

## **CHAPTER III**

### **RESEARH METHODOLOGY**

In this chapter, the researcher illustrated how this study is conducted with the subject of research designing. It consists of research design, population and sample, research variables, research instrument, technique of data collection and technique of analysis data.

#### **3.1 Research Design**

This research uses quantitative method which related to quasi experimental research. According to Ary (2010:26) experimental research is the study of the effect systematic independent variable(s) to another variable. Generally, quantitative research is linked with numerical research. According to Creswell, (2002:13) one of the quantitative characteristic is analyse the problems, compare the grups and relating the variables using statistical analysis. Both of the experimental research and quantitative are related each other, as Creswell (2002:294) stated that experimental design is an approach which conduct to quantitative.

This research is included in quasi experiments, one of the experimental design's part. Quasi experiment include assignment, but not random assignment of participants to groups. In this study, the researcher choose Yapita Senior High School as the sample. In this school, for tenth grade there are only two classes namely X.1 and X.2 and the researcher choose X.1 class as the control group and X.2 class as the experiment group. This case is caused that X.1 and X.2 students

have the same ability in English, it is proven by the result of homogeneity test that the researcher measure from score of pretest of both classes and the result is both of classes are homogen. So the researcher choose one class as a control group namely X.1 and X.2 as the experimental group.

The researcher uses pretest and posttest to two groups, namely experimental and control groups. Both of them gave the same pretest and will be given the same posttest also. The experimental group will be given a treatment after the pretest while the control group will not be given any treatment. The scores of the posttest from both groups are the result of this research. The design of this research can be seen on the table below.

Table 1

Randomized Subject, Pretest and Posttest, Experimental and Control Group.

Group	Pretest	Independent Variable	Posttest
X.2	Y1	X	Y2
X.1	Y1	-	Y2

Where:

X.2 : the experimental group that is taught grammar through writing diary

X.1 : the control group that is not taught grammar through writing diary

X : the treatment (writing diary)

Y1 : the pretest before the treatment

Y2 : the posttest after the treatment

### **3.2 Population and Sample**

Population is the people or the students whom will be the target of the research. According to Ary (2010:54) stated that population is those people about whom you wish to learn something. Whereas sample is a small group that will be observed. In this study the population is all of the tenth grade students of Yapita Senior High School that consist of X.1 class and X.2 class. And the sample of this study is all of the member of the population namely 32 students from two classes, where X.1 as the control class consists of 16 students and X.2 as the experimental group consists of 16 students.

### **3.3 Research Variables**

There are two variables in this research, those are Dependent and Independent variables.

#### **3.3.1 Independent Variable**

Independent variable is a variable that can stand alone without depends on another variable. Ary (2010:37) stated that when a variable precede to the dependent variable is called an independent variable. In this research the independent variable is the writing diary.

#### **3.3.2 Dependent Variable**

Dependent variable is a variable that can not stand alone without a media or method to do it. According to Ary (2010:266) a variable which the chages are observed by the researcher called dependent variable. In this research the dependent variable is the effectiveness.

### **3.4 Research Instruments**

In this research the researcher uses some of instruments to do the experimental research.

#### **3.4.1 Pre-test**

Pretest is a test that given to students before the experimental group get a treatment. The function of pretest is to measure how far the students' understand the teacher's explanation before. Beside that, pretest is also used to choose which one is the control group and experimental group based on the result. Creswell (2002:297) stated that a pretest uses to measure the participants' ability in experiment before they receive a treatment.

In this study the researcher give a pretest to both control and experimental group. The pretest instruction is the researcher as the teacher ask them to write their activities in two days.

#### **3.4.2 Post-test**

Posttest is a test that given to both control and experimental group after the experimental group receive the treatment. Creswell (2002:297) stated that a posttest uses to measure the participants' ability in experiment after they receive a treatment.

In this study the researcher as the teacher uses the same task in pretest and posttest namely ask the students to write their activities in two days.

#### **3.4.3 Validity**

According to Groundland (1998: 226 in Brown, 2004:22) a test is valid if it is appropriate, meaningful, and useful in term of the purpose

of the test. Brown (2007) stated that there are five kinds of validity; content validity, Criterion validity, Construct validity, Consequential validity, and Face validity. In this study, the researcher uses the content validity because it is related to evaluating achievement test. To get the content validity, the researcher matches with the curriculum 2013 (K-13).

4.4 Menyusun teks lisan dan tulis untuk menyatakan dan menanyakan tentang niat melakukan sesuatu, dengan memperhatikan fungsi sosial, struktur teks, dan unsur kebahasaan, yang benar dan sesuai konteks

4.6 Menyusun teks lisan dan tulis untuk menyatakan dan menanyakan tentang tindakan/kejadian yang dilakukan/terjadi di waktu lampau yang merujuk waktu terjadinya dengan yang merujuk pada kesudahannya, dengan memperhatikan fungsi sosial, struktur teks, dan unsur kebahasaan, yang benar dan sesuai konteks.

So that, the test item is considered valid because it matches with the basic competence of curriculum 2013 (K-13) for the tenth grade students of senior high school.

#### 3.4.4 Reliability

A good instrument is when it is valid and also reliable. So after matches the instruments with the curriculum to get content validity, it is important for the researcher to measure the reliability of the instrument. According to Bachman & Palmer (2005) reliability defines as a consistency of measurement although it is tested to another characteristic of situation. Finally, reliability is demonstrated not

only through predictability but also through commitment and dedication (Creswell, 2002:43).

The researcher choose the reliability of the rating by asking two observer namely the teacher as the rater 1 and the researcher as the rater 2 to give the score, so this reliabilty included in inter-rater reliabilty which uses two different observer to get the score. According to Heaton (1990: 162) a test that is categorized reliable if the scores are relatively stable among one rater to another. In this study, the rater 1 is the researcher as the teacher and the rater 2 is another researcher whom mastering english.

According to Bartz (1976:195) pearson product-moment correlation is common uses in measuring reliability. The formula is as follows:

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

$r_{XY}$  = correlations coeffesient

$\sum XY$  = total of result times score X and Y

$\sum X$  = total score X (total score from the researcher as the teacher as rater 1)

$\sum Y$  = total score Y (total score from another researcher whom mastering english as rater 2)

$\sum X^2$  = total quadrate score X

$\sum Y^2$  = total quadrate score Y

N = number of subjects

From that formula, the level of reliability is determined based on the criteria by Bartz (1976:205) as seen in the table below

Table 2

The level of reliability

Criteria	Description
$0.80 < r$	The reliability is very high
$0.60 \leq r \leq 0.80$	The reliability is strong
$0.40 \leq r \leq 0.60$	The reliability is moderate
$0.20 \leq r \leq 0.40$	The reliability is low
$r < 0.20$	The reliability is very low

The researcher count the data to get the reliability uses Ms. Excel. The counted result see at appendix 1.

### 3.4.5 Test of Homogeneity

Before the researcher give treatment to experimental class, it is important to know whether the students ability of both experimental and control class are equal or not. To measure that, the researcher uses Levene test of homogeneity of variances to count the pretest score of both classes. The hypothesis are :

$H_0 : \sigma_1^2 = \sigma_2^2$  there is no difference between experimental and control class

$H_1 : \sigma_i^2 \neq \sigma_j^2$  there is difference between experimental and control class

$H_0$  is rejected if  $F_{\text{count}} > F_{\text{table}}$  atau  $P\text{value} < \alpha$  (5%)

Table 3

Test of Homogeneity of Variances

**Test of Homogeneity of Variances**

VAR00001

<b>Levene</b> <b>Statistic</b>	df1	df2	Sig.
.462	1	30	.502

Based on the table above, the sig. or Pvalue  $> \alpha$  (5%) namely  $0.502 > 0.05$

So,  $H_0$  is recived because Pvalue  $> \alpha$  (5%),  $\sigma_1^2 = \sigma_2^2$  there is no difference between experimental and control class.

**3.5 Research Procedure**

The procedure of this research as be seen below:

Time : April, 18<sup>th</sup> 2015 – May, 15<sup>th</sup> 2015

Location : at Yapita Senior High School Surabaya.

Table 4

Research procedure

<b>Pre Research</b>	
<b>Time</b>	<b>Schedule</b>
April, 18 <sup>th</sup> 2015	Send permission letter to Yapita Senior High School Surabaya
April, 19 <sup>st</sup> -23 <sup>th</sup> 2015	Prepare lesson plan, teaching material and writing assessment rubric



<b>Research Process</b>	
<b>Experimental class</b>	<b>Control class</b>
April,25 <sup>th</sup> – 26 <sup>th</sup> 2015 (pretest)	April,25 <sup>th</sup> – 26 <sup>th</sup> 2015 (pretest)
<ul style="list-style-type: none"> <li>Review four tenses ( present, past, present continuous and future tense).</li> </ul>	<ul style="list-style-type: none"> <li>Review four tenses ( present, past, present continuous and future tense).</li> </ul>
<ul style="list-style-type: none"> <li>The researcher as the teacher ask students to write their own activities in two days on April,25<sup>th</sup> – 26<sup>th</sup> 2015.</li> </ul>	<ul style="list-style-type: none"> <li>The researcher as the teacher ask students to write their own activities in two days on April,25<sup>th</sup> – 26<sup>th</sup> 2015.</li> </ul>
April,27 <sup>th</sup> – May, 02 <sup>nd</sup> 2015 (treatment)	April,27 <sup>th</sup> –May,02 <sup>nd</sup> 2015(non treatment)
<ul style="list-style-type: none"> <li>The researcher ask the students to write their own activities during six days on April, 27<sup>th</sup> – May, 02<sup>nd</sup> 2015 using four tenses (past, present, present continuous and future tense)</li> </ul>	<ul style="list-style-type: none"> <li>The researcher ask the students to write several sentences using four tenses (past, present, present continuous and future tense), each tense consist of three sentences. .</li> </ul>
May,14 <sup>th</sup> –15 <sup>th</sup> 2015 (posttest)	May,14 <sup>th</sup> –15 <sup>th</sup> 2015 (posttest)
The researcher as the teacher ask students to write their own activities in two days on May,14 <sup>th</sup> –15 <sup>th</sup> 2015.	The researcher as the teacher ask students to write their own activities in two days on May,14 <sup>th</sup> –15 <sup>th</sup> 2015.
<b>Research Closing</b>	
May, 21 <sup>th</sup> 2015	Get the letter of research conduct from

### 3.6 Data Collection Technique

To know the treatment of Writing Diary in six days is effective in teaching grammar or not, the researcher conducted some tests. The techniques of the test are :

1. Conducting a pretest to both experimental and control group. The pretest instruction is “Write your own activities in two days on Saturday 25<sup>th</sup> and Sunday 26<sup>th</sup> of April 2015”
2. After conducting the pretest, the researcher ask all of students of experimental group to write their own diary during six days on 27<sup>th</sup> April – 02<sup>nd</sup> May 2015. The diary was about their own activities that should written by using the right grammar which only focused on four grammar namely present, past, present continuous and future tense. The students conducted this activity at home since 27<sup>th</sup> April and submitted their work on 03<sup>th</sup> May 2015. While the control group did not give any treatment.
3. Then, on Thursday 14<sup>th</sup> May – Friday 15<sup>th</sup> May 2015 the researcher conducted the posttest to both experimental and control group. The instruction is “Write your own activities in two days on Thursday 14<sup>th</sup> May – Friday 15<sup>th</sup> May 2015”
4. After collecting all of the data, the researcher corrected the result of pretest and posttest of both experimental and control group uses the writing paragraph rubric. According to Oshima(2006:315) There are five

compositions of writing paragraph to be analysed to find out the score of each students. The formula is:

Format	: 5 points
Mechanics	: 5 points
Content	: 20 points
Organization	: 35 points
Grammar and Sentence structure	: <u>35 points</u> +
Grand Total	:100 points

(see appendix 3)

### **3.7 Data Analysis Technique**

After corrected all of the data, the researcher analyse and discuss the result of the pretest and posttest uses SPSS 16.0 software namely Test of normality distribution to know whether the data is normality distribution or not, uses T-test to count the posttest score and Eta square to measure how effective this method and to get the valid result.

To know whether writing diary is effective in teaching grammar or not, the researcher count the result of the pretest and posttest uses independent T-test. After count the result, the researcher will knows the Pvalue (sig 2 tailed) that shows the significant different. If Pvalue (sig 2-tailed) is equal or less than 0.05 it means there is a significant different between experimental and control group so the researcher recieves  $H_1$  and rejects  $H_0$ . But if Pvalue-(sig 2-tailed) is above 0.05 it means writing diary is not effective in teaching grammar, so the researcher decides to rejects  $H_1$  and recievesp  $H_0$ .