In this research, the writer used two instruments there are observation and test. The observation is to answer the result of the application in using group investigation strategy and the test is to answer the result of the influence in using group investigation strategy.

A. Result of the Application in Using Group Investigation Strategy

Before the writer answers the result of observation, the writer will describe the stages in the class, there are:

1. Pre-test in Experimental Class

Before the students got the treatment, they must do the pre-test to know student's ability. Pre-test consist of 10 multiple choice and 5 essay. The score of pre-test will be described in the following table:

Table 4.1

Student's Score of Pre-test

No	Name	Pre-test score
1	APD	60
2	APA	70
3	ATA	75
4	AS	50
5	AAS	60

6	AAR	45
7	ASLAM	40
8	BARA	55
9	DTR	50
10	DNQI	70
11	DA	60
12	DLH	75
13	FAH	75
14	HSPPH	75
15	IKAP	65
16	KN	70
17	KG	70
18	LS	75
19	LDM	70
20	MSD	70
21	MCT	80
22	RMN	75
23	RH	80
24	RAP	75
25	RC	70
26	SYP	40

27	TF	70
28	VRS	50
29	WP	60
30	YKW	80
N=30	TOTAL SCORE	1960
	AVERAGE	65,33

2. Treatment in Experimental Class

After the students did the pre-test, the next step is given the treatment. In the first meeting of treatment, the teacher explained about descriptive text and gave a picture of descriptive text about place and then the students search the example of descriptive text about place. After that, students read and comprehend about the text. The teacher give instruction to identify the text based on generic structures and language feature of descriptive text. The result of the first meeting, the students can investigate the text and knew generic structures about descriptive text.

In the second meeting of treatment, the teacher ask the students to identify the topics about descriptive text of place and arranging students into groups, students examine several sources and then purpose a number of topics. Planning tasks to be learned students plan together about: what students learn, how students learn, what for purpose or interest students do investigate the topic. Carry out investigation such as students searching

together the information, analyze the topic, and make conclusion. After finished investigate the text, students prepare the final report. After that is evaluation. Students give feedback to each other on the topic, about the tasks they have done, and about the effectiveness of their experiences. The result of the second meeting, the students more comprehend the text because in one member of group, there is a high level student so if another member cannot understand they can ask and discuss with the high level student.

3. Post-test in Experimental Class

After the students got the treatment, the researcher give the post-test consist 10 multiple choice and 5 essay to know the students' reading comprehension. The score of post-test will be described in the following table:

Table 4.2

Student's Score of Post-test

No	Name	Post-test score
1	APD	70
2	APA	80
3	ATA	85
4	AS	70
5	AAS	85
6	AAR	80

7	ASLAM	75
8	BARA	70
9	DTR	75
10	DNQI	90
11	DA	80
12	DLH	85
13	FAH	80
14	HSPPH	95
15	IKAP	75
16	KN	85
17	KG	80
18	LS	80
19	LDM	75
20	MSD	85
21	MCT	90
22	RMN	85
23	RH	85
24	RAP	80
25	RC	80
26	SYP	60
27	TF	80

28	VRS	70
29	WP	80
30	YKW	85
N=30	TOTAL SCORE	2395
	AVERAGE	79,83

Besides giving treatment, the researcher is helped the teacher to observe the student's enthusiastic in learning and learning process. The result of the observation sheet can be look on the table:

Table 4.3

Result of Observation Sheet

Observation Aspect	**Score**					**Explanation**
	1	**2**	**3**	**4**	**5**	
Student's enthusiastic in learning 1. Students have an interest in learning reading English using Group Investigation strategy 2. Students are enjoy in teaching learning						5 = Extremely Good 4 = Good 3 = Fair 2 = Low 1 = Extremely Low
Learning process						5 = Extremely Good

3. Students follow the teachers' instruction 4. Students listen the teacher's explanation about the material 5. Students read a text about description place in their group 6. Students learn together in their group about that text 7. Students do exercise individually in their group 8. Students have high level can be peer tutoring to other member in their group						4 = Good 3 = Fair 2 = Low 1 = Extremely Low
Total	∑ X = 34					-

- Determining Mean score with formula:

$$\text{Mean} = \frac{\sum X}{N}$$

$$= \frac{34}{8} = 4{,}25.$$

It means that the result of observation sheet is good, and the application the activities of using Group Investigation strategy in teaching reading comprehension applied well because the explanation in score 4,25 include in score 4, it is good. Indicator of observation include student's enthusiastic in learning, students have had an interest in learning descriptive text, it showed when teaching-learning process students were enjoy in studying using Group Investigation. The other indicators was learning process, it showed when learning process students followed the teacher's instruction, studied with group well and students have had high level was be peer tutoring in their group. After doing team work, they did exercise individually.

B. The Influence of Group Investigation Strategy in Teaching Reading Comprehension

1. Description of data

In this chapter, the writer would explain the result of research. The writer would attempt to submit the data as outcomes of research has hold in First Grade of SMAN 1 Kramatwatu. The writer took 60 students as a subject in this research. It is divided into two classes. There are 30 students from X MIPA 1 as the experimental class and 30 students from X MIPA 2 as the control class.

To getting the data the writer used test as instrument, they were result of pre-test and second one is the result of post-test. The result of post-test in experimental class is named variable (X_2) and the result of post-test in control class is named variable (Y_2).

Pre-test and post-test was same shape, it contained 15 items, which 10 items about multiple choice and 5 items other about essay. In that test, there was a descriptive text about place. The score of pre-test and post-test will be described in the following table:

Table 4.4

Student's Score of Experiment Class

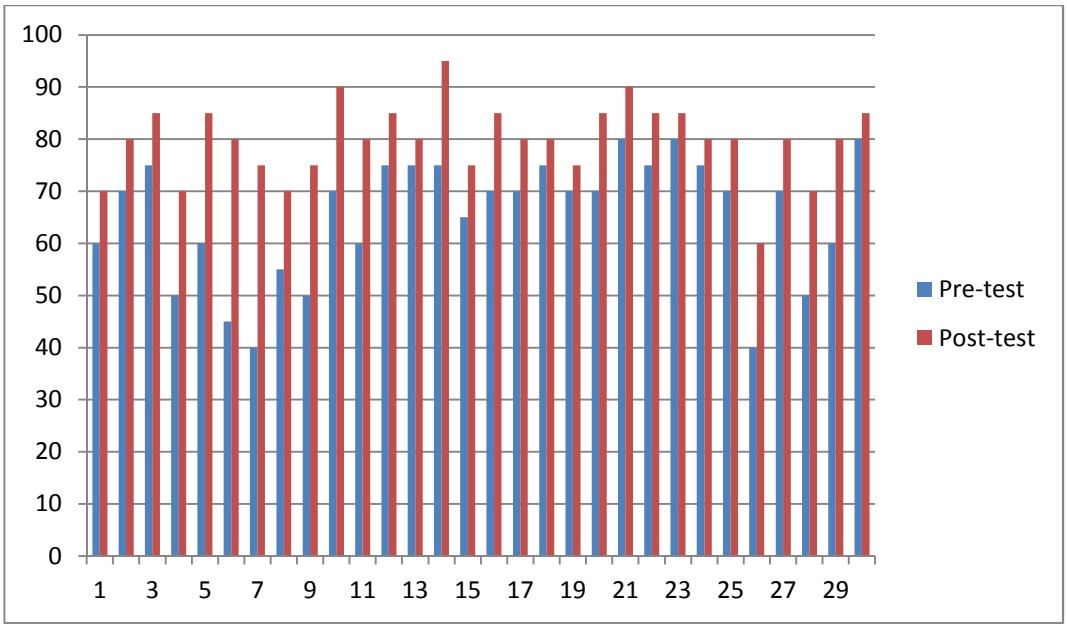
No	Name	Pre-test score	Post-test score	Gained
1	APD	60	70	10
2	APA	70	80	10
3	ATA	75	85	10
4	AS	50	70	20
5	AAS	60	85	25
6	AAR	45	80	35
7	ASLAM	40	75	35
8	BARA	55	70	15
9	DTR	50	75	25
10	DNQI	70	90	20
11	DA	60	80	20

12	DLH	75	85	10
13	FAH	75	80	5
14	HSPPH	75	95	20
15	IKAP	65	75	10
16	KN	70	85	15
17	KG	70	80	10
18	LS	75	80	5
19	LDM	70	75	5
20	MSD	70	85	15
21	MCT	80	90	10
22	RMN	75	85	10
23	RH	80	85	5
24	RAP	75	80	5
25	RC	70	80	10
26	SYP	40	60	20
27	TF	70	80	10
28	VRS	50	70	20
29	WP	60	80	20
30	YKW	80	85	5
N=30	TOTAL SCORE	1960	2395	425
	AVERAGE	65,33	79,83	-

After knew the result of the test to make easy to look the result, the writer reserved the graphic below:

Graphic 4.1

Result Pre-test and Post-test of Experiment Class



After that, the writer would determine mean score pre-test and post-test of experimental class, the writer follows the formula:

$M_1 = \frac{\Sigma X1}{N1}$

$= \frac{1960}{30}$

$= 65,33$

$M_1 = \frac{\Sigma X2}{N2}$

$= \frac{2395}{30}$

$= 79,83$

Determine mean with the formula:

$M = M_2 - M_1$

$= 79,83 - 65,33$

$= 14,5$

Note : M = Mean

M_1 = Mean of Pre-test

M_2 = mean of Post-test

X1= Students' score of Pre-test

X2= students' score of Post-test

N= Number of Students

The table above showed the students' score of pre-test and post-test at the experimental class. The highest score of pre-test was 80, it was gotten by three students and the lowest score was 40, it was gotten by two students and the average of pre-test score of pre-test was 65,33. Then, the highest score of post-test was 95, it was gotten by one student and the lowest score of post-test was 60, it was gotten by one student and the average score of post-test was 79,83. The students' result can show that the post-test is higher score after applied group investigation strategy. From the calculation of the determine mean the experimental class, the average between the pre-test and post-test increase amount 14,5.

Table 4.5

Student's Score of Control Class

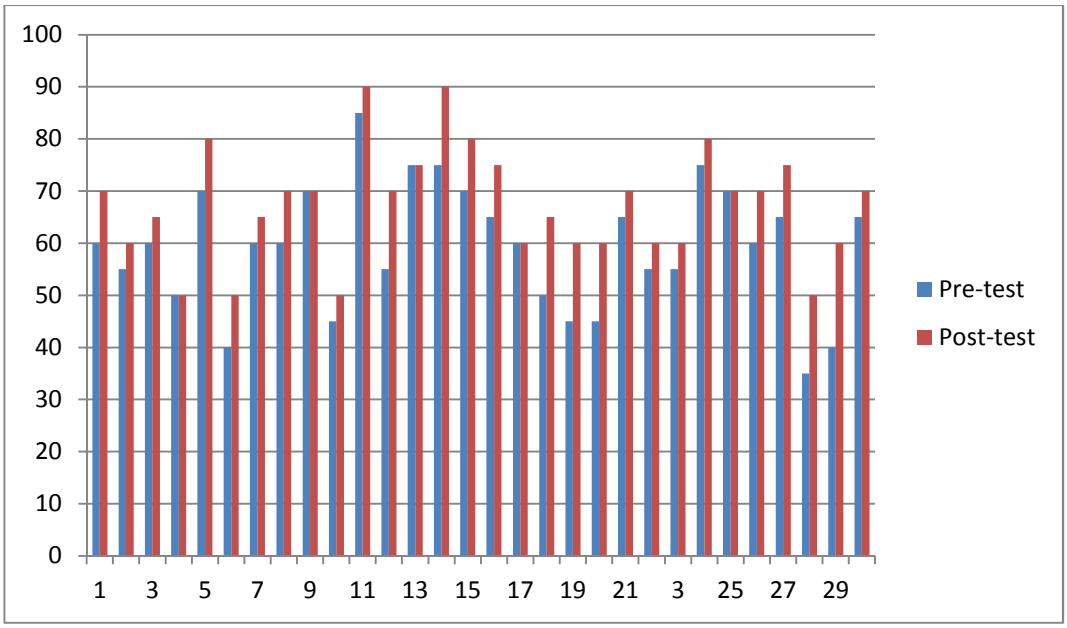
No	Name	Pre-test score	Post-test score	Gained
1	AORD	60	70	10
2	AR	55	60	5
3	AC	60	65	5
4	AW	50	50	0
5	AG	70	80	10

6	DI	40	50	10
7	DSKP	60	65	5
8	FN	60	70	10
9	FR	70	70	0
10	FA	45	50	5
11	FR	85	90	5
12	IR	55	70	15
13	INS	75	75	0
14	IM	75	90	15
15	IF	70	80	10
16	JE	65	75	10
17	KASB	60	60	0
18	MIH	50	65	15
19	MRM	45	60	15
20	MTW	45	60	15
21	MA	65	70	5
22	NAW	55	60	5
23	RHAW	55	60	5
24	RC	75	80	5
25	STIJS	70	70	0
26	SSA	60	70	10
27	SNN	65	75	10
28	SN	35	50	15
29	SDR	40	60	20
30	ZAMS	65	70	5
	TOTAL SCORE	1780	2020	240
	AVERAGE	59,33	67,33	

After knew the result of the test to make easy to look the result, the writer reserved the graphic below:

Graphic 4.2

Result Pre-test and Post-test of Control Class



After that, the writer would determine mean score of pre-test and post-test of control class, the writer follows the formula:

$M_1 = \frac{\Sigma X_1}{N_1}$ = $\frac{1780}{30}$ = 59,33

$M_2 = \frac{\Sigma X_2}{N_2}$ = $\frac{2020}{30}$ = 67,33

Determine mean with the formula:

$M = M_2 - M_1$

$= 67,33 - 59,33$

$= 8$

Note : M = Mean

M_1 = Mean of Pre-test

M_2 = Mean of Post-test

$Y1$ = Students' score of Pre-test

$Y2$ = students' score of Post-test

N = Number of Students

The table 4.5 showed that lowest score of pre-test 35, it was gotten by one student and the highest score of pre-test is 85, it was gotten by one student. Then, the highest score of post-test was 90, it was gotten by two students and the lowest score of post-test was 50, it was gotten by four students and the average score of pre-test was 59,33. The students' score in control class was less because in this class not use group investigation strategy. After the calculation of the determine mean the control class, the average between the pre-test and post-test increase amount 8.

After comparison between the score of pre-test and post-test in experimental class and control class, the writer calculates deviation and squared deviation. The result of the calculation by using the formula t-test can be seen at the analysis of the data.

2. Analyzing the Data

After the writer got the data from pre-test and post-test score from experimental and control class. The writer analyzed the data by t-test formula with the degree of significance 5% and the writer used steps of formula.

Table 4.6

The Score of Distribution Frequency

No	X	Y	x	y	x^2	y^2
1	70	70	-9,83	2,67	96,62	7,12
2	80	60	0,17	-7,33	0,02	53,72
3	85	65	5,17	-2,33	26,72	5,42
4	70	50	-9,83	-17,33	96,62	300,32
5	85	80	5,17	12,67	26,72	160,52
6	80	50	0,17	-17,33	0,02	300,32
7	75	65	-4,83	-2,33	23,32	5,42
8	70	70	-9,83	2,67	96,62	7,12
9	75	70	-4,83	2,67	23,32	7,12
10	90	50	10,17	-17,33	103,42	300,32
11	80	90	0,17	22,67	0,02	513,92
12	85	70	5,17	2,67	26,72	7,12
13	80	75	0,17	7,67	0,02	58,82
14	95	90	15,17	22,67	230,12	513,92

15	75	80	-4,83	12,67	23,32	160,52
16	85	75	5,17	7,67	26,72	58,82
17	80	60	0,17	-7,33	0,02	53,72
18	80	65	0,17	-2,33	0,02	5,42
19	75	60	-4,83	-7,33	23,32	53,72
20	85	60	5,17	-7,33	26,72	53,72
21	90	70	10,17	2,67	103,42	7,12
22	85	60	5,17	-7,33	26,72	53,72
23	85	60	5,17	-7,33	26,72	53,72
24	80	80	0,17	12,67	0,02	160,52
25	80	70	0,17	2,67	0,02	7,12
26	60	70	-19,83	2,67	393,22	7,12
27	80	75	0,17	7,67	0,02	58,82
28	70	50	-9,83	-17,33	96,62	300,32
29	80	60	0,17	-7,33	0,02	53,72
30	85	70	5,17	2,67	26,72	7,12
∑	2395	2020			1.523,9	3.336,4

Note :

X : Score Post-test of the Experimental Class

Y : Score Post-test of the Control Class

x : Deviation of Experimental Class

y : Deviation of Control Class

x^2 : the Squared Deviation of Experimental Class

y^2 : the Squared Deviation of Control Class

a. Determining mean of variable X (variable I) with formula:

$$M_x = \frac{\Sigma X}{N_1}$$

$$= \frac{2.395}{30}$$

$$= 79,83$$

b. Determining mean of variable Y (variable II) with formula:

$$M_y = \frac{\Sigma Y}{N_2}$$

$$= \frac{2.020}{30}$$

$$= 67,33$$

c. Determining deviation standard of variable I with formula:

$$SD_x = \sqrt{\frac{\Sigma x^2}{N_1}}$$

$$= \sqrt{\frac{1.523,9}{30}}$$

$$= \sqrt{50,79}$$

$$= 7,12$$

d. Determining deviation standard of variable II with formula:

$$SD_y = \sqrt{\frac{\Sigma Y^2}{N_1}}$$

$$= \sqrt{\frac{3.336,4}{30}}$$

$$= \sqrt{111,21}$$

$$= 10,54$$

e. Determining standard error of mean variable I with formula:

$$SE_{M_x} = \frac{SD_X}{\sqrt{N_1 - 1}}$$

$$= \frac{7,12}{\sqrt{30 - 1}}$$

$$= \frac{7,12}{\sqrt{29}}$$

$$= \frac{7,12}{5,38}$$

$$= 1,32$$

f. Determining standard error of mean variable II with formula:

$$SE_{M_y} = \frac{SD_y}{\sqrt{N_2 - 1}}$$

$$= \frac{10,54}{\sqrt{30 - 1}}$$

$$= \frac{10,54}{\sqrt{29}}$$

$$= \frac{10,54}{5,38}$$

$$= 1,95$$

g. Determining standard error of mean difference variable I and variable II with formula:

$$SE_{M_1-M_2} = \sqrt{SE_{M_1}{}^2 + SE_{M_2}{}^2}$$

$$= \sqrt{1{,}32^2 + 1{,}95^2}$$

$$= \sqrt{1{,}74 + 3{,}80}$$

$$= \sqrt{5{,}54}$$

$$= 2{,}35$$

h. Analyzing the result by using calculation of the t-test as follow:

$$t_o = \frac{M_1 - M_2}{SE_{M_1-M_2}}$$

$$= \frac{79{,}83 - 67{,}33}{2{,}35}$$

$$= \frac{12{,}5}{2{,}35}$$

$$= 5{,}31$$

i. Determining degrees of freedom (df) with formula:

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

$$= (30 + 30) - 2$$

$$= 60 - 2$$

$$= 58 \text{ (consult to “t” table score)}$$

Based on t table that there is 58, with df as number 58 is got t table as follow:

- At significance level 5% : $t_t = 2,00$
- At significance level 1% : $t_t = 2,66$

So after the writer calculated this data based on the formula t-test, the obtained t_o or $t_{observation}$ was 5,31.

The writer concluded that experimental class which used group investigation strategy in teaching reading comprehension that increased the students' result as significant between pre-test and post-test. But, the control class that only used ordinary strategy there is no increase significant between pre-test and post-test. It can be seen in the table, the result of the pre-test and post-test of experimental class got increasing comprehend different with control class.

Table 4.7

The Scores Pre-test and Post-test from Experimental Class and Control Class

Class	Pre-Test	Post-test	Gained
Experimental Class	1960	2395	425
Control Class	1780	2020	240

C. Interpretation of the Data

In this research, the writer described the interpretation of the research finding and summarized the hypothesis. The research was held to answer the

question, How is the application of Group Investigation strategy in teaching reading comprehension at first grade senior high school of SMAN 1 Kramatwatu? How is the influence of Group Investigation in students' reading comprehension at first grade senior high school of SMAN 1 Kramatwatu? in order to answer the question the writer formulated the Null Hypothesis (H_o) and the Alternative Hypothesis (H_a) as follow :

H_a (Alternative Hypothesis) : there is a significant difference of students' reading comprehension between students who are taught using group investigation strategy and students who are taught without using group investigation strategy.

H_o (Null Hypothesis) : there is not significant difference of students reading comprehension between students who are taught using group investigation strategy and students who are taught without using group investigation strategy.

The assumption of this hypothesis as follow:

If $t_o \geq t_{table}$ the Null Hypothesis is rejected and Alternative Hypothesis is accepted. It means there is a significant difference of students' reading comprehension between students who are taught using group investigation strategy and students who are taught without using group investigation strategy.

If $t_o \leq t_{table}$, the Null Hypothesis is accepted and Alternative Hypothesis is rejected. It means there is no significant difference of students

reading comprehension between students who are taught using group investigation strategy and students who are taught without using group investigation strategy.

According to the statistical calculation above, the value of t_o is 5,31 and the degree of freedom is 58. In degree of significance 5% from 58 (t table) = 2,00, in degree of significance 1% from 58 (t table) = 2,66. After get the data, the writer compared it with t_t (t table) both in degree 5% and 1%. Therefore, $t_0 : t_t = 5,31 > 2,00$, in degree of significance 5% and $t_0 : t_t = 5,31 > 2,66$, in degree of significance 1%.

The writer summarized that $t_o \geq t_{table}$ it means that the Null Hypothesis H_o is rejected and the Alternative Hypothesis H_a is accepted. It means that using Group Investigation strategy has significant on teaching reading comprehension in descriptive text.

Based on the data obtained from experimental class and control class, it has found that the students who are taught by using Group Investigation strategy has been improved in teaching reading comprehension in descriptive text than the students who are taught without using Group Investigation strategy because in experiment class the students who are taught by using Group Investigation strategy could elaborate team work and do individually, it made the students more understanding the text. In their group there was a smart student that has be

peer tutoring, if the students could not understand, they could ask to another the student. So, the students were enthusiastic in learning descriptive text.

On other hand, in control class where students are taught reading comprehension in descriptive text without Group Investigation strategy, the students got the material about descriptive text and only did exercise in their work sheet.

The research shows that both in the pre-test and post-test students from experimental class perform better than students from control class. This interpretation is based on the comparison of experimental class and control class students' average score.

From the data, that mean of pre-test score obtained by students of MIPA 1 as experimental class = 65,33 and the pre-test score obtained by students of MIPA 2 as a control class = 59,33. The highest score in two classes was different that was MIPA 1 as experimental class got 80 and MIPA 2 as control class got 85. And the lowest score of pre-test in both classes was 40 for experimental class and 35 for control class.

Then, the means of post-test at experimental score = 79,83 was greater than control class= 67,33. The highest score of post-test at experimental class got 95 and control class got 90. The lowest post-test score of experimental class is 60, and the lowest post-test score of control class is 50.

Based on the result of statistical calculation, it was obtained the t-observation t_o was 5,31; meanwhile, the t-table (t_{table}) of df 58 in significance 5% was 2,00. It means t-observation (t_o) was higher than t-table (t_{table}), so null hypothesis (H_o) rejected and alternative hypothesis (H_a) is accepted. It means that using Group Investigation strategy has significant influence on teaching reading comprehension in descriptive text.

The result of t-test is also supported by the result of observation. In result of observation, there were two indicators in observation sheet, they are student's enthusiastic in learning and learning process. Indicator of observation include student's enthusiastic in learning, students have had an interest in learning descriptive text, it showed when teaching-learning process students were enjoy in studying using Group Investigation. The other indicators was learning process, it showed when learning process students followed the teacher's instruction, studied with their group well and students have had high level was be peer tutoring in their group.

Based on the interpretation above, the writer conclude that using Group Investigation strategy has significance in teaching reading comprehension in descriptive text because the students can discuss and ask to their teammates if they do not understand of the text. So, the students more comprehend about descriptive text.