

## CHAPTER IV

### RESEARCH FINDING AND DISCUSSION

This chapter presents three topics related to research finding that are the description of data, hypothesis testing and discussion.

#### A. The Description Of Data

In this study, the writer wants to know the effectiveness of using Group Investigation (GI) to improve students' reading comprehension. The effectiveness can be seen from the significant different score of students reading comprehension before and after using Group Investigation (GI). The presentation of the data were answers based on the formulated of research problems in chapter 1.

That are: a). the student's achievement in reading comprehension before being taught by using Group Investigation (GI). b). the students' achievement in reading comprehension after being taught by using Group Investigation (GI). c). whether there is significant difference before and after being taught by using Group Investigation (GI).

Then, the presentation of data is as follows:

1. Students' Reading Achievement before being implemented Group Investigation (GI). (pre – test score).

The pre test was followed by 46 students of the experimental group. The researcher allocates 45 minutes for conducting pre-test. The pre-test was in the form of multiple choices and true or false. It was done before treatment process using Group Investigation (GI). This test was intended to know the basic competence of the students reading comprehension before giving the treatment.

**Table: 4.1 The students' score in pre test**

<b>No.</b>	<b>Subject</b>	<b>Pretest Score</b>
1.	A	50
2.	B	60
3.	C	85
4.	D	80
5.	E	60
6.	F	75
7.	G	45
8.	H	55
9.	I	60
10.	J	35
11.	K	45
12.	L	45
13.	M	40
14.	N	40
15.	O	60
16.	P	65
17.	Q	40
18.	R	30
19.	S	90
20.	T	50
21.	U	60
22.	V	35
23.	W	50
24.	X	50
25.	Y	45
26.	Z	40

27.	A1	45
28.	A2	55
29.	A3	55
30.	A4	75
31.	A5	50
32.	A6	40
33.	A7	60
34.	A8	55
35.	A9	50
36.	A10	55
37.	A11	55
38.	A12	65
39.	A13	60
40.	A14	50
41.	A15	50
42.	A16	60
43.	A17	70
44.	A18	75
45.	A19	55
46.	A20	80

From the presentation of the results of pre test, the students' score could be categorized into the following table of criteria students' score.

**Table 4.2 Table of Criteria Students' Score**

No.	Grade	Qualification	Range Score
1.	A	Excellent	86 – 100
2.	B	Good	76 – 85
3.	C	Average	56 – 75
4.	D	Poor	46 – 55
5.	E	Very poor	0 – 45

The students' score above then were computed by using SPSS. The result was shown in the Table 4.3 below.

**Table 4.3 Descriptive Statistic of Pre Test**

**Statistics**

VAR00001

N	Valid	46
	Missing	0
Mean		55.4348
Median		55.0000
Mode		50.00 <sup>a</sup>

Based on the table 4.3, it can be seen that the students consist of 46 students. It shows that mean score 55.43, indicated that the averages of 46 student's score is 55.43. Based on the criteria of student's score 55.43 is classified average score. The median score is 55.00. The mode is simply that value which has the highest frequency. It means that the most frequent students' score is 50.00 indicated that many students got poor score.

**Table 4.4 Frequency of Pre Test**

**VAR00001**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	30	1	2.2	2.2	2.2
	35	2	4.3	4.3	6.5
	40	5	10.9	10.9	17.4
	45	5	10.9	10.9	28.3
	50	8	17.4	17.4	45.7
	55	7	15.2	15.2	60.9
	60	8	17.4	17.4	78.3
	65	2	4.3	4.3	82.6
	70	1	2.2	2.2	84.8
	75	3	6.5	6.5	91.3
	80	2	4.3	4.3	95.7
	85	1	2.2	2.2	97.8
	90	1	2.2	2.2	100.0
	Total	46	100.0	100.0	

From the table 4.4, The frequency of pretest after being distributed there are 13 students getting score between 0 – 45, which means that the students' reading achievement is very poor, 15 students getting score between 46 – 55 which means that on the students' reading achievement is poor, 14 students getting score between 56 – 75 which means that the students' reading achievement is at average, 3 students getting score between 76 – 85 which means that on the students' reading achievement is good, and only one student getting score between 86 – 100 which means that on the students' reading achievement is excellent.

2. Student's reading achievement after implemented Group Investigation (GI) (post - test score).

The post test was also followed by 46 students of the experimental group. The researcher allocates 35 minutes for conducting pre-test. The post-test was same with pre test that is in the form of multiple choices and true or false. It was done after treatment process using Group Investigation (GI). This test was intended to know the result or the effect of treatment toward students reading comprehension before giving the treatment.

**Table 4.5 the students' scores in Post Test**

No.	Subject	Posttest Score
1.	A	85
2.	B	60
3.	C	90
4.	D	90
5.	E	75
6.	F	95
7.	G	40
8.	H	75
9.	I	85
10.	J	40
11.	K	80
12.	L	75
13.	M	75
14.	N	85
15.	O	80
16.	P	75

17.	Q	55
18.	R	60
19.	S	90
20.	T	70
21.	U	75
22.	V	65
23.	W	65
24.	X	65
25.	Y	65
26.	Z	65
27.	A1	65
28.	A2	65
29.	A3	70
30.	A4	80
31.	A5	75
32.	A6	60
33.	A7	75
34.	A8	60
35.	A9	70
36.	A10	70
37.	A11	70
38.	A12	90
39.	A13	60
40.	A14	70
41.	A15	45
42.	A16	70
43.	A17	90
44.	A18	60
45.	A19	85

46.	A20	80
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The students' score above then were computed by using SPSS. The result was shown in the table 4.6 below.

**Table 4.6 Descriptive Statistic of Post Test**

Statistics		
VAR00002		
N	Valid	46
	Missing	0
Mean		71.5217
Median		70.0000
Mode		75.00

Based on the table 4.6 can be seen that the students consist of 46 students. It shows that mean score 71.52, which means that the average of 46 students are get score is 71.52, indicated that the students can mastery reading well. The median score is 70.00. In this case mode score is 75 so, there are many students got enough score.



**Table 4.7 Frequency of Post Test**

VAR00002

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 40	2	4.3	4.3	4.3
45	1	2.2	2.2	6.5
55	1	2.2	2.2	8.7
60	6	13.0	13.0	21.7
65	7	15.2	15.2	37.0
70	7	15.2	15.2	52.2
75	8	17.4	17.4	69.6
80	4	8.7	8.7	78.3
85	4	8.7	8.7	87.0
90	5	10.9	10.9	97.8
95	1	2.2	2.2	100.0
Total	46	100.0	100.0	

From the table 4.7, The frequency of posttest after being distributed are 3 students getting score between 0 – 45, which means that the students' reading achievement is very poor, one student getting score between 46 – 55 which means that the students' reading achievement is poor, 28 students getting score between 56 – 75 which means that the students' reading achievement is at average, 8 students getting score between 76 – 85 which means that on the students' reading achievement is good, and 6 students getting score between 86 – 100 which means that on the students' reading achievement is classified as excellent score.

### 3. The significant difference between pre-test and post-test

There are differences data presentations between before taught by using Group Investigation (GI) as a technique and after taught by using Group Investigation (GI)

as a technique. The data present that the score after taught by using Group Investigation (GI) as a technique better than higher before taught by using Group Investigation (GI) as a technique.

The researcher uses statistical test using *paired sample t-test* stated by SPSS 16.00 to ensure the effectiveness of using Group Investigation (GI) on the students' reading achievement. The result is as follows

**Table 4.8 Paired Sample Statistics**

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	VAR00001	55.4348	46	13.69615	2.01939
	VAR00002	71.5217	46	12.86121	1.89628

Based on the table 4.8, the data presented are the performance scores of the members of one group which the students who were taught before and after using Group Investigation (GI) in reading comprehension. Output paired sample statistics shows that there are mean scores differences between pre-test and post-test. The mean score of pre-test is 55.43 and the mean score of post-test is 71.52. So, the mean score of post-test is higher than the mean score of pre-test. It means that the student's score increase after being taught using Group Investigation (GI) in reading comprehension. The number of subjects or respondents of each sample (N) is 46 students.

Meanwhile, standard deviation of pre-test is (13.69) and standard deviation of post-test is (12.86). Mean standard error for pre-test is (2.019), while mean

standard error for post-test is (1.896). So, we can conclude that the value increases after being taught using Group Investigation (GI) in reading comprehension

**Table 4.9 Paired Samples Correlations**

	N	Correlation	Sig.
Pair 1 VAR00001 & VAR00002	46	.580	.000

Based on the table 4.9, output *paired samples correlation* shows the large correlation between samples, where can be seen numeral both correlation is (0.580) and numeral significance (0.000). For interpretation of decision based on the result of probability achievement, that is:

- a. If the probability  $> 0.05$  then the hypothesis null accepted
- b. If the probability  $< 0.05$  then the hypothesis null rejected

The large of numeral significant (0,000) smaller from (0,05). It means that the hypothesis clarify there is no significant different score using Group Investigation (GI) as a technique on the students' reading achievement at the seventh grade of MTs Al Ma'arif Tulungagung is rejected. The other word, taught using Group Investigation (GI) is effective on the students' reading achievement in teaching reading.

**Table 4.10 Paired Samples Test**

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		T	Df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	VAR00001 - VAR00002	-1.60870E1	12.19804	1.79850	-19.70933	12.46458	-8.945	45	.000

Based on table 4.10, output paired samples test shows the result of compare analysis with using T-test. The difference mean score of pre-test and post-test is -1.60870. Standard deviation is 12.19804, mean standard error is 1.79850, the lower different is -19.70933, while upper different is -12.46458. The result of  $t_{\text{count}}$  is -8945 (symbol minus in this matter ignored) with  $df$  is 45 and significance (2-tailed) is 0.000.

The significance value is 0.00 and the significance level is 0.05. It means that the significance value is smaller than significance level ( $0.00 < 0.05$ ). So, the alternative hypothesis ( $H_a$ ) is accepted and null hypothesis ( $H_0$ ) is rejected.

Then the researcher gave interpretation to  $t_{\text{table}}$ . First the researcher considered the  $df = N-1$  with  $df$  was 45. At the significance level of 0.05, the score of  $t_{\text{table}}$  was 1.679. By comparing the  $t_{\text{count}}$  and  $t_{\text{table}}$  it was found that  $t_{\text{count}}$  was bigger than  $t_{\text{table}} = (8.945 > 1.679)$ . So, the alternative hypothesis ( $H_a$ ) is accepted and the null hypothesis ( $H_0$ ) is rejected.

It means that there is significant different of students' achievement in reading comprehension before and after taught by using Group Investigation (GI) on the students' reading achievement.

### **B. Hypothesis Testing**

From the data analysis it could be identify that:

1. When the value of  $t_{\text{count}} > t_{\text{table}}$  in  $df = 45$  with the significant level 0.05. The alternative hypothesis ( $H_a$ ) is accepted and the null hypothesis ( $H_o$ ) is rejected. It means that there is significant different score of reading achievement to the first grade students before and after being taught using Group Investigation (GI) technique.
2. When the value of  $t_{\text{count}} < t_{\text{table}}$  in  $df = 45$  with the significant level 0.05. The null hypothesis ( $H_o$ ) is accepted and the alternative hypothesis ( $H_a$ ) is rejected. It means that there is no significant different score of reading achievement to the first grade students before and after being taught using Group Investigation (GI) technique.

The mean of total reading test score of 45 students before being taught using Group Investigation (GI) is (55.43). After getting treatment, the means score of students' reading is (71.52). It means that the students' score is improved.

Based on the statistical calculation using t-test, the researcher gives interpretation to  $t_{\text{count}}$ . First, she considered the  $d.f.$  with the  $d.f.$  ( $46-1= 45$ ). She checked to the score of "t" at the significant level of 0.05. In fact, with the  $d.f.$  of (45) and the critical value 0.05 significant  $t_{\text{table}}$  was (1.679). By comparing the "t" that she got in calculation  $t_{\text{count}} = (8.945)$  and the value  $t_{\text{table}}$  in sig. level of 0.05 is 1.679, it is known that  $t_{\text{count}}$  is bigger than  $t_{\text{table}} = 8.945 > 1.679$ .

Because the  $t_{\text{count}}$  is bigger than  $t_{\text{table}}$  the null hypothesis ( $H_0$ ) is rejected and the alternative hypothesis ( $H_a$ ) is accepted. It means that there is significant different score of students reading achievement of the second grade students of MTs AL Ma'arif Tulungagung before and after being taught by using Group Investigation (GI) technique.

### **C. Discussion**

As discussed of research method in chapter III, the teaching and learning process was divided into three steps. First step was preliminary study by which conducted a preliminary study to know the student's reading comprehension by administering pre-test before being taught using Group Investigation (GI) technique. The second was given treatment to the students; the treatment used in this study is Group Investigation (GI) technique. Group Investigation (GI) technique is one of cooperative learning develop by Shlomo and Yael Sharan (1992:116) at the University of Tel-Aviv, is a general classroom organization plan in which students work in small groups using cooperative inquiry, group discussion, and cooperative planning and projects. They do an interaction and discussion with their group to solve the problem in learning process that given by the teacher and all of members have same responsible toward their groups. The third was post-test which it was conducted to know the students' achievement in reading comprehension after being taught Group Investigation (GI) technique.

According to the mean score, the mean score of post-test is higher than the mean score of pre-test. It also means that teaching reading comprehension using Group Investigation (GI) technique is better than teaching reading taught without Group Investigation (GI) technique.

### **1. Students' reading achievement taught without Group Investigation (GI) technique**

Students' reading achievement is poor. It is proved by when they are taught without Group Investigation (GI) technique. Students read the reading one by one in every meet. They learn and try to get the new information of the descriptive text that they read themselves. As we know from the research findings, the students which are taught without Group Investigation (GI) technique have lower score than using Group Investigation (GI) technique. It is proved by the calculation of mean score on pre-test was 55.43 and post-test was 71.52. From this situation and result of research finding the researcher concludes that conventional technique is not good enough use in teaching reading.

### **2. Students' reading achievement taught using Group Investigation (GI) technique**

Applying Group Investigation (GI) technique in teaching learning process gives positive benefit for students reading achievement. There are: can make the students more active to learn reading, understand the text easily. As we know from the research findings, the students which are taught using Group Investigation (GI) technique have higher score than without Group Investigation (GI) technique. It is proved by the calculation of mean score on post-test was 71.52 and pre-test was 55.43. So, the researcher concluded that this technique is very useful to make the students more active, get easy and improve students' achievement in reading.

### **3. Difference of reading student achievement taught without using summarizing technique and those taught using Group Investigation (GI) technique.**

Teaching reading comprehension without Group Investigation (GI) technique make the students be passive teaching and sometime both teacher and students become bored. Teaching reading comprehension using Group Investigation (GI) technique make the students more active to learn reading, understand the text easily. As we know from the research findings, the students which are taught using Group Investigation (GI) technique have higher than teaching without Group Investigation (GI) technique.

Then by calculated of hypothesis test indicated  $t_{\text{count}} > t_{\text{table}}$ . Based on data analysis, the  $t_{\text{count}}$  is bigger than  $t_{\text{table}}$ , it shows that the score of t-test 8.945 and the score of the score of  $t_{\text{table}}$  in sig. level of 0.05 is 1.679. From the finding, it is known that  $t_{\text{count}}$  is bigger than  $t_{\text{table}}$ . So, the alternative hypothesis ( $H_a$ ) is accepted and the null hypothesis ( $H_0$ ) is rejected. It means that there is significant different of students achievement in reading comprehension before and after being taught by using Group Investigation (GI) technique at MTs AL Ma'arif Tulungagung. The null hypothesis ( $H_0$ ) states that there is no significant different score of students' achievement in reading before and after being taught by using Group Investigation (GI) technique is rejected.

The finding of this research stating that Group Investigation (GI) technique is considered as an effective for the students' reading comprehension achievement in reading text using Group Investigation (GI). It also could be seen in the treatment process, the students are more interested when the researcher applied this



technique. The students become conducive and active because they are taught to work together with their friends. As Sihombing (2014: 80) stated that group investigation is one kinds of model learning that democratic because students become actively learn and practice self-sufficiency in learning.

In Group Investigation require students work in small group, group discussion, and report on in-depth research projects. They work together to achieve the goal or the success which has always been desired by them. These projects provide opportunities for students to study a topic intensely and gain specialized knowledge about a specific area. It will help the students in reading comprehension ability. Because allowing students to select topics of special significance to them, to form interest groups, and carry out their own research can be very motivating (Barkley, Elizabeth F. et al., 2005: 199). It also create the students enjoy and be stimulated in learning English.

Regarding on the result of data analysis above, it's also strongly with previous study as stating that Group Investigation (GI) technique is considered as an effective for the students' reading comprehension achievement in reading text .The first thesis written by Mabruroh conducted a research entitled *The Use Of Group Investigation (Gi) Method To Improve Students' Reading Ability In Descriptive Text*. The research conducted in Classroom Action Research with (CAR). There were two cycles applied in conducting this study. Each cycle consisted of two meetings. The result of the research showed that Group Investigation (GI) technique can improve students' reading achievement in reading comprehension.

The second written by Jismulatif conducted a research entitled *The Use Of Group Investigation To Improve Reading Comprehension Of The Second Year Student AtSman 2 Bangko*. The research conducted in Classroom Action Research with (CAR). This study consisted of one cycle of classroom treatment, in which that cycle consisted of four stages, namely Planning, Action, Observation, and Reflection. The result of the research showed that the research was successful to help the students improving their ability in comprehending reading comprehension by using group investigation.

The last is thesis written by Girsang conducted a research entitled *The Effect of Applying Group Investigation Method on Students' Achievement in Reading Comprehension*. The research conducted in experimental study. The result of the research showed that applying Group Investigation Method significantly affected the students' achievement in reading comprehension.

From the explanation above, it can be conclude that using Group Investigation technique is effective in this research. And the technique above is accepted by the researcher, especially in understanding the reading comprehension to the junior high school, because it can improve the students' reading achievement in seventh grade at MTs AL Ma'arif Tulungagung in academic year 2015 /2016.