

CHAPTER III

RESEARCH METHODOLOGY

This chapter will discuss about the research method. Research method is the way how the writer gets the result of the study. Here, the writer arranges this chapter into the research design, research method, population and sample, the instrument of the research, data collection, and data analysis.

A. Research Design

According to Tavakoli (2012) a research design is the arrangement of condition for collection and analysis of data in a manner that aims to combine relevance to the research purpose. In fact, the research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement, and analysis of data. As such, the design includes an outline of what the researcher will do from the formulation of the research questions and hypotheses to reporting the research findings. Research design are the structure of research. It is the foundation of the study. Research design consists of observations, measures, treatments, programs, groups, assignment to groups, and time.

The writer used quasi-experimental design for this research. According to (Kaswan & Suprijadi, 2016:28) quasi-experimental design, or sometimes called naturally occurring group design, are similar to the true experimental design except that the writer makes comparisons between the means of the scores of the two or

more groups that occur naturally.” The writer used two classes, one as the experimental class and one as the control class. The experimental class was taught writing using Roundtable Technique, and the control class was taught writing without using Roundtable Technique but using direct instruction.

According to (Kaswan & Suprijadi, 2016:29), the pretest posttest control design differs from the posttest-only control group design solely in the use of a pretest. Two groups of subjects are used, with both groups being measured or observed twice. The first measurement serves as the pretest, the second as the posttest. Random assignment is used to form the groups. The measurement or observations are collected at the same time for both groups. A diagram of this design is as follows.”

The Randomized Pretest-Posttest

Control Group Design

Treatment group	<u>R</u>	<u>O</u>	<u>X₁</u>	<u>O</u>
Control group	R	O	X ₂	O

B. Research Method

Quantitative research method was chosen in this research. “Quantitative research is a deductive theory-based research process that focused primarily on testing theories and specific research hypotheses that consider finding differences and relationship using numeric data and statistical methods to make specific conclusions about the phenomena.” (Kaswan & Suprijadi: 2016:11).

The research took place in SMK Bina Prestasi Bangsa, a vocational high school in Bandung Barat. SMK Bina Prestasi Bangsa has eighteen classes, six classes for each grade. The research setting was at the class of X.1 of and X.2 of Teknik Komputer Jaringan which each has 22 students.

C. Population and Sample

1. Population

According to Johnson in (Kaswan & Suprijadi, 2016:15), population is the entire group of entities or persons to which the result of study is intended to apply. Based on the theories, it can be concluded that population is all subjects or individuals with certain characteristics that will be analyzed. The population of this research is the tenth grade students of SMK Bina Prestasi Bangsa in the academic year of 2017/2018. The total number is 121 students.

2. Sample

“The sample is the smaller group which is a portion of a population.” (Tavakoli, 2012:471). In this research, there are two classes as samples. One class is the control class and the second class is the experimental class, they are X TKJ 1 as experimental class and X TKJ 2 as the control class. Each class has 22 students, which means the total number is 44 students.

D. Instrument

As Tavakoli state in Kaswan & Suprijadi (2016:86), instrument is any device which is used to collect the data. The instrument of the research was a writing test. The test was given to the students as pretest and posttest. The pretest was given to the students before the treatment to get the data on the students' prior knowledge or the starting point of writing skill. Posttest was given to them after the treatment to get the data of the impact of using roundtable technique in increasing students' writing skill.

E. Data Collection Technique and Analysis

In this research, the writer used a test to measure how far the students' writing skill by providing students a written test of descriptive text. The data was taken from the result of the tests (pretest and posttest) that was given to the students before and after teaching the students. What to test in the result was text organization, content, grammar, vocabulary, and mechanic. The data was collected to be analyzed.

The data was collected through quantitative analysis. The steps were taken as follows:

1. The writer formulated the standard score for the total value of the students' writing by calculating the standard score given, as follow:

Table 3.1
The classification of students' increasing

No	Classification	Score
1.	Excellent	96-100
2.	Very good	86-95
3.	Good	76-85
4.	Fairly good	66-75
5.	Fairly	56-65
6.	Poor	36-55
7.	Very poor	0-35

2. To find out the students' means score, the writer applied the following formula:

$$\bar{x} = \frac{\sum x}{n}$$

$\bar{x}$ = Mean

$\sum x$ = The score of the students

n = The totals of the students

3. Normality Test

Normality test is test to analyze whether the population is normal distributed or not. To analyze it, the writer used SPSS version 23 with the hypothesis (Nugraha, 2014:270):

H_0 : If significance score < 0.05, the data is not normal distributed.

H_a: If significance score > 0.05, the data is normal distributed.

4. Homogeneity of Variances

Homogeneity of variance is the degree to which the variances of two or more samples are similar or homogeneous. In an analysis of variance, when samples are assumed to have been drawn from populations with equal variances, they are said to exhibit homogeneity of variances (Kaswan & Suprijadi, 2016:116).

5. Finding out the significant differences between the pretest and posttest by calculating the value of the test, the following formula is employed:

$$t = \frac{\bar{D}}{\sqrt{\frac{\sum D^2 - \frac{(\sum D)^2}{N}}{N(N-1)}}} \quad (\text{Cowl, 1996:179})$$

$\bar{D}$ = The mean difference between the two sets of scores

Σ = Summation (Sum Up)

D = The difference between the scores of one person (or matched pair)

D^2 = The squared difference between the score of one person (or matched pair)

$\sum D^2$ = Square each difference and sum the squares

$(\sum D)^2$ = Sum the difference and square the sum

N = The number of differences

These are the criteria of hypothesis:

If the Significance Score < 0.05 H_0 is rejected.

If the Significance Score ≥ 0.05 H_0 is accepted.