CHAPTER III

Research Method

In this part, the writer described about research method that is usedin conducting the research. It was purpose to answer the problem of the study. This chapter consists of research design, population and sample, instruments of the study, validity, reliability, data collection procedures, and data analysis procedures.

A. Research type

In this research, the writerused the quantitavie research. It was because the writer measured the students' writing score by test (pre-test and post-test). Quantitative is a research that relies less on focus groups, subjective reports and case studies but is much more focused on the collection data and analysis of numerical data and statistics. It means the writercollectedthe data which containedof numbers and itwas analyzed by statistic method. The field studywas done in the form of experiment by applying two different techniques for two different groups of students. Experiment class was sample class that gave treatment which the teaching learning process usedclustering technique in teaching writing descriptive text. In the other hand control class was class that the teaching learning process did not use clustering technique in teaching writing descriptive text. In this research, the writer taught the students directly.

B. Research Design

The design of this study was experimental design because the writerfound the effectiveness of using clustering technique to improve students' writing score in descriptive text. Experimental research involves a study of the effect of the systematic manipulation of one variable on another variable. The writer did field study, especially quasi experimental design. An experiment involves the comparison of the effects of a particular treatment with that of a different treatment or without treatment. Quasi experimental design or similar to randomized experimental design in they involve manipulation of an independent variable, but different in that subjects are not randomly assigned to treatments group.[1] The writer used the Quasi-Experimental design in this study. Because it was not possible to randomly assign subjects to treatment groups. This study will compare with two ways and the writer wanted to measure the effectiveness of teaching writing using that ways.

Although true experiments are preferred, quasi-experimental designs are considered worthwhile because they permits researcher to reach reasonable conclusion even though full control is not possible. The writer used nonrandomized control group; pretest-posttest design was one of the most widely used quasi-experimental design in educational research.[2]

The design consisted of two groups that were chosen without random; they were experiment group and control group. Both of groups were given pre-test

[1]Donald Ary, Lucy Cheser Jacob, and Christine K, Sorense, *Introduction to Research in Education*, USA: Wadsworth Cengange Learning, 2010, p.316.

[2]Alison Mackey and Susan M. Gass, *Second Language Research Methodology and Design*, London, 2005, p. 146.

before having treatment. The experiment group was given treatment (teaching descriptive text by using clustering technique) and the control group was taught usually that was used by the English teacher before this study. After having treatment, both groups (experiment and control group) were given post- test. Finally, the results of post-test were compared using T test.

Why the writer chose this design, because experimental design was aimed to investigate the cause and effect between the object of research. This was related to the objectives of the study thatwas to foundthe significant effect to the students' writing ability taught by clustering techniqueand did not use clustering technique.

Table 3.1
Scheme of quasi experimental design
Nonrandomized control group, pretest-posttest design

Subject	Pre-test	Independent Variable	Post-test
E	**Y1**	**X**	**Y2**
C	**Y1**	**-**	**Y2**

where:

E : Experimental group

C : Control group

X : Independent variable

Y1 : Pre-test

Y2 : Post-test

C. Population and sample

1. The Population of study

The large group about which the generalization is made is called a *population.* Population is defined as all members of any well-defined class of people, events, or objects.[3] .In this study, the writer chose the students fromSMP Negeri 3 Palangka Raya.The population was seventh graders of SMP Negeri 3 Palangka Raya. It consists of 9 classes.

Table 3.2
The number of the seventh grade students of SMPN 3 Palangka Raya

No	Classes	The number of students
1	VII-1	35
2	VII-2	34
3	VII-3	36
4	VII-4	36
5	VII-5	36
6	VII-6	36
7	VII-7	37
8	VII-8	37
9	VII-9	37
	Total	325 students

2. The sample of study

The small group that is observed is called a sample. A sample is a portion of a population.[4] Sample is a representative of population. The sample was taken by using purposive sampling because the writer chose two classes as sample. The writer assumed that two classes have same number of students, and same teacher. Purposive sampling represents a group of different non probability sampling

[3]DonalAry, Lucy Cheser Jacobs, Chris Sorensen, and AsgharRazavieh, *Introduction to Research in Education Eight edition,* p. 148.
[4] Ibid.148

technique. Also known as a judgmental, selective or subjective sampling, purposive sampling relies on the judgment on the researcher when it comes to selecting the data that are to be studied. Usually the sample being investigated is quite small, especially when compare with the probability sampling technique. Moreover, sample is the small group that will be observed. All the population will be give pretest to choose two parallel classes as the sample, the experimental class and the control class.

Table 3.3
The Number of sample

No	Classes	Groups	Number of students
1	VII-1	Experiment	35
2	VII-2	Control	34
		Total	70 students

D. Research of instrument

1. Test construction

The construction isbased on the objective of the study. The study wasaimed at finding the effectiveness of clustering techniquein writing descriptive text. To investigatethe effectiveness of clustering technique, the subjects were assigned to write descriptive textby clustering techniqueand without clustering technique. The result of the two tests was investigated using statistical analysis and the outcomes were compared to see the effects of clustering technique on writing.

To gain the appropriate writing test for the aim of this study, the writer did some steps: (a). planning the writing test, (b). preparing the writing test, (c). trying out (pre-test) the test and analyzing the result, and (d).carrying out the test.

a. Planning The Writing Test

To produce a good writing test, the writer madeplan on the test construction. In this sense, the objective of the test was determined. Then, the writer decided the appropriate type of test. The test type and test objectives were very close. The test objective cannot be achieved without having appropriate test type. Then, the writer cared for the adequacy of the content. The test content should match with test types and objectives. Lastly, the time allocations for the test administration plans as well as the instrument try out.

b. Preparing The Writing Test

The writing test used to elicit the data covering direction and instructions of what the subjects have to do. To make the instruction clear and understood by the students, the instructions must be simple. In Sabarun thesis, to construct the directions, the writer took into account the guidelines applied by Clouse as follow: (1).The question should be clear, (2). The question should be brief, (3).The question should be definite, (4). Avoid question requiring yes or no answers, (5).Average students should be able to write answer to the questions, (6).The vocabulary used and the concepts expressed in the topic should not be too difficult for ordinary students to understandimmediately,(7).The instructions should provide an organizing principle for composition.[5]

The writing instructions were designed to measure the students' writing score. Itwas scored on the basis of the marking scheme that contains some features or

[5]Sabarun, *The Effectiveness of Using Clustering Technique in Writing Expository Essays of the Fourth Semester English Department Students of Palangka Raya*, Unpublished Individual Research Proposal, Palangka Raya: STAIN Palangka Raya, 2013, p.37.

component of writing such as content, organization, sentences structure, and grammar, usage and mechanics of the students' writing.

E. Research Instrument Reliability

A test has to be reliable as a measuring instrument. Reliability is a necessary characteristic of any good test for it to be valid at all. Reliability indicates how consistently a test measure whatever it does measure.[6] Reliability is concerned with the effect of such random errors of measurement on the consistency of scores. But some errors involved in measurement are predictable of systematic.[7]Good instrument in a research is not only the instrument valid, but it also reliable to measure what supposed to be measured. The instrument should be consistent what is measured.

In analyzing the reliability can be usedTest-Retest method. An obvious way to estimate the reliability of a test is to administer it to the same group of individuals on two occasions and correlate the two sets of score. The correlation coefficient obtain by this procedure is called a test-retest reliability.[8]To know the level of test reliability, the researcher applied the formula as explain below.

The formula to be use:

$$r_{=} \frac{n(\sum XY) - (\sum X)(\sum Y)}{\sqrt{[n(\sum X^2) - (\sum X^2)]\,[n(\sum Y^2) - (\sum Y^2)}}$$

[6]DonalAry, Lucy Cheser Jacobs, Chris Sorensen, and AsgharRazavieh, *Introduction to Research in Education Eight edition,* Canada: Aaron Downey, Matrix Production, inc, 2010p. 224.

[7] Ibid, p.238

[8]Ibid, p.242

Where:

r_{xy} = index correlation Number 'r' product moment .

N = Number of Cases

$\sum xy$ = Multiplication result between score X and score Y

$\sum X$ = total value of score x

$\sum Y$ = total value of score y

Interpretation:

$r_{xy>rt}$: Valid

$r_{xy<rt}$: Invalid

According to Suharto, the result of the calculation above is connected to the following criteria:

0.800 - 1.000 = very high validity

0.600 - 0.799 = high validity

0.400 - 0.599 = fair validity

0.200 - 0.399 = poor validity

0.000 - 0.199 = very poor validity[9]

F. Research Instrument Validity

According to Heaton,

"The validity of the test is the extent to which it measures what it is supposed to measure and nothing else. Every test, whether it is a short, informal classroom test or a public examination, should be as valid as the constructor cam make it. The test must aim to provide a true measure of the particular skill which is intended to measure".[10]

[9] G. Suharto, *MetodologyPenelitianDalamPendidikanBahasaSuatuPengantar*, DepartemenPendidikandanKebudayaan, 1998, p. 126

[10] *Writing English Language*, pdf. (Acessed on 1 November 2014)

Therefore, a test is said to be valid when it actually measures what it is intended to measure.

Validity is crucial to fair and meaningful writing assessment. In construction the instrument, the writerconsidered the validity of the test. The writerusedtest (pre-test and post-test) in this research. To make the instrument valid, it wasapproved by the real teacher on this research. To valid the result of the test, the writer askedthe real teacher to analyze it. The writeranalyzed the result based on the suggestion of the real teacher.

1. Face Validity

The types of face validity, if the test items look right to other testers, teacher, indicators and test. The types of test items used in this research can be suitable to the others at the same level was Senior High school.[11]

For face validity of the test items as follow:

a) The test use written test in writing test instruction.
b) The evaluation by written test based on scoring system.
c) Kind of the written test is writing descriptive text.
d) The Language of items use English
e) The written test was suitable with syllabus of English writing for first yearstudents at SMP Negeri 3 Palangka Raya.

[11]J. B.Heaton, *Writing English Language Test*, 1975, p. 152.

2. Construct Validity

Construct validity is type of validity which assumes the existence of certain learning theories or construct underlying the acquistion of abilities and skills. In this case, the test is written in order to measure the students, writing ability.

3.Content Validity

This kind of validity depends on a careful analysis of the language being tested being testes and of the particular course objective. The test shouldbe so constructed as to contain a representative sample of the course, the relationship between the test items and the course objective always being apparent.[12] The instrument used test, the testing of content validity was done by asking theopinion of the judgment experts whether the instrument could be tried try out or not.

G. Data collection procedures

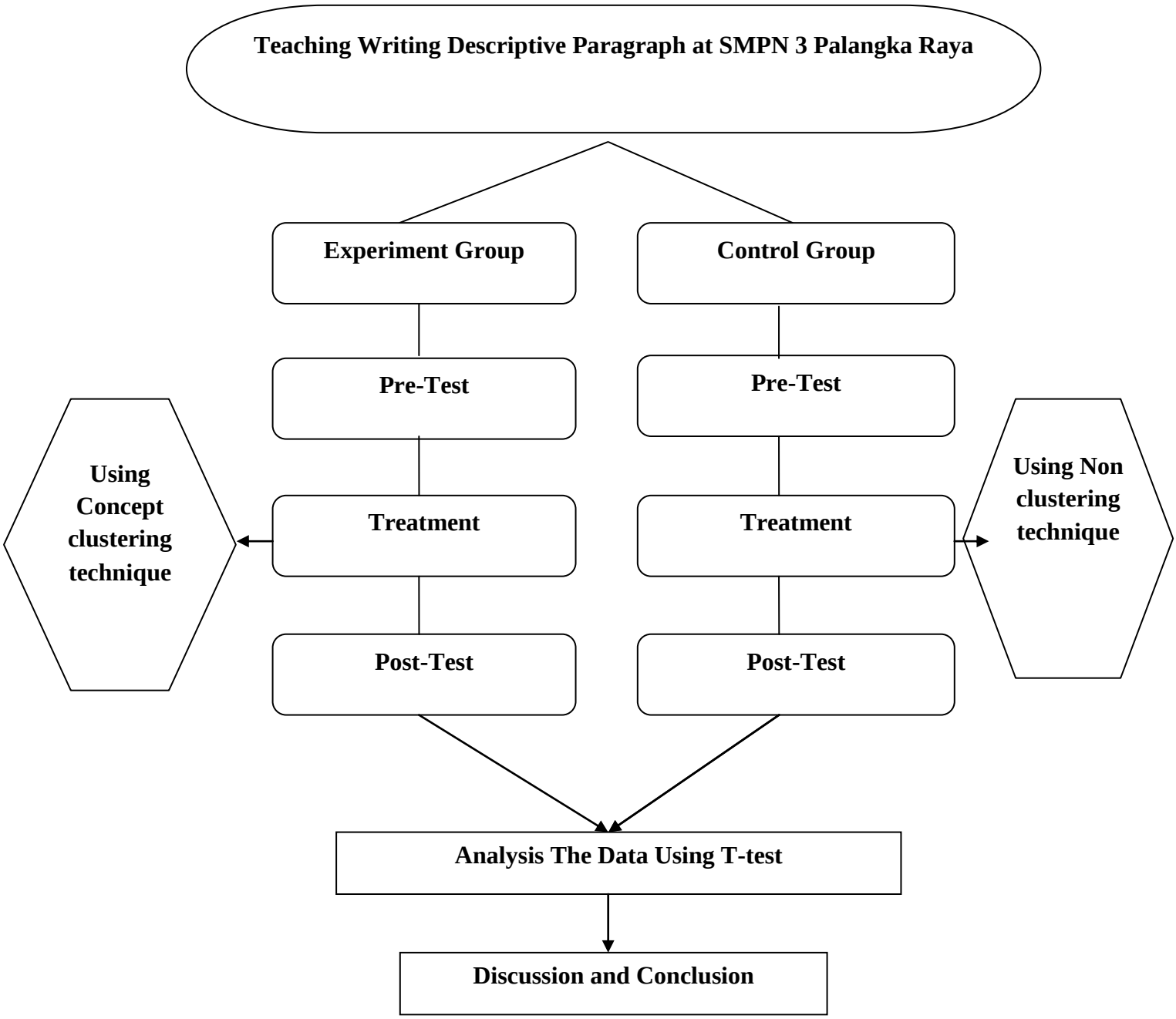
In this study, the writer used some procedures to collect the data. The procedure consists of some steps as follows:

1. The writer observed the school by headmasters' permission.
2. The writer asked the class with the English teacher who teach English in the class that became the class of research:
   a) The number of the class.
   b) The number of students
3. The writer determined the class into experiment group and control group.
4. The writer gave pretest to the experiment group and control group.
5. The writer gave treatment the experiment group using clustering technique.

[12]*Ibid*,p. 154.

6. The writer gave treatment the control group without using clustering technique.
7. The writer gave posttest to the experimental group and control group.
8. The writer gave score to the data from experimental group and control group.
9. The writer analyzed the obtain data from pretest and posttest using t-test
10. The writer interpreted the analysis result
11. The writer concluded the activity of the study whether the clustering technique gave effect to students' ability in writing descriptive text or not, based in the obtained data.

Figure 3.1 Data Collection Procedure



H. Data Analyze procedures

The data of this study was students' writing score. To analyzed the data, the writer applied an appropriate technique to find out whether teaching writing using clustering technique was effective to improve students' writing score or not. In inferential analysis, hypothesis testing was done. The technique of the data analysis, the writer used descriptive analysis (mean, mode, median, standard deviation) and inferential analysis (test of normality, test of homogenity, and test of hypothesis).

1. Normality Test

Itisusedtoknowthenormalityofthedatathatisgoingtobe analyzed whether both groups have normal distribution or not.In this study to test normality the writer applied SPSS 16.0 program using Kolmogorov Smirnov with level of significance α=5%. Calculation result of asymptotic significance is higher than α (5%) so the distribution data is normal. In the contrary, if the result of asymptotic significance is lower than α (5%), it means the data is not normal distribution.[13]

2. Homogeneity Test

Homogeneityisusedtoknowwhetherexperimentalgroupandcontrolgroup, thataredecided,comefrompopulationthathasrelatively samevariantor not. To calculate homogeneity testing, the writer applies SPSS 16.0 program using Levene's testing with level of significance α (5%).

Ifcalculationresultis higherthan5%degreeof significance so H_a is accepted, it means both groups have same variant and homogeneous.[14]

[13]Jean D. Gibson and Subhabrata C., *Nonparametric Statistical Inference*, 4th Ed., New York: Marcel Dekker, Inc., 2003, p. 111

[14]Analisis Data dengan SPSS,http://pasca.undiksha.ac.id/elearning/staff/dsnmateri/4/1-45.pdf(online 24 June 2014).

3. Testing Hypothesis

The writer calculates the data t-test with formula:[15]

$$t_o = \frac{Mx_{1-Mx_2}}{SEmx_{1-mx_2}}$$

Where:

$Mx_1 - Mx_2$ = Differentiation of two means

$SEmx_1 - mx_2$ = The standard error of the difference between two means.

With the criteria:

If $t_{test} > t_{table}$ = Ha is accepted and Ho is rejected

If $t_{test} < t_{table}$ = Ha is rejected and Ho is accepted

The writer used the level of significance at 1% and 5%. If the result of t_{test} is higher than t_{table} Ha is accepted but if the result of t_{test} is lower than t_{table} Ho is accepted.

The writer used SPSS 21.0 after t-test to answer the problem of the study. Whether there is difference on students' writing score in descriptive text between using clustering technique and without using it. After that, the writer calculated the degree of freedom with formula: df = N1+N2-2

where:

df : Design of freedom

N1/N2 : Number f cases

The writer does some ways in the data analysis procedures, they are as follows:

1. Collecting the students' written scores of Pre-test and Post- test.
2. Arranging the obtained score into the distribution of frequency of score table.

[15]Nana Sudjana, *Metode Statistik*, Bandung: PT. Tarsito Bandung, 1996, p 242.

3. Calculating mean, median, modus, standard deviation and standard error of students' score.
4. Measuring the normality, homogeneity.
5. Analyzing the data by using t-test to answer the problem of the study. In addition, the SPSS program is applied.
6. Interpreting the result of analyzing data.
7. Making discussion to clarify the research finding.
8. Giving conclusion.