

## CHAPTER III

### RESEARCH METHOD

This chapter presents seven topics dealing with the research method. There are research design, population and sample, data collection method, research instrument, validity and reliability testing, and data analysis.

#### A. Research Design

Research is truly necessary in educative process, which is to know and solve the problems that happen in process teaching and learning. The design of the research is quantitative. Muijs (2004:1) states quantitative research is explaining phenomena by collecting numerical data that are analyzed using mathematically based methods (in particular statistics). In the quantitative research there are experimental and non experimental. Experimental research involves a study of the effect of the systematic manipulation of one variable and non experimental research, the researcher identifies variable and may look for relationship among them, but does not manipulate the variables (Ary, 2002:24).

The design of this research is an experimental research. According to Ary (2002:276) an experimental is a scientific investigation in which the researcher manipulates one or more independent variables, control any other relevant variables, and observe the effect of the manipulation on the depend variables. An experimental design serves two functions:

1. It establishes the condition for the comparisons required to test the hypothesis of the experiment.

2. It enables the experimenter through statistical analysis of the data to make a meaningful interpretation of the result of the study.

This experimental design used pre - experimental research design (*one – group pretest – post test design*), which researcher only uses one class as the subject of study without control group or comparison group and in this research study consists of pre-test, treatment and post test. The pretest and post test are given to take the score of the students' achievement before and after being taught using Group Investigation (GI) technique. The both of the score were computed by using t- test to find out if there is significant influence of teaching reading comprehension by using Group Investigation (GI) technique. The design of the research can be seen at the table below.

**Table 3.1 The Design of One-Group Pretest Post Test**

Pretest	Independent variable	Posttest
Y1	X	Y2

This research intended to investigate the effectiveness of using *Group Investigation (GI)* technique in teaching reading comprehension of seventh grade students at MTs AL Ma'arif Tulungagung in academic years 2015/2016. The use of the treatment is aimed at proving whether the increase score possibly got by the researcher. Thus, the effectiveness of that treatment will know the significant score when the student taught using *Group Investigation (GI) technique*.

## **B. Population and Sample**

### **1. Population**

Arikunto (2006:130) said that population is the whole research subject. It is important that the research must be designed carefully and completely. In this research, the researcher took the population of the class seventh grade of MTs AL Ma'arif Tulungagung in academic 2015 / 2016.

### **2. Sample and sampling**

Selected of the sample is very important step in conducting a research study. Sample is a part of population which will to be analyzed. Sample taken from the population should be representative. According the explanation above the sample of the research is the seventh D class that consists of 45 students at MTs Al Maarif Tulungagung in academic 2015-2016.

Sampling is the process of taking sample. Ary (2002: 163) states "The purpose of sampling is to obtain information concerning the population". The researcher used purposive sampling to take sample from population and it represent the entire population. Ary (2002:169) states "Purposive sampling-also referred to as judgment sampling-sample elements judged to be typical, or representative, are chosen from the population."

Whereas, the seventh grade at MTs AL Ma'arif Tulungagung consists of four classes those are A, B, C, and D. The writer decided VII D as recommended by the teacher who handle English lesson in MTs Al Ma'arif Tulungagung .On VII D class the students tend to be passive in learning English especially for reading activity and Group Investigation (GI) technique as a model of teaching method

yang that suitable to prove the problem, because Group Investigation (GI) technique is one kinds of cooperative learning method which is useful for students not only to comprehend the English text but the students can learn how to share, discuss and work together with another because this technique requires students work in a group. And it makes the condition in the classroom become conducive and active.

### **C. Data collection method**

Data collection method is the method to obtain the data in the research. In this research the data collection method is administering test that consist of pre test and post test. The procedure of administering test was clarified as follow:

#### **1. Pre-test**

As the first meeting, the researcher gave a pre-test to the students. It was conducted to know the students score in reading comprehension before being taught the treatment. This test is given in order to know how far the students ability in reading comprehension of descriptive text. The pre-test comprised 15 items in form of multiple choices and True or False.

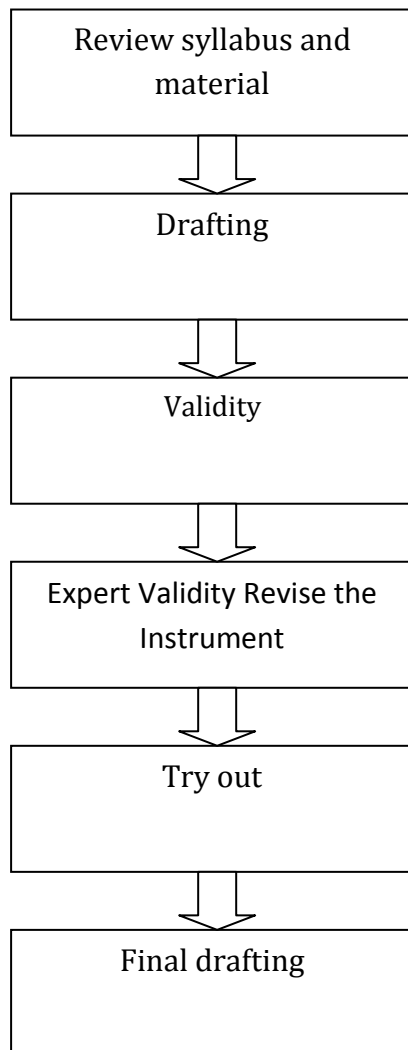
#### **2. Post-test**

The post-test is given to the students after conducting the treatment of using Group Investigation (GI) technique to improve the students' reading comprehension. Similarly to pre-test the post test also comprised 15 items in form of multiple choices and True or False.

#### **D. Research instrument**

Research instrument is tool of collecting data. The instrument in this research is test. Test is a method to gain the data by giving some question to the respondent. In this research the writer used achievement test to collect data. Achievement test measures what a person has learn (achieved) during a course of instruction (Allison, 1999: 80).

This test used to measure the students achievement in reading comprehension before and after being taught by using Group Investigation (GI) technique in MTs AL Ma'arif Tulungagung. She used two kinds of test pre-test and post-test. The first was pre-test, which was given before students are taught by using Group Investigation (GI) technique. The second was post-test, which was given after students are taught by using Group Investigation (GI) technique. Before she conducted pre-test and post-test, researcher developed the instrument. The several steps explain in table 3.2.

**Table 3.2 Instrument of developing test.**

### 1.1 Review Syllabus and material

The first step in developing the instrument is reviewing literature which consist of syllabus and instructional material. The purpose of reviewing literature is to get data on the materials used for pre-test and post-test, so that the instrument of test would test what should be tested, hence the instrument met the criteria of content validity.

In addition, she reviewed syllabus as well. This is done in order to know the materials and basic competence which should be mastered by the students of the

seventh grade of MTs AL Ma'arif Tulungagung. Moreover, the syllabus also told her some information, such time allotment, classroom activities, basic competence, material, source study and etc. The result of reviewing literature was used to write draft of test.

## 1.2 Drafting

The next steps is drafting. In process of drafting, researcher started this step by determining kinds of reading test that would be used and suitable with the students in seventh grade. Before writing instrument, she also asked her advisor to give suggestion about the test, type of the test, and content of the test. She required 15 questions which is 10 questions of multiple choices and 5 true or false.

## 1.3 Validity

After drafting the researcher should doing validity of the test. Validity is defined as the extent to which the instrument measures what is suppose to measure. to strengthen this instrument, she needs to test its validity including content validity. In design quantitative, validity is important point because the main component to collect data is test. If test do not have validity it's also researcher do not have valid data. To do validity, she going to met expert validity, to her advisor and English Teacher.

## 1.4 Expert Validity and try out

### 1.4.1 Expert Validity

In this step, the researcher met an expert of ELT mainly on reading learning to check the content, type of test, and level of difficulty of the draft of the research instrument the draft consist of 15 questions which is 10 questions of multiple

choices and 5 true or false. (it can be seen in appendix 2). The experts that she met are experienced English Lecturer and English Teacher of MTs AL Ma'arif Tulungagung.

#### 1.4.2 Instrument Revision

There are some feedback that given after researcher met the expert of validity. This feedback is used to revise the draft of the instrument. First the instruction in the question should clearly. Because the instruction in the question is very important for students. Students will be know the way to answer the question by read an instruction firstly. The second the researcher should correct the grammar in the test as well. The last, the questions in the test should systematically according the level of difficulty and the material about.

#### 1.5 Try out

Beside the researcher checked the validity of the test. The researcher also conducted a try-out. The purpose of try out is to know the validity and reliability of instrument. The researcher tryout of the test to the same students of another class, that were students of VII B class of MTs AL Ma'arif Tulungagung. That consist of five students.

#### 1.6 Final Drafting

The last step is final drafting, it is rewrite instrument after researcher checked the validity and reliability of the test. The final drafting is used by the researcher as the instrument to conduct pre-test and post-test.



## E. Validity and reliability testing.

### 1. Validity

The good instrument should be valid. Validity refers to the precise measurements of the test. Validity is defined as the extent to which the instrument measures what is suppose to measure. In this research, content and construct validity are used. Content validity is the content about what we say test about. The relevancy of the objective of the test and the content of the test items are show the content validity of the test.

In this study, the test had content validity because this test based on the course objectives in the syllabus of second years of MTs AL Ma'arif Tulungagung. The content validity in this research can be showed as follow:

**Table 3.1. Content Validity**

No.	Competence Indicator	Test item
1.	Students are able to determine the information of the text (literal comprehension).	3,5,6,7,8,9,10,12,14,15
2.	Students are able to determine the main idea.	4
3.	Students are able to determine the implicit meaning of the text / purpose of the text (inferential comprehension).	1,2,11,13
4.	Total	15

Meanwhile, construct validity is test that measure the ability want to know. According to Allison (1999:4) construct validity is often used as a super ordinate expression, as the overall aim is to justify a test in terms of the construct or model of the abilities that is seeks to measure. Researcher should be careful choose the kinds of reading test and also the content should representative with the content would be measure by the researcher.

Besides the researcher checked the validity of the test used content validity, the researcher also conducted a try-out of the test to the same students of another class, that were students of VII B class of MTs AL Ma'arif Tulungagung to know the validity and reliability of the test. The test consisted of 10 multiple choice and 5 True / False items of try out test were same with the items of pre-test and post-test. The data of students' score after finishing of try out can be seen in table.

**Table 3.2 The Students' score in Try - Out**

No.	Name	Tyr – Out
1.	A	70
2.	B	65
3.	C	55
4.	D	75
5.	E	80

From the presentation of the result of try-out, the students' score could be categorized into the following table of criteria students' score.

**Table 3.3 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

Based on the table 3.3, it was found that A, B, and D got score 56 – 75 showed that their score was categorized as average. C got score 55 showed that

his score was categorized as poor. And E got score 80 means that his score was categorized as good. After finishing try-out, then the researcher analyzes the test based students' score to know the instruction of the test clear or not and level of the test suitable or not.

## **2. Reliability**

The way to know a good test is by reliability. Ary (2002:250) states that reliability is concerned with the effect of such random errors of measurement on the consistency of the scores. Reliability is the consistency of the measurement, or degree to which an instrument measures the same way each time it is used under the same condition with the same subjects.

To measure that reliability of test item, the researcher firstly gained Try-out. It is to know whether the instrument suitable or not. In this research, the researcher used SPSS 16.0 for windows to know the reliability of test instruments. According to Riduwan (2014: 118), the criteria of reliability instrument can be divided into 5 classes as follows:

- a. If the *alpha cronbach* score 0.00-0.20: less reliable
- b. If the *alpha cronbach* score 0.211-0.40: rather reliable
- c. If the *alpha cronbach* score 0.41-0.60: enough reliable
- d. If the *alpha cronbach* score 0.61-0.80: reliable
- e. If the *alpha cronbach* score 0.81-1.00: very reliable

From the answer of students' response in try-out test the researcher then analyze using reliability test based on Cronbach's Alpha. The result of reliability test was:

**Table 3.4 Reliability Testing for Multiple Choices**

**Reliability Statistics**

Cronbach's Alpha	N of Items
.633	10

**Table 3.5 Reliability Testing for True / False**

**Reliability Statistics**

Cronbach's Alpha	N of Items
.802	5

From the computation in SPSS, the reliability value of multiple choice test was 0.633. Based on the Cronbach scale in table 3.4 it lies on the Cronbach value between 0.61-0.80 so it can be said that the instrument was reliable. And the reliability value of true / false test was 0.802 based on the Cronbach scale in table 3.5. It lies on the Cronbach value between 0.61-0.80 so, it can be said that the instrument was reliable.

#### **F. Data analysis.**

The researcher used a quantitative analysis technique using statistical method. The researcher is used the application SPSS Statistics 16 for windows to analyzed Paired-Sample T-test. There are some steps in analyzing data in SPSS 16. Firstly, the researcher input the data in SPSS Statistics to know the frequency of pretest and post test score. After that, by using this application the researcher know the mean, median, mode and standard deviation. Then, from the compare of data the researcher know the pair sample statistics and finally the researcher find pair sample correlation from two

kinds of test. The researcher can analysis about the result of significant two tails and degree of freedom.

After the researcher knows the result of significant two tails from SPSS Statistics, the researcher can give the conclusion about the effectiveness or not about the treatment Group Investigation (GI) technique in reading descriptive text. This technique is used to find the significant different on the students reading descriptive text using Group Investigation (GI) technique. If the significant two tails is smaller than the level of significant (0,05), the alternative hypothesis ( $H_a$ ) is accepted. It means that, there is different score of students' achievement before and after taught using Group Investigation (GI) technique. On the other hand, if the significant two tails is bigger than the level of significant (0,05) the null hypothesis is rejected. Indicating that, there is no different score of students' achievement before and after taught using Group Investigation (GI) technique.