

## CHAPTER III

### RESEARCH METOD

In this chapter, there are nine parts that is discussed in this research. They are research design, population and sample, sampling technique, variable of the research, instrument of the research, trying out the instrument, normality and homogeneity testing, the method of data collection, and the method of data analysis.

#### 3.1. Research Design

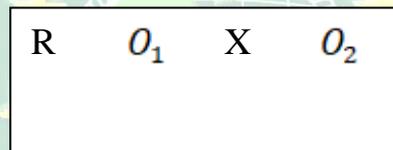
In this research, the researcher used quantitative research. According to Syahrul and Salim, a quantitative research is an empirical research that consist of statistical data (Syahrul & Salim, 2007: 113). It meant that the researcher collected and analyzed the data statistically.

The researcher used experimental research to observe the problem. Mubarok (2015:88) states that experimental research is a research method that is used to find a specific treatment effect against to the other in uncontrolled condition. It means that experimental research was a research that needs a treatment to find out the significance difference of the research. Sugiyono (2016:107) states that experimental research design is a research design that is used to find out the significance influence of the treatment in group.

Campbell and Stanley, in Arikunto (2010: 123), state that the kind of the research is divided based on the significance of experiments such as pre experimental design and true experimental design. Pre experimental design consists of one shot case study, one group pre-test post-test, and static group

comparison and true experimental design consist of control group pretest-posttest, randomize to subject, matched group design, randomize pretest and posttest design, randomize subject with pretest group control posttest group experimental.

In this research, the researcher used one group pretest-posttest design of pre experimental. In this design, the pre-test and post-test was given to take the score of the student's improvement before and after being taught by using blended learning through Google Classroom application . Then both of the score was computed by using T-Test to find out if there was significant differences in teaching reading comprehension using blended learning through Google Classroom application. The design of pre experimental research for one-group pretest-posttest design is presented below (Sugiyono, 2016:111):



Where:

R : Randomly

X : Treatment

$O_1$  : Pre-test

$O_2$  : Post test

### 3.2. Population and Sample

#### 1. Population

Population is generalization area consisting of objects or subjects that have certain quality and characteristics which is decided by the researcher (Sugiyono, 2016:117). The population was chosen in this

research by the researcher, they were all of the students in the eleventh grade of MA Darul Ulum Purwogondo in the academic year of 2019/2020. The total number of the population in this research are 129 students from four classes.

Table 3. 1 Population of the Research

Class	Total of the Students (X)
X1 MPA	36
XI SI 1	33
XI SI 2	32
XI BB	28
$\Sigma X$	129

## 2. Sample

Sample is a part of representative populations which is investigated (Arikunto, 2006: 131). According to Arikunto (2002: 112), a researcher may take 10% - 15%, or 20% - 25%, or more of the population used as the sample. The sample based on scientifically selected subject of that population. Considering about the big number of the population, the researcher used the random sampling technique to choose the sample. Hadi (2004: 336) states that simple random sampling technique is the technique of choosing the sample, so that it can be the representative of the whole population and give the accurate statistical result. By using this technique, all the members of the population had the same chance to be the sample. In this research, the researcher chose XI MIPA with 36 students as the sample.

### **3.3. Sampling Technique**

Sampling is the way or technique of taking sample from the population. The sample of this research was taken by simple random sampling. Hadi (2004: 336) states that simple random sampling technique is the technique of choosing the sample, so that it can be the representative of the whole population and give the accurate statistical result.

In this research, the researcher chose one class as the sample from four classes using lottery and from that technique, the researcher took XI MIPA as the sample. It meant that XI MIPA was taught using blended learning through Google Classroom application.

### **3.4. Variable of the Research**

In this research, there are two variables. They are independent variable and dependent variable. Independent variable is a variable that was obtained and can be diversified into free variable. Different with independent variable, dependent variable is one effect of independent variable (Sugiyono, 2016:61). The independent variable of this research is the use of blended learning through Google Classroom and the dependent variable is reading comprehension.

### **3.5. Instrument**

An instrument used to measure natural phenomena as well social observed (Sugiyono, 2015: 102). Instrument of the research is a tool that is used by researcher to collect the data. In this research to get an accurate

the data, the researcher used instrument of test. The test that was used in this research was multiple choices. The test consisted of 15 items.

The instrument test is used to know the students' reading comprehension. In this research, the test was given in pre-test and post-test. It is given to measure how far students' understanding in reading comprehension before and after using blended learning though Google Classroom application.

### 3.6. Trying Out the Instrument

#### 1. Validity

Sugiyono, (2018: 193) states that valid means the instrument can be used to measure what should be measured. Validity test is used to measure whether the obtained data of instrument is valid or not. Trying out the instrument of validity in this research, the researcher used a product-moment correlation to identify item validity. The formula of the validity test is as follows:

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$$

Note:

$r_{xy}$  : The validity of the item test

$N$  : The total of the students

$X$  : The total of the students who answer correctly

$Y$  : The students' score

## 2. Reliability

Sugiyono, (2018: 193) states that the valid and reliable are absolute requirement to get research result valid and reliable. To determine the reliability of test, the researcher used formula of K-R 21 (Kuder Richardson). The formula of reliability test is as follows:

$$r_1 = \frac{k}{(k-1)} \left( 1 - \frac{M(k-M)}{kV_1} \right)$$

Note:

$r_1$  : The reliability instrument

$k$  : The total item of questions

$M$  : The mean of total scores

$V_1$  : The total variants

### 3.7. Normality and Homogeneity Testing

#### 1. Normality

Normality test is used to test whether a variable is normal distribution or not. Sujianto (2009:77) states that normality distribution test is a test to measure whether our data has a normal distribution. Normal meant if the data have a normal distribution. The main reason of conducting normality testing is to know whether the population or data that involved in the research is in normal distribution. To test the normality, the researcher used *Shapiro Wilk* with the provision that if *Asymp. Sig. > 0, 05*, the data is normally distribution (Asmarani, 2008:234).

## 2. Homogeneity

Homogeneity testing is intended to make sure that the collecting data in analysis is truly taken from a population which is different each other. Homogeneity is used must be appropriate with the composition and its distribution (Sujianto, 2009:112). To know the homogeneity, the researcher used *One Way Anova*.

### 3.8. Technique of Collecting the Data

Arikunto (2013: 265) states that the method of data collection is a method that is used by researcher in collecting data of research. In collecting data, the researcher gave pre-test to the students before giving treatment and post-test to the students after giving treatment. There are as follows:

#### 1. Pre-test

Pre-test was given to the students before conducting treatments. It was given to the experimental class. The function of pre- test is to get the information about the student's ability in reading comprehension before the treatment.

#### 2. Treatment

Treatment was given to the students in experimental class during learning process. Experimental group is a group that the researcher gave the treatment by using blended learning through Google Classroom application. The treatment was given to the students after giving the pre-test. Treatment means that the researcher applied blended learning through

Google Classroom application in a learning process. In this research, the treatment was done in three meetings including the post-test.

Table 3. 2 Treatment Procedure in Experimental Group

<p><b>First Treatment</b></p>	<ul style="list-style-type: none"> <li>- The researcher introduced and explained about the Google Classroom application to the students.</li> <li>- The researcher asked to the students to join with Google Classroom application.</li> <li>- The researcher asked to the students to download the material that had been given in next meeting in Google Classroom application.</li> </ul>
<p><b>Second Treatment</b></p>	<ul style="list-style-type: none"> <li>- The researcher explained the material about narrative text to the students</li> <li>- The researcher gave one example of narrative text.</li> <li>- The researcher read the text and the student listened to the researcher.</li> <li>- The researcher asked to the students to download one of the texts in Google Classroom application.</li> <li>- The researcher asked to some students to read the text by taking turn.</li> </ul>
	<ul style="list-style-type: none"> <li>- The researcher reviewed the material in the</li> </ul>

<b>Third Treatment</b>	<p>previous meeting.</p> <ul style="list-style-type: none"> <li>- The researcher divided the students become five group discussions and asked every group to download the text about narrative text in Google Classroom application.</li> <li>- The researcher asked to the students to read the text by using video based on their group discussion and the students uploaded the material in Google Classroom application.</li> </ul>
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### 3. Post-test

Post-test was given by the researcher to the students after having a class. Post-test aims to check the students' improvement related to the topic that had been learned in the learning process. It means that the researcher gave the evaluation from using blended learning through Google Classroom application by giving post-test to the students.

#### 3.9. Technique of Analysing the Data

Data analysis is the process of systematically searching and arranging the interview transcripts, field notes, and other materials that is accumulated to increase people understanding of them and to enable people to present what they have discovered to others (Sugiyono, 2007: 334). The purpose of data analysis is to know the differences of student's improvement of reading comprehension using blended learning through

Google Classroom application and without using blended learning through Google Classroom application and the significant of students' comprehension in understanding the reading. In this research, the researcher used quantitative to analyze the data. In analyzing the data of post-test, the researcher used the statistical formulation of t-test formula using SPSS 24. T-test is used to find out whether there was significance difference the score of the students' reading comprehension by using blended learning through Google Classroom application.

The data were obtained through pre-test and post-test. The researcher used the procedures as follows:

1. Scoring the students' answer by using the following formula

$$\text{Score} = \frac{\text{students' correct answer}}{\text{total number of item}} \times 100$$

(Depdikbud in Sukirman, 2010:36)

2. Classifying the score answer by using scoring rubric

Table 3. 3 Scoring Rubric

	Scale	Classification
A	90-100	Excellent
B	80-89	Good
C	70-79	Adequate
D	60-69	Inadequate/unsatisfactory
E	Below 60	Failing/unacceptable

(Brown, 2004)

To determine the students' score classification, the researcher used percentage scale as follow:

Table 3. 4 Percentage Scale

	Percentage Scale	Classification
A	75% - 100 %	Good Classification
B	50% - 75 %	Adequate Classification
C	25% - 50 %	Inadequate Classification
D	5% - 25 %	Unacceptable Classification

3. Calculating the mean score of the students' answer by using the following formula:

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

Where:

X : Mean score

$\sum X$  : The sum of all Score

N : The total number of subject

(Gay, 2006:230)

4. Finding out the standard deviation by applying this formula

$$S = \sqrt{\frac{S}{N-1}}, \text{ where } SS = \sum X^2 \cdot \frac{\sum X^2}{N1}$$

Where:

SD : Standard Deviation

SS : The sum of square

N : Total number of the Subject

$\sum X^2$  : The sum of all square, each score is squared and all the squares are added up

$\Sigma X^2$  : The square of the sum; all the scores are added up and the sum is square, total.

(Gay, 2006:321)

5. The formula had been used in finding out the difference between student's score in pre test- and post-test.

$$t_{count} = \frac{\bar{X}_{d1}}{\frac{S_{d1}}{\sqrt{n}}}$$

Where:

$t_{count}$  : Test of significance

$\bar{X}_{d1}$  : Mean score from the data

$S_{d1}$  : Standard Deviation from the data

$n$  : Number of students