

CHAPTER III

RESEARCH METHODOLOGY

A. Research Design

This chapter discusses the research design that was used in this study. Arikunto (2002) states that a researcher's research design is a plan or program that outlines the activities that will be carried out. So the researcher has an exact way to make plans and program that will be done in this study. A research method is define as the way in which purpose in this research is achieved. This research use quantitative since the information is in the form of numerical and statistical analysis. It include on the experimental research. Experimental research, according to Sugiyono (2006), is study that aims to determine the cause-effect relationship between variables in a controlled environment. An experiment is a scientific study in which the researcher manipulates one or more independent variables any other significant variables should be controlled, and observe the impact of the change on the variables (Ary et al, 2002).

As a result, the researcher used cluster random sampling to create an experimental and control group. Pre-test, therapy, and post-test are the stages outlined by the researcher. The purpose of the pre-test is to determine the students' true abilities, and the purpose of the post-test is to see how the students have progressed after being taught utilizing the Clustering technique.

B. Setting of The Research

1. Setting of Place

Study will be carried out at eleven grade students of SMAN 01 Sekampung which is located in Sekampung, East Lampung.

2. Setting of Time

Study will be carried out in the eleven grade of academic year 2019/2020.

C. Population and Sample

1. Population

Ary (2006) states that all members make up the population included a group of people, events, or things. Based on Sugiyono (2006) the term "population" refers not only to the quantity of the subject/object that will be learned, but also to the subject's or object's entire qualities. Then students in the

tenth grade senior high school sekampung in the academic year 2019 make up the population of this study.

In conclusion, the population is composed of the generalization and the total number of research subjects. The subjects of this study are students in grades XI IPS 3 and XI IPS 5 at Sekampung Senior High School in the academic year 2019.

Table 1.2 List of population:

No	Class	Number
1	XI IPS 1	33
2	XI IPS 2	29
3	XI IPS 3	28
4	XI IPS 4	30
5	XI IPS 5	29
	Total of Students	149

2. Sample

The sample is drawn from a population that has been regarded as representative (Sukardi, 2003). In addition, the tiny group seen by Ary et al (2006) is referred to as sampling. Sampling is also a method by which a researcher selects a group of people to represent the population as a sample. The cluster random approach is used to pick the research sample. It is a sample selection method in which all members of a population are naturally divided into units (Wiersma and Jurs (2009). Below are the steps done by the researcher to choose the experimental group and control group:

- a. On a piece of paper, write the number.
- b. The papers are rolled up and placed in the glass.
- c. The glass is shook till the paper begins to roll out.
- d. The experimental class will focus on the first roll of paper.
- g. The control class will be the topic of the research on the second roll of paper.

Finally, the researcher get the sample to this research. Students of XI IPS 3 as a experimental class and XI IPS 5 as a control class, each class there is 33 students for experimental and 29 students for control class.

D. Research Variables

A variable is a term used to describe variance within a group of things. Variables can be categorized in a variety of ways. When they are classed as independent variables or dependent variables, the most essential categorization is based on their use within the research under discussion (Ary et al, 2006).

- 1. Independent variable:** a variable that has no bearing on the other variables. Clustering Technique is the independent variable in this study.
- 2. Dependent variable:** This is the response or criterion variable that is thought to be influenced by the independent treatment conditions and other variables. The dependent variable in this study is pupils' ability to write descriptive literature.

E. Research Instrument

Any equipment used to collect data is referred to as a research instrument (Arikunto, 2010). Tests, particularly writing tests, are used as an experimental research instrument in this study. Furthermore, the Ary et al (2006) test is a collection of stimuli that are shown to a person in order to elicit reactions from which a numerical score can be ascribed. In this study, there are two types of tests: pre-test and post-test. The pre-test is used to assess students' writing abilities before they receive treatment, while the post-test is used to assess students' writing abilities after they have received treatment.

F. Validity and Reliability Testing

1. Validity

To gather information on student progress following the completion of the course being given instrument used a writing test which consisted of only one test item. The test information provided to students must be accurate. Siregar (2013) says the term "validity" refers to how well an instrument works measures students' abilities.

There are four key approaches to do it look for instrument face validity, content validity, construct validity, and criteria validity are all examples of validity

(Siregar, 2013). Content validity is a sort of validity that is based on a thorough examination of the language under certain test. If a test has content validity, then it is considered to be valid the content is a diverse range of language abilities, structure, and others. Which he is supposed to be associated with (Hughes, 2003).

Furthermore in this study the validity of quantitative data was tested using content validity by this researcher. To learn about the pupils' interests achievements when writing a descriptive essay the researchers used written tests especially essay tests. The researcher is guided by the syllabus when compiling tests to fit the English syllabus for high school in writing competence. This essay a test is used to assess a student's ability to the extent of their mastery in writing descriptive texts. This test is done on a post-test. Post-test was carried out in the control and experiment class the validity of writing ability was assessed in this study tests for assessment.

2. Reliability

Ary et al (2006) define reliability as a consistent level at which the instrument measures whatever should be measured. Thus, it can be said that the reliability of the test is reliable or can be proven correct. Jack R. Fraenkel and Norman E. Wallen, (2009) to put it another way, reliability relates to the consistency of the results obtained - how constant they are over time each individual from one administration of one instrument to another and from one set of items to another. Setiyadi (2006) also said that reliability is the consistency of a measuring instrument to measure the extent to which the instrument can measure the same subject at different times but shows the same results.

G. Data Collecting Technique

The method of data collection is a crucial part of any research investigation. It can be defined as a collection of strategies used by an organization to assess the correctness of data collected. The data for this study is gathered in three stages:

1. Pre-test

A preliminary examination provides a measure on some attribute or a trait that you look for in participants before they get a treatment in an experiment (Creswell, 2008). This test is conducted as the preliminary research to identify

the students' real competence and problems in writing. The researcher gives the pupils a pre-test at the first meeting. The researcher conducted a pre-test give essay questions as a test. This test is used to determine how far the student has progressed student's writing skills.

2. Treatment

The researcher administers the treatment to the students after conducting the pre-test. The goal of treatment is to help students strengthen their writing skills. The treatment which use is Clustering technique. The researcher give clear instruction to explain about Clustering technique. After students understand about Clustering techniques, researchers provide instructions on how to use Clustering techniques in learning writing. After that, students are asked to practice it into a descriptive paragraph.

3. Post-test

The last method which is use to The data is collected after the test. A post-test is a measurement of some property or characteristic that is given to participants in an experiment after they have completed the trial. a treatment (Creswell, 2008). Post-test is done after giving treatment in experimental research study or after teaching writing descriptive text by using Clustering technique. The post-test have done to get writing descriptive text score of students after doing treatment. In this research post-test will be given to the students' after the students' had been taught by using Clustering technique in writing descriptive text. The researcher asks students to work on the essay questions and do it carefully. The purpose of administering post-test in this study is to observe and measure the students' development in writing skills after having the treatment.

H. Data AnalysisTest

This research, researchers used normality test and homogeneity test to test the data as a t-test requirement. As a result, before administering treatment, the researcher conducts a validity and reliability of a pre-test have been determined in other classes. Following the pre-test, the researcher administers therapy to the participants. After therapy, the researcher administers a post-test with the same question as the pre-test. T-test is used to collect and analyze data. T-tests are used to see if there is a difference between the results of students'

writing skills when Clustering Techniques are used. The data should be checked for normality and homogeneity, as required by the t-test.

1. Normality Test

The Normality was utilized to determine whether or not the data in the experimental and control classes had a normal distribution. For normalcy in this study, statistical computation utilizing SPSS (Statistical Package for Social Science) was used. The following tests of normalcy were used:

Kolmogorov – Smirnov and Shapiro Wilk are two famous mathematicians.

The following are the hypothesis formulas:

Ho: The information is generally dispersed.

The data aren't dispersed normally.

The following are the acceptance criteria:

If Sig \geq 0.05, Ho is acceptable.

If Sig = 0.05, Ha is approved.

2. Homogeneity Test

The homogeneity test was performed after the researcher received the results of the normality test in order to determine if the data was homogeneous or not. For homogeneity in this study, statistical computation utilizing SPSS (Statistical Package for Social Science) was used.

The following are the hypotheses for the homogeneity tests:

Ho = the data variance is homogeneous

Ha = the data variance is not homogeneous

The following are the approval or rejection criteria for homogeneity tests:

If Sig \geq 0.05, Ho is acceptable.

If Sig = 0.05, Ha is approved.

3. Hypotesis Test

To determine the significance of the treatment effect, the data would be evaluated using an independent sample t-test once it was determined that the data was normal and homogenous.

Ha: Students' ability to produce descriptive writings improved significantly after utilizing the Clustering Technique in eleventh grade SMAN 01 Village throughout the 2019 academic year.

Ho: There is no significant influence experienced by students after using the Clustering Technique of the ability to write descriptive texts in eleven grade SMAN 01 Village of the 2019 academic year.

The following are the requirements for accepting a hypothesis test:

If $\text{Sig} = 0.05$, H_a is approved.

If $\text{Sig} > 0.05$, H_o is acceptable.