

CHAPTER III

RESEARCH METHODS

This study aimed in inquiring whether there is any difference on students' English writing achievement between those taught by clustering technique and traditional technique. This chapter presents the method used to collect data of the study. in detail, it consists of the research design of study, the research variable, the place and time of study, the instrument of research, the data collection technique, the data analysis technique, and the research hypothesis.

A. Research Design of Study

The researcher of the study acts as the participant and analyzes the data taken from the teacher of MTs Raudlatul Ulum.

This study was held in experimental study in order to test the hypothesis, exactly to find the effectiveness of clustering used. Therefore, to answer the research problem as written in the first chapter, true experimental design was used in this study.

In this study, two classes of the eighth grade in MTs Raudlatul Ullum were involved as the experimental and control group. Both classes were tested by pre-test and post-test. In the pre-test, all the eighth grades were given pre-test in order to find similar ability of students in the sample of this study. C class and D class were chosen as the sample of the study. Post-test was given after treatment

to experimental group. But, before pretest and posttest were administered, try out was given to another class who was not included in the sample in order get appropriate test items that E class. The process of the study can be presented as in the table below.

Table 3.1
The Process of Experimental Research

| Group | Pretest | Treatment | Posttest |
|--------------|-------------------------|------------------|-------------------------|
| C | Y_1 | X | Y_2 |
| D | Y_1 | - | Y_2 |

Where

C : the experimental group

D : the control group

Y_1 : the pretest administered before treatment

X : the independent variable or the treatment (using clustering).

Y_2 : the posttest administered after the treatment

The steps of the experiment were as the following. First, two classes were taken as sample of this study, one being the control group and another being the experimental group. Then both classes were given a pretest. After that, the treatments were conducted to experimental group where the students were taught

by using clustering technique while the control group was taught as usual without using clustering technique. In this study, the treatments were done twice by the teacher. And the last was administering a posttest to both groups in the end of the treatment.

Besides, the test items were given to both classes was “Someone or something special in your life” as the theme of English writing descriptive text. The materials of writing text which presented in this study adopted from the selected English textbook.

B. Research Variables

Variable is the object of the study which determined by the researchers.¹ There are two variables in this study: the independent and the dependent variables. According to Ary, independent variable is variable that affects to the other variables.² For this research, the use of clustering technique is the independent variable. Meanwhile, dependent variable of this study is students’ writing English descriptive text. As stated by Ary, the dependent variable is the variable that is affected by independent variable.³

C. The Place and Time of The Study

The research was conducted at MTs. Raudlatul Ulum which is located on Jl. Sumber Kembar Langkap Besuki - Situbondo. The research was carried out

¹ Donald Ary, *Introduction to Research Education*, (New York: Philadelphia press. A, 1998), 30

² Ibid, 31.

³ Ibid.

from July 13th up to 30th, 2011 for four meeting, consisting of giving pre-test, presenting materials and giving post-test in the last meeting.

There are some reasons as to why this school was chosen in conducting the research. This school pioneered to help rural and primitive students who obligated to reach their aim. Therefore, the English teacher needs creative techniques especially teaching English writing.

D. The Instruments of The Research

The use of the instrument of the research should be made as appropriate as possible in order to get correct data. To gain an effective English teaching writing by using clustering technique, this research used experiment research that consists both experimental and control classes as the subjects. For the instrument, this study used test those pre-test and post-test to both classes to collect the data.⁴

1. Test

To answer the problem, a test was administered to experimental and control group while the score relates to teacher's criteria of writing score that includes content, organization, vocabulary, and grammar. Both the application of test and the scoring of students' achievement in writing English descriptive text were administered by the teacher of MTs Raudlatul Ulum. The tests are used to know the students' achievement after implementing *clustering* technique. Besides, there were some steps in the process of the research.

⁴ Louis Cohen, et.al, *Research Methods in Education*, (USA: Routledge, 2007), 275.

a. Try-out

In this study, try out was a test for the instrument of the research. It was held before the instrument applied. Furthermore, the purpose of try out is to find out the reliable instrument to be experimented in the research. In line with that try out was given to outside sample of the research with the same level of grade. Meanwhile, VIII E was chosen as sample of try out which consists of 30 students.

b. Pretest

In this research, the pretest was used to find the students' English writing ability in descriptive text. It was conducted to all eight grades selecting the same or similar mean of students' English writing ability in each class. According to selecting test or pretest, C and D class were chosen as the sample of the research.

c. Posttest

Afterward, the posttest was conducted to measure the effect of clustering technique used after the application of treatment in experimental group. The use of posttest also determines whether the test was effective or not by comparing the achievement of posttest scores in both classes those experimental and control.

2. Validity

According to Creswell, validity means that the individual's score from an instrument makes sense, are meaningful, and enable the researcher to draw a good conclusion from the sample of the population that is studied.⁵ Because this study deals with writing activity, the content validity is the only type which is used. A test has content validity when the sample of items represents some appropriate universe content.

To gain the content validity of writing test, this research developed the test based on standard curriculum of Indonesia. According to English standard competence, the eighth graders are supposed to be able to produce a short and simple essay by using the written words accurately, fluently and acceptable to communicate in the form of descriptive and procedure text.⁶ Thus, the English writing test of descriptive text used in this study was related to standard curriculum. In this test, the students of both experimental and control group were asked to compose a descriptive text about "Someone or something special in your life". Thus the topic chosen was appropriate to the test the eighth grades' writing ability of descriptive text. Besides, the English teacher of the eighth grade was also asked to judge the content validity of the test. Finally, the test can be said as a valid one after the English teacher agreed that the test represented the curriculum.

⁵ John W. Creswell, *Educational Research (Planning, Conducting, and Evaluating Quantitative and Qualitative Research, Third Edition)*, (New Jersey: Pearson Education, Inc., 2008), 169

⁶ BNSP, *Standar Isi Standar Kompetensi Lulusan Mata Pelajaran Bahasa Inggris Sekolah Menengah Atas, Madrasah Aliyah, dan Sekolah Menengah Kejuruan*, (Jakarta: DEPDIKNAS, 2006), 17

3. Reliability

Reliability referred to the consistency of test score from one measurement to another. Creswell defines that reliability means that scores from an instrument are stable and consistent.⁷ In this study, this research used the formula below to measure the reliability of the test.⁸

$$r_i = \frac{n \sum X_i Y_i - (\sum X_i)(\sum Y_i)}{\sqrt{[n \sum X_i^2 - (\sum X_i)^2][n \sum Y_i^2 - (\sum Y_i)^2]}}$$

Where:

N : the number of subjects

X_i : pretest score of try out

Y_i : posttest score of try out

The criteria to interpret the result based on Brown.⁹

| Scale | Level of Reliability |
|-----------|----------------------|
| 0.00-0.20 | Not reliable |
| 0.20-0.40 | Less reliable |
| 0.40-0.60 | Reliable enough |
| 0.60-0.80 | Reliable |
| 0.80-1.00 | Very reliable |

⁷ John W. Creswell, *Educational Research (Planning, Conducting, and Evaluating Quantitative and Qualitative Research, Third Edition*, (New Jersey: Pearson Education, Inc., 2008), 169

⁸ Prof. Dr. Sugiono, *Statistika Untuk Penelitian*, (Bandung: Alfabeta, 2007), 357.

⁹ Onik Zakiyah, *The Use Of Numbered Head Together (NTH) Technique to Improve Students Reading Narrative Text Ability*, (Unpublished S-1 Thesis. Surabaya: English Departement, IAIN Sunan Ampel, 2009), 37.

From the calculation of reliability of try-out test (see chapter 4) this research got 58.959 as the result. According to the table above that shows the criteria for reliability of test item, it was proved that the test was reliable.

E. Data Collection Technique

The data of the study were the scores of the students' descriptive writing. These scores were collected through pretest and posttest in order to know the differences between both experimental and control classes that taught using different way of teaching. These were the steps of conducting the study.

1. Preparing the instrument of the study. Here, the instrument was in the form of writing test of English descriptive text which was administered as pre-test and post-test. Before the instrument was administered for the pretest, it was tried out in the same school but different class from the classes that were taken as the sample of the study. The try out itself was done to class VIII E on July 13th, 2011.
2. Taking population and sample. The population in this study was the eighth grades of MTs Raudlatul Ulum. From this population, there were two classes taken as the sample of the study through pretest.
3. For the sample of the study, pretest was given to all eighth grades before deciding experimental and control group. The VIII C and VIII D class were taken as the sample of the study. Due to similar mean score of students' English writing ability and held on July 19th, 2011.

4. After administering the pretest and finding two classes which have similar mean scores, treatment was given to experimental class.

First meeting, the teacher explained descriptive text and the generic structure.

It was done on July 21st, 2011.

Second meeting, the teacher gave feedback of descriptive text and introduced clustering technique used, to get better composition. It was done on July 26th, 2011.

5. Then administering posttest to both classes, experimental and control group. It was held on July 28th, 2011.

F. Data Analysis Technique

To find out the difference of the students' writing achievement, a comparative technique was used. The comparative technique is an analysis technique to evaluate hypothesis concerning the differences between two variables that are examined statistically. In the comparative technique, the variables are compared to know whether or not the differences are significant. The *t*-test was used to find out the difference of the students' English writing achievement in experimental and control group. Next, the students' score in pretest and posttest were calculated by using *t*-test formula.¹⁰

To analyze the data, *t*-test was used under the following steps.

¹⁰ Anas Sudijono, *Pengantar Statistik Pendidikan*, (Jakarta: PT Raja Grafindo Persada, 2006) p.314

1. The first step was to calculate the mean of pre-test and post-test scores in each group. The formula below is used.

$$M_{xi} = \frac{\sum x}{N}$$

Where:

M_{xi} : the mean of the values

$\sum x$: the sum of rater

N : the number of students

2. Then, the standard deviation formula was used for the scores of pre-test and post-test of both groups. The standard was calculated using this formula.

$$SD_{Di} = \sqrt{\frac{\sum x^2}{N} - \frac{(\sum D)^2}{(N)}}$$

Where:

SD_{Di} : mean

$\sum D^2$: the sum of the d scores

N : the number of the students

3. To test the result of posttest between experimental and control group, the following formula was used:

$$t_o = \frac{M_{D1} - M_{D2}}{SE_{M_{D1}} - SE_{M_{D2}}}$$

Where:

M_{D1} : Mean of difference of Experiment Class

M_{D2} : Mean of difference of Controlled Class

$SE_{M_{D1}}$: Standard Error of Experiment Class

$SE_{M_{D2}}$: Standard Error of Controlled Class

T : t – test

4. After all data were calculated, the number of degree of freedom was calculated by using following formula.

$$\begin{aligned} df &= (N1 + 2) - 2 \\ &= (30 + 30) - 2 \\ &= 60 - 2 \\ &= 58 \end{aligned}$$

Where:

df : degree of freedom

$N1$: Number of individual in experimental group

$N2$: Number of individual in control group

Finally, it was found t_{value} from both of the experimental and control class. Then, it was checked with critical value of t_{table} at 0.05 level of significance

of t test. The null hypothesis was accepted and the alternative hypothesis was rejected when t value is higher than t table. On the other hand, the null hypothesis was rejected and the alternative hypothesis was accepted when t_{value} was higher than t_{table} .

G. Research Hypothesis

1. If $t_o > t_t$, it means that Null Hypothesis (H_o) is rejected and Alternative Hypothesis (H_a) is accepted. Thus, there is positive significant difference between the teaching writing using clustering and without using clustering.
2. If $t_o < t_t$, it means that Null Hypothesis (H_o) is accepted and Alternative Hypothesis (H_a) is rejected. Thus, there is no positive significant difference between the teaching writing using clustering and without using clustering.