

CHAPTER III

RESEARCH METHOD

A. The Location of Research

This research conducted at class VII of Madrasah Tsanawiyah Islamiyah YPI Batang Kuis in 2016/2017 Academic Year. This school is located on Jl. Mesjid Jamik Dusun 1 No. 59 Desa Bintang Meriah Kecamatan Batang Kuis, Kabupaten Deli serdang. The researcher chooses MTs. Islamiyah YPI Batang Kuis as location of research, because;

1. The data which is needed in this research can be found in this school,
2. The number of students is sufficient to be a representative sample,
3. This school is the Islamic school. This is one of the requirements from my faculty to conduct the research in the Islamic school.

B. The Population and Sample

1. Population

Populasi adalah keseluruhan objek yang akan diteliti.¹ (Population is the whole of objects that will be researched). In addition, according to Arikunto, "Population is all members of the research subject".² In this research, the population was the seventh grade of MTs. Islamiyah YPI that consists of 60 students in two classes. It could be seen from the table:

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Table 3.1

The Population of Research

Number	Class	Students
1	VII-1	32
2	VII-2 27	28
	Total	60

2. Sample

¹Syahrumsalim, (2007), *Metodologi Penelitian Kuantitatif*, Bandung: Citapustaka Media, page: 113

²Suharsimi Arikunto, (2006), *Prosedur Suatu Penelitian Suatu Pendekatan Praktik*, Jakarta: Bina Aksara, page: 130

“Sampling atausampleberarticontoh, yaitusebagiandariseluruhindividu yang menjadiobjekpenelitian”.³ (Sample it’s mean an example, a part of all individuals that will be an object in research). Experiment researchers start with the total population and work down to the sample. According to Louis, “the sample isthe smaller class or subset of the population”.⁴If the research subject less than 100 is better to take all of it. So, it is regarded as a population research. But, if the research subject more than 100, the researcher can take 10 – 15% or 20 – 25% from the population.⁵

In this research, the researcher was took 60 students. The researcher uses the random access sampling to get the sample because the class has the same quality and homogeny, there are no classification.

Table 3.2

The Sample of Research

Number	Class		Students
1	VII-1 (Experimental Class)	X	32
2	VII-2 (Control Class)	Y	28
	Total		60

C. The Design of Research

This research is a quantitative research. According to Syahrums and Salim, a quantitative research is an empirical research that consist of statistical data.⁶ It means that the writer was collected and analyzed the data statistically. This research will use experimental design. Experimental design is a quantitative research design that aims to get the correlational of cause and effect clearly between some factors of causes with the problem or condition. .

In experimental research, there were two groups of sample namely control group and experimental group. Both of groups were given pre-test and post-test. Pre-test was administered to each group before giving treatment. The

³Mardalis, (2007), *MetodePenelitianSuatuPendekatan Proposal*, Jakarta:BumiAksara, page:55

⁴ Louis Cohen, dkk, (2007), *Research ethod in Education*, London:Routledge, page:100

⁵SuharsimiArikunto, *Op.Cit.*, page:134

⁶Syahrums and Salim, *Op.Cit*, page:4

experimental group was taught by using semantic clustering technique while control group was taught without using clustering technique. The research design was showed in Table 3.1 as following :

Tabel 3.3
Research Design

Group		Treatment		Class
Experimental group	Pre Test	Applying clustering Technique	Post Test	VII – 1
Control group	Pre Test	Without Clustering Technique	Post Test	VII- 2

D. The Operational Definition

This research has two variable, they were independent variable and dependent variable.

1. Independent variable of this research was Clustering Technique in teaching vocabulary. This strategy was applied to know the effect of Clustering Technique on students’ vocabulary mastery in seventh grade at MTs.Islamiyah YPI BatangKuis in 2016/2017 Academic Year.

2. Dependent variable was students’ vocabulary mastery. It was hoped that the students can express their idea in mastery vocabulary in English language.

E. The Instrument for Collecting Data

In collecting the data from field of the research, the researcher used the test. A test in term, ia a method of measuring a person’s ability, knowledge or performance in given domain. The aim of using the test is in accordance with the context, such diagnostic evaluation, selection and promotion, because everyone has different ability, personality, interest and behaviour. In this case, the researcher used writing test to measured students’ vocabulary mastery. In this test, the researcher will give 25 questions in multiple choices.

F. The Score of Test

The scores of the test were calculated by applying the formula:

$$S = \frac{R}{N} \times 100\%$$

In which :

S = Score of the test

R = Number of the correct answer

N = Number of the test items

G. The Technique for Collecting Data

The procedure of the research were divided into pre-test, treatment, post-test, and scoring the test. Each of this session was discussed now.

1. Pre-test

The pre-test was conducted to discover the homegency of the sample and the mean score of each group. In other words, it was used to measure the students' ability in mastery vocabulary before applying the treatment. Before starting the experiment, a pre-test was administered to the samples of both groups with the same items. The kind of the researcher gave was an essat test. Then their test was checked and collected as the pre-test data and gave the score.

2. Treatment

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The treatment was conducted after the administration of the pre-test. The experimental group and control group were taught by using the same materials but different instruments. In the experimental group, the researcher used semantic clustering technique on students' mastery vocabulary, and control group was taught by using lecturing technique.

a. Teaching Presentation in the Experimental Class

The treatment was conducted after the administration of pre-test. The teacher taught the presentation to the experimental group by the following procedures.

Tabel 4.4

The Treatment Experimental Group

Steps	<p align="center">Experimental Group (Applying clustering Technique)</p>	
1	Pre-Test	Pre-Test
	<ul style="list-style-type: none"> • Teacher greets the students. • Teacher gives an opinion about related topic. • Teacher asks the students to choose one word based on the topic. 	<ul style="list-style-type: none"> • The students give a response for the teacher's greeting. • The students listen to the teacher's explanation and do the brainstorming. • The students write a word based on the topic provided.
2	Treatment	Treatment
	<p>Giving Information</p> <ul style="list-style-type: none"> • Teacher shows or tells the learning objectives. • Teacher presents the material. <p>Grouping</p> <ul style="list-style-type: none"> • Students are divided into some groups. • Teacher gives some piece of paper. • Teacher asks the students to write some words that are related with the keywords provided. • Teacher guides the students to discuss about the result of group discussion. • Teacher and students make a conclusion. 	<ul style="list-style-type: none"> • Students listen to the teacher. • Students listen to the teacher. <p align="center">33</p> <ul style="list-style-type: none"> • Students sit in group. • Students look at the key words. • Every group writes some words using the keywords. • The students discuss the result of their discussion. • Teacher and students make a conclusion.
	<p>Giving Information</p> <ul style="list-style-type: none"> • Teacher shows or tells the learning objectives. • Teacher presents the material. <p>Grouping</p> <ul style="list-style-type: none"> • Students are divided into some groups. • Teacher gives some piece 	<ul style="list-style-type: none"> • Students listen to the teacher. • Students listen to the teacher. • Students sit in group. • Students look at the key

	<p>of paper.</p> <ul style="list-style-type: none"> • Teacher asks the students to write some words that has related with the keywords provided. • Teacher Guides the students to discuss about the result of group discussion. • Teacher and students make a conclusion. 	<p>words.</p> <ul style="list-style-type: none"> • Every group writes some words using the keywords. • The students discuss the result of their discussion. • Teacher and students make a conclusion.
3	Post-test	Post-test
	<p>Individual</p> <ul style="list-style-type: none"> • Teacher gives some keywords about the topic. • Teacher asks the students to write some words that has related with the keywords provided. • After the time is out, teacher collects the papers 	<ul style="list-style-type: none"> • Students look at the keywords. • Students write some words based on the keywords given. • The students give their writing.

b. Teaching Presentation in The Control Class

The teaching learning process that was applied in the control group by using lecturing technique can be described as follows:

Table 1.5 The Treatment for Control Group

Steps	Experimental Group (using without Clustering Technique)	
	Teachers Activity	Students Activity
1	Pre-Test	Pre-Test
	<ul style="list-style-type: none"> • Teacher greets the students. • Teacher gives an opinion about related topic. • Teacher asks the students to write some word to be a descriptive 	<ul style="list-style-type: none"> • The students give a response for the teacher's greeting The students listen to the teacher's. • The student listen to the teacher's explanation. • The students write a descriptive text based on the topic provided.

	text.	
2	Treatment	Treatment
	<p>Giving Information</p> <ul style="list-style-type: none"> • Teacher explain about descriptive text. • Teacher gives the example of descriptive text. • Discuss the format of descriptive text with the students and ask some students to analysis. • Give chance to the students to asks somequestion • Reviews again about the descriptive text. 	<ul style="list-style-type: none"> • Students listen to the teacher and write teacher's explanation on their note book. • Students read the example • Explain the generic structureof that text. • Asks question to theteacher. • Pay attentions to the teacher.
3	Post-test	Post-test
	<p>Individual</p> <ul style="list-style-type: none"> • Asks the students to write a descriptive textabout someone. • After the time is out, collect the papers. • Checks the students workto make correction. 	<ul style="list-style-type: none"> • The students write a descriptivetext based on the topic provide before. • Give their writing. • Pay attention.

3. Post-test

After giving treatment to the students, the researcher gave the students a post-test in order to the see the result wheter the technique was effective or not. The test of post-test was similar to the test that was given in the pre-test.

H. The Technique for Analyzing Data

In this research, the data will be obtained from the experiment and control class. To significantly whether there is effect of applying clustering technique on the students' vocabulary mastery, the researcher should do requirement test at the first by using normality and homogeneity test.

1. Normality Test

To test the normality of data, the researcher will useLiliefors test with the following steps:

- Calculating mean and deviation standart by the formula:

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

$$S = \sqrt{n \sum X_1^2 - (\sum X_1)^2}$$

- Perception x_1, x_2, \dots, x_n made permanent number $z_i, z_1, z_2, \dots, z_n$ by using formula:

$$Z_i = \frac{x_i - \bar{x}}{S}$$

- To find out $S(Z_i)$ we use the formula: $S(Z_i) = \frac{Fcum}{n}$
- Here, after calculating a proportion Z_1, Z_2, \dots, Z_n , the smaller equals to Z_i .
- Counting the difference $F(Z_i) - S(Z_i)$, and then determine its absolute price.
- Taking the biggest price among absolute price of the difference and mentioning the price by L_0 .
- If $L_0 < L$ obtained from the critical coefficient test, the Liliefors with the real level $\alpha = 0,05$, hence the distribution is normal.⁷

2. Homogeneity Test

To the test variants of both homogenous samples, variants equality test, that is:

$$F = \frac{\text{The biggest variants}}{\text{The smallest variants}} \quad 36$$

Here, its criterion is $F_{\text{observation}} < F_t$, then both samples was homogenous.

3. Hypothesis Test

The data will be analyzed by using t-test formula. The formula is:

$$t = \frac{Mx - My}{\sqrt{\left(\frac{dx^2 + dy^2}{nx + ny - 2}\right) \left(\frac{1}{nx} + \frac{1}{ny}\right)}}$$

Mx = the mean score of experiment group

My = the mean score of control group

dx = the deviation standard of experimental group

dy = the deviation standard of control group

nx = the total sample of experimental group

ny = the total of control group⁸

⁷Sudjana, (2015), *Metoda Statistika*, Bandung: Tarsito. Page. 466

