

CHAPTER III

RESEARCH METHOD

In this chapter, the researcher presented the research design, population, sample and sampling, data collecting method, validity and reliability testing, normality and homogeneity testing, research instruments and data analysis.

A. Research Design

The research is conducted in a quantitative research method with quasi experimental design. The researcher use quasi-experimental study because the researcher use two classes in MA Darul Hikmah Tawang Sari. Quasi-experimental design uses pre-test and post-test to both experimental group and controlled group. The researcher involves two different classes; in the experimental group, the researcher use clustering technique in teaching writing of explanation text, and in the controlled group, the researcher do not use clustering technique in teaching writing of explanation text.

According to Fraenkel and Wallen (2009: 261) in experimental study, there is an effect of at least one independent variable on one or more dependent variables. The independent variable is also frequently referred to as the experimental or treatment. The dependent variable refers to the results or outcomes of the study. In this research, there were two variables as follows:

1. Independent Variable (X)

Sugiyono (2006: 61) defined independent variable is a variable that influences or those to be cause of change to the dependent variable. The independent variable in this research is clustering technique.

2. Dependent Variable (Y)

Sugiyono (2006: 61) defines dependent variable as a variable that was affected or that be the result because of the existence of the independent variable. The dependent variable of this research is ability.

B. Population and Sample

1. Population

According to Nurhayati (2018), population is the object / subject that have some qualities and characteristics that are chosen to be learned and to be concluded by the researcher. In this study, the researcher took the population that is all of eighth grade which consist of two classes IPA and IPS class, the groups to which the writer would like the results of the study to be generalized. The population of this research was the eighth grade of MA Darul Hikmah Tawang Sari. The total numbers are 91 students.

2. Sample

A sample is a subgroup of the target population that the researcher plans to study for generalizing about the target population, John W. Creswell, (2008: 152). Sample of this study took from the IPA that

consists of 26 students and IPS class consists of 25 students of the eleventh grade of MA Darul Hikmah Tawang Sari.

C. Research Instruments

The research instruments used here is test. It was used to investigate the students' achievements after being taught explanation text using clustering technique. The steps to arrange the mini test are as follows:

- a. Limit the tested material. Here, the material was limited in explanation text.
- b. Determine the term to do the test. The researcher held pre-test and post-test to see whether there was effectiveness on the students' writing or not.

To know the result of the tests, the researcher used scoring rubric. The aspects of scoring rubric are content, organization, vocabulary, grammar and mechanics that has been matched with writing explanation text. The scoring rubric can be seen in the last of appendix 3.

D. Validity and Reliability Testing

Validity and reliability are required as the measurement of the test. To know the validity and reliability of the test, the researcher match the instrument with the objective of the subject which can be seen from the syllabus of senior high school. After drafting the test, the researcher shows the test to expert validator to get feedback by considering with the validation guide. Then, the researcher revises the draft based on the feedback of the expert validator. Next, the researcher conduct the Try out to test the students of XI-IPA (A) as the sample to get feedback from students.

1. Validity

Heaton (1975: 159) defined the validity of a test as the extent to which it measures what it is supposed to measure and nothing else. To measure whether the test has a good validity, the researcher analyzed the test from content validity, constructs validity and face validity.

- a. *Construct validity* : Construct validity is capable of measuring certain specific characteristics in accordance with a theory of language behavior and learning, (Heaton, 1975: 161). It is the process of determining the extent to which test performance can be interpreted in terms of one or more constructs. In this study, the writer administered a writing test and the technique of scoring the students' writing is based on the five aspects of writing; they are content, organization, vocabulary, grammar, and mechanic.
- b. *Face validity* : If a test item looks right to other testers, teacher, moderators, and testees, it can be described as having at least face validity, (Heaton, 1975: 159). In this test, there were some aspects that are considered from this test to make a good test based on the face validity. They are:
 - The instruction must be clearly for the students, so the students are able to understand what they should do in that test.
 - In this test, the students of eleventh grade were instructed to write an explanation text. Thus, the theme which gave by the writer must be suitable with their level.

- The consideration of time allocation must be suitable so that the students are able to supposed, when they finished their task before the time was up.

2. Realibility

According to Burke (2000: 100), reliability refers to the consistency or stability of the scores obtained from a test. The test used in this study is the form of writing test. In scoring the writing test, it involves the subjectivity. The reliability of writing test in this research is measured by computing the mean score from each corrector or tester.

Actually, the ideal test should be both reliable and valid. In this study, the test is productive skill form, which is writing test. Then, writer did not find the reliability and the writer may have given high construct and face validity at the expense of reliability.

According to Triton as cited in Sujianto (2009: 97) the value of cronbach's alpha could be interpreted as follow:

Table 3.2 Cronbach's Alpha Interpretation Based on Triton

Cronbach's Alpha	Interpretation
0,00-0,20	Less reliable
0,21-0,40	Rather reliable
0,41-0,60	Quite reliable
0,61-0,80	Reliable
0,81-1.00	Very reliable

Table 3.3 Reliability Testing

		N	%
Cases	Valid	15	78.9
	Excluded ^a	4	21.1
	Total	19	100.0

Cronbach's Alpha	N of Items
.894	5

The result of calculation reliability test was 0.894. According to Triton, the value of Cronbach's Alpha was categorized into very reliable.

E. Normality and Homogeneity Testing

1. Normality Testing

Normality testing is used to determine whether a data set is well-modeled by normal distribution or not. A data can be normal if it has a normal distribution. Normality testing in this research is done to pre-test and post-test score in both experimental and control group. Normality testing will be analyzed by using statistical instrument (SPSS).

2. Homogeneity Testing

Homogeneity testing is intended to prove that sample taken from the population have the same variance and show no significant difference. This test will be analyzed by using statistical instrument (SPSS).

F. Data Collecting Method

1. Pre-test

The pre-test was given before the treatment to know the students' writing achievement. The pre-test was conducted to both of the groups, experimental, and controlled group, in order to know the students' ability on writing of explanation text before the treatment.

2. Post-test

The post-test was given after the researcher give the treatment. In this test, the researcher have to find out the effectiveness of using clustering technique in students' writing ability. The result of the post-test is compared with the score in pre-test. So, the researcher will know the effectiveness of clustering technique in students' writing ability.

Table 3.1 Two Sample Pretest-Posttest Design

Class	Pretest	Treatment	Posttest
<i>Experimental</i>	Y ₁	X	Y ₂
<i>Control</i>	Y ₁	–	Y ₂

- Y₁** : Pretest
X : Treatment
– : There is no treatment
Y₂ : Posttest

G. Data Analysis

The purpose of analysis data is to know the effectiveness of using clustering technique in students' writing explanation text ability. After the data of pre-test and post-test are collected, the score of the data will be analyzed by using SPSS especially using.

The quantitative data on this research is analysed by using statistical computation. The researcher analysed the data by using formula of t-test. T-test is used to examine the effect of independent variable partially through dependent variable, whether the influence is significant or not, Priyatno (2013, p.50) as cited in Nurhayati (2017:106). Using t-test, the test was done through tolerant errors (α) = 0,05. The researcher used t-test to know the significance difference between two students' writing ability who are taught by using Clustering Technique and those who are not.