

CHAPTER III

RESEARCH METHODOLOGY

A. Research Methodology

1. Research Design

The research method in this research is a pre-experimental method. According to Ary et al (2010:302) pre-experimental design do not have random assignment of subjects to groups or others strategies to control extraneous variable. According to Cohen et al (2007:282) there are three types of pre-experimental they are (1) the one group pretest-posttest design, (2) the one group post-test only design, and (3) the post-test only non-equivalent design.

In this research the researcher will use one-group pre-test and post-test design. According to Ary et al (2010:303-304) the one-group design usually involves three steps: (1) administering a pretest measuring the dependent variable; (2) applying the experimental treatment X to the subjects; and (3) administering a posttest again measuring the dependent variable.

The table of one-group pre-test and post-test as follows:

Table 3.1
One-Group Pretest-Posttest Design

Pretest	Independent	Posttest
Y_1	X	Y_2

Adopted from Ary et al (2010:304)

Where:

Y_1 : students' score before given the treatment

X : treatment (independent variable)

Y_2 : students' score after given the treatment

The researcher applied three steps the one-group pretest-posttest design.

B. Population and Sample

1. Population

To get the data the researcher should pull the population. According to Ary et al (2010:148) a population is defined as all members of any well-defined class of people, events, or objects. Larson-Hall (2010:44) the population is the group of people (or collection of texts or test scores) in which you are interested. It can be conclude if the population is the huge group of people which provide anything that value. The population in this research is the entire students of SMK PGRI Pontianak in the eleventh grade in the academic year of 2015/2016.

The total of eleventh grade of SMK PGRI Pontianak in the academic year of 2015/2016 as follows:

Table 3.2
The total of eleventh grade of SMK PGRI

No	Majors	Total
1.	Audio Visual Technique	19
2.	Motorcycle Technique	25
3.	Vehicle Technique	37

So, total of the population here are 81 students.

2. Sample and Technique Sampling

Sample is the small group of the population which represents the population. According to Ary et al (2010:148) a sample is a portion of the population. In this research the researcher will take Technique Audio Visual class as the sample from the population by using cluster random sampling. According to Fraenkle and Wallen (2009:95) the selection of groups, or clusters, of subject rather than individuals is known as cluster random sampling. Mcmillan (1996:90) cluster sampling involves the random selection of naturally occurring groups would be universities, schools, school divisions, classrooms, city blocks, and house-holds. In this research there is one class chosen by using cluster random sampling that treated as the experiment class.

The steps in applying this technique, for the first step, the researcher made the paper-roll where in each paper-roll written the name of class in the eleventh grade. The second step is the researcher put all the papers roll in the glass and shake it. After that, the researcher took one of paper-roll and opened it. The name of the class arose and it was the sample in this research.

C. Technique and Tool of Collecting Data

1. Technique of Data Collecting

To collect the data, the researcher applied measurement technique to measure the effect of using personal journal in teaching writing recount text. Indeed, the researcher used test. According to Heaton (1998:5) tests may be constructed primarily as device to reinforce learning and to motivate the

student or primarily as a means of assessing the student's performance in the language. The aspects of test are content, organization, vocabulary, language use, and mechanics.

2. Tool of Data Collecting

a. Test

The tool of data collection in this research is written test. Type of the test is essay. So, the students asked to write down their past activities using personal journal as their medium. According to Ary et al (2010:201) a test is a set of stimuli presented to an individual in order to elicit responses on the basis of which numerical score can be assigned.

1) Readability Test

Beside the test the researcher gave the students readability test as a tool of data collection in this research. Readability test is to measure the students' ability in read the instruction of writing test. Locyer et al (2008:173) state that readability is the level of easy or difficulty with which text material can be understood by a particular reader who is reading that text for a specific purpose.

Readability test was given before the treatment.

To calculate the results of readability test the formula as follows:

$$X \% = \frac{n}{N} X 100\%$$

Ali (1985:184) in Gunawan (2014)

Where:

X : The result of percentage

n : The total number of students who said yes/no

N : The total number of students in observation

Table 3.3
The criterion of readability test

00,00% - 33,33%	Low
33,34% - 66,67%	Middle
66,68% - 100,00%	High

D. Technique of Data Analysis

The researcher conducted the research with quantitative technique to analyze the data. The formula to find out the individual score in writing recount text and the use of DJW by ESL Composition Profile (Hughey et al, 1983:140).

1. The students' individual score, the function is to find out the mean score. The maximum score of individual scores are 100 and the minimum scores are 35. The formula as follows:

Content	
Organization	
Vocabulary	
Language Use	
<u>Mechanics</u>	+
Students' individual score	

Where:

Content	means content of the text should indicate the title.
Organization	means the arrangement of supporting sentences are logical or not and the transition signals should logical and coherent.
Vocabulary	means the word form are appropriate or not and word order are in correct are not.
Language	means the using of complex construction in the paragraph in correct or not.
Mechanics	means the punctuation, capitalization, and spelling are correct or not.

2. The students' mean score of pre-test and post-test

The mean score is the sum of the individual score, each element and score. Its function is to find out the standard deviation.

The formula as follows:

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

Taken from Ary et al (2010:108)

Where:

\bar{X} : Students' mean score

$\sum X$: The sum of individual score

N : Total number of students

3. Standard Deviation

Standard deviation is statistic's value which using to determine the spread of the data in sample. According to Ary et al (2010:650) standard deviation is a measure of the extent to which individual scores deviate from the mean of the distribution; the square root of the variance; a measure of the dispersion used with interval data. Its function is to find out t-test score.

The formula of standard deviation as follows:

$$SD = \sqrt{\frac{\sum d^2}{N - 1}}$$

Taken from Cohen et al (2007:512)

Where:

d^2 : The deviation of the score from the mean (average), squared;

Σ : The total value of;

N : The number of subject;

4. Normality Test

To find out the normality of the data distribution the researcher did normality test for both pre-test and post-test data. The formula of normality data, the researcher used one sample Kolmogorov-Smirnov Test by SPSS (Statistical Product and Service Solution) version 22. The data is consider normal if the score of probability of normality test by Kolmogorov-Smirnov is higher than 0,05 (p value $>$ 0,05). Yet, if the score of probability of normality test by Kolmogorov-Smirnov is low than 0,05 (p value $<$ 0,05), its mean the data is not normal.

5. The test the effectiveness of students' pre-test & post-test score

To test the hypothesis and also answer the research question number one, the researcher used t-test. The requirement to use t-test formula in statistic parametric is the data should normal. According to Singh (2006:237) t-test is used to determine the statistical significance.

The t-test formula as follows:

$$t = \frac{\bar{D}}{\sqrt{\frac{\sum D^2 - \frac{(\sum D)^2}{n}}{n - (n - 1)}}$$

Ary et al (2010:177)

Where:

t : The students' significant score

\bar{D} : The deviation score of pre-test and post-test

$\sum D$: The sum of deviation score of pre-test and post-test

$\sum D^2$: The sum of squared deviation score of pre-test and post-test

n : The total number of students who took the test

6. Effect Size

The effect size is to measure of the effectiveness of the treatment.

According to Creswell (2012:188) effect size is a means for identifying the practical strength of the conclusions about group differences or about the relationship among variables in a quantitative study.

The formula as follows:

$$ES = \frac{\text{Mean of posttest} - \text{Mean of pretest}}{\text{Standard deviation}}$$

Taken from Fraenkle and Wallen (2009:244)

To determine whether the effect size is strong or weak, it categorized in the following:

Table 3.4
Effect size categories

Effect size	Qualification
0 – 0.20	Weak effect
0.21 – 0.50	Modest effect
0.51 – 1.00	Moderate Effect
> 1.00	Strong Effect

Taken from Coe (2000) in Cohen (2007:521)

E. Procedure of Research

The procedure of this research involved three steps there are pre-test, treatment, and post-test.

1. Pre-test

The purpose of pre-test is to measure the students' writing before given the treatment. Pre-test was given at May 17th to 18 students.

2. Treatment

In this stage, the researcher applied DJW in teaching writing recount text as many as 3 times. For the first treatment was given at May 19th, and for the second treatment was given at May 24th, and for the last treatment was given at May 26th. The treatment class was XI TAV class.

3. Post-test

The purpose of post-test is to measure the effectiveness of medium in teaching writing recount text after the treatment was given. Post-test was given at May 31st.