

CHAPTER III

RESEARCH METHOD

This chapter discussed subject and setting of research, research variable, research design, sources of data, instruments, and procedures of experimentation, and method of data analysis.

A. Setting

This research was conducted on the second semester in the academic year of 2009/2010. The writer conducted this research from 10th of May 2009 to 2nd of June 2010. It was conducted in MTs. Uswatun Hasanah Mangkang Semarang.

Table 1. List of time of the study

Number	Activity	Month/Date					
		May					June
		10 th	17 th	19 th	24 th	26 th	2 nd
1.	Try out	-					
2.	Pre test		-				
3.	Treatment 1			-			
4.	Treatment 2				-		
5.	Treatment 3					-	
6.	Post test						-

B. Participants (Population, Sample and Sampling Technique)

1. Population

The participants of this research are students of grade eight of MTs Uswatun Hasanah Mangkang Semarang. Population is formulated as the whole groups of people or object that have been formulated clearly.¹ The population in this research was all students of grade eight of MTs Uswatun Hasanah Mangkang in academic year of 2009/2010 which consisting of three classes. Each class consists of twenty two and twenty five.

¹Suharsimi Arikunto, *Prosedur Penelitian : Suatu Pendekatan Praktik*, (Jakarta:PT. Asdi Mahasatya, 2006), p.130.

2. Sample and Technique Sampling

Sample is some of chosen population using certain procedure so that can be expected to represent its population. Sampling is the process done to choose and take sample correctly from population so that it can be used as valid representative to the population.² In this research, the researcher used purposive sampling technique. This technique was done by taking the subject/sample which is not based on strata, random or area but it is based on the consideration of a certain purpose.³ In this research, researcher took two classes, because based on the result of the pre test, these two classes gained similar average achievements and considered as homogeneous class. In which the each class consists of 25 students. Class 8A was chosen as the experimental group which was taught using song lyrics while class 8B was chosen as the control group which was taught using non song lyrics.

C. Research Variables

According to Fred D. Kerlinger as cited by Arikunto, that all experiments have one fundamental idea behind them; to test the effect of one or more independent variables on a dependent variable (it is possible to have more than one dependent variable in experiments).⁴

In this study there are two variables. They are Independent Variable (x) and Dependent Variable (y).

1. The independent variable (x)

Independent variable is the variable that the experimenter expects to influence the other.⁵ The independent variable of this research was the use of song lyrics to teach vocabulary of verb.

2. The dependent variable (y)

Dependent variable is variable that measures the influence of the independent variable.⁶ Dependent variable in this study was the use of

²Sugiharto, et al., *Teknik Sampling*, (Jakarta: Gramedia Pustaka Utama, 2003), 2nd Ed, p.4

³Suharsimi Arikunto, *Op.Cit.*, p. 139.

⁴*Ibid*, p. 119.

⁵David Nunan, *Research Method in Language Learning*, (Cambridge: Cambridge University Press, 1992), p. 25.

vocabulary achievement score of students for the second year students of MTs.Uswatun Hasanah Mangkang Semarang.

D. Research Design

In this research, the writer used the form of quantitative approach to analyze the data. It is quantitative because it emphasizes the systematic measurement and quantification of variables and the data that was gained were numeric and was analyzed by using statistical computation. Quantitative approach stressed the analysis to the numerical data that is processed by statistical method. It will explain the result of pre-test and post-test.

1. Experimental Research

Experimental research is the appropriate method that used for collecting and analysis data⁷.Of many types of research that might be used, the experiment is the best way to establish cause-and-effect relationships among variables.

An experimental research involved two groups: experimental group and control group. The experimental and control group are consisting of eight grade students of MTs.Uswatun Hasanah Mangkang Semarang. An experimental group using song lyrics while control group using conventional method. According to Nunan, experiment is designed to collect data in such a way that threats to the reliability and validity of the research are ministered.⁸ This study used pre-test and post-test.

The design of the experiment could be described as follows:

$$\begin{array}{r} E \ 01 \ X \ 02 \\ \hline C \ 03 \ Y \ 04 \end{array}$$

In which: O_1 = Pretest value of experimental group

O_2 = Posttest value of experimental group

O_3 = Pretest value of control group

⁶ *Ibid*, p.25.

⁷ *Ibid*, p 25.

⁸ *Ibid*, p.47.

O_4 = Posttest value of control group

X = Treatment of experimental group

Y = Treatment of control group

From the design above, subjects of research were grouped into an experimental group (top line) and a control group (bottom line). The quality of subjects was first checked by pre-testing them (O_1 and O_2). Then, the experimental treatment (taught by using song lyrics) was applied to the experimental group, while the control group was taught without song lyrics. The results of post-test (O_2 and O_4) were then computed statistically.

E. Data Collection Technique

In gaining the data, the researcher attempted to employ these following methods.

1. Documentation

It refers to the archival data that helps the researcher to collect the needed data. The researcher functioned the document related to the object research such as students name list to be used in determining the team for the experiment and students' examination score from the tests.

2. Test

Test is a question which is used to measure competence, knowledge, intelligence, and ability of talent which is possessed by individual or group to collect data.⁹ In this research, there were two kinds of test, pre test and post test that were given to the students as participants, either the experimental or the control group. Before carrying out the teaching, the pre test was given to both groups in order to make sure that the two groups have similar and equal level of proficiencies. The post test was given to the experimental group after being taught by song lyrics.

The instrument of the test in this research is objective test. Objective test is frequently criticized on the grounds that they are simpler to answer than subjective test. Objective tests are divided into transformation,

⁹Suharsimi Arikunto, *Op.Cit.*, p. 150

completion, combination, addition, rearrangement, matching, correct and incorrect (true/false) and multiple choice.¹⁰ The writer used multiple choice forms.

F. Technique of Data Analysis

There are three kinds of test that will be held in experimental research, they are try-out test, pre-requisite test, and hypothesis test.

1. Try out Test

To find out the effectiveness of song lyrics to improve students vocabulary of verb, the researcher provided any test, one of them is tryout test. Tryout test is conducted before the pre test is administered. The instrument to be tried out was the composition test. The result of test was used to find out the validity, reliability, difficulty level and also the discriminating power of each item.

a. Validity

The validity is a measurement which shows validity of the instrument. It is a condition in which a test can measure what is supposed to be measured.¹¹

Heaton states that validity is the extent to which it measures what is supposed to measure and nothing else.¹² The result was consulted to critical score for r-product moment. If the obtained coefficient of correlation was higher than the critical score for r-product moment, it meant that a paragraph was valid at 5% alpha level significance.

To calculate the validity, the writer used the formula as follows:¹³

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$$

¹⁰J.B Heaton, *Writing English Language Tests* (London: Longman, 1975), p. 12-13

¹¹Suharsimi Arikunto, *Op Cit*, p.168.

¹²J. B. Heaton, *Op Cit*, p. 153.

¹³Karnadi Hasan, *Modul Dasar-Dasar Statistika Terapan*,(Fakultas Tarbiyah IAIN Walisongo: Semarang) p.5.

Where:

r_{xy} = the correlation coefficient between X variable and Y variable

N = the number of the students

$\sum X$ = the sum of total score of X item

$\sum Y$ = the sum of total score of Y item

b. Reliability

Reliability refers to the stability or the consistency of the test scores, besides having high validity, a good test should have high reliability too. Heaton states that reliability is a necessary characteristic of any good test; for it to be valid at all, a test must first be reliable as a measuring instrument.¹⁴ In this study, the reliability of the test was measured by comparing the obtained score with r-score product moment. Thus, if the obtained score was higher than the table r-score, it could be said that the test was reliable.

To calculate the reliability of the test, the writer used the formula as follows:¹⁵

$$r_{11} = \left(\frac{n}{n-1} \right) \left(\frac{S - \sum pq}{S^2} \right)$$

Where:

r_{11} = The reliability coefficient of items

n = The number of item in the test

P = The proportion of students who give the right answer

q = The proportion of students who give the wrong answer

S^2 = The standard deviation of the test

Calculation result of r_{11} is compared with r_{table} of product moment by 5% degree of significance. If r_{11} is higher than r_{table} , the item of question is reliable.¹⁶

¹⁴J. B. Heaton, *Op.Cit*, p.155.

¹⁵Suharsimi Arikunto, *Op Cit.*, p. 188.

¹⁶*Ibid*, p. 198.

c. Item Analysis

After scoring the try-out test, item analysis was carried out to find out the effectiveness of the items. Item analysis discussed two main things:

1) Difficulty Level

Heaton states that “*the index of difficulty of an item simply shows how easy or difficult the particular item proved in the test*”.¹⁷ If a teacher knows deeply about item difficulty in making a test, he can make his test easy, medium, or difficult. A good test is a test that is not really difficult and not really easy. The writer used the formula as follow:

$$P = \frac{B}{JS}$$

Where:

P = index of difficulty

B = the number of students who answer an item correctly

JS = the total number of students

The index of difficulty level can be classified as follows:

$0.00 \leq P < 0.30$ is difficult

$0.30 \leq P < 0.70$ is sufficient

$0.70 \leq P < 1.00$ is easy

2) Discriminating Power

Item of discrimination power used to know how accurate the question differ higher subject and lower subject.

To calculate the index of discriminating power, the writer used the formula as follow:

$$D = \frac{B_A}{J_A} - \frac{B_B}{J_B} = P_A - P_B$$

Where:

J_A = Number of all participant in the upper group

J_B = Number of all participant in the lower group

¹⁷J. B. Heaton, *Op.Cit.*, p.172

B_A = Number of participant in the upper group who answered the item correctly

B_B = Number of participant in the lower group who answered the item correctly

P_A = The proportion of the upper group that answered true

P_B = The proportion of the upper group that answered true¹⁸

The criterias of determining the index of discriminating are below:

D = 0.00 – 0.20 : Less

D = 0.21 – 0.40 : Enough

D = 0.41 – 0.70 : Good

D = 0.71 – 1.00 : Excellent

2. Pre-Requisite Test

Before the writer determines the statistical analysis technique used, the writer examined the normality and homogeneity test of the data.

a. Normality Test

It is used to know the normality of the data that is going to be analyzed whether both groups have normal distribution or not. The normality test with Chi-square is done to find out the distribution data.

The writer used Chi-square formula, as follows:

$$X^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Cited from Sudjana.¹⁹

Where:

X^2 = Chi-square

O_i = Frequency that was obtained from data

E_i = Frequency that was hoped

¹⁸*Ibid* p. 172

¹⁹Sudjana, *Metode Statistika*, (Bandung: Tarsito, 2002). p. 273

k = the sum of interval class

If the obtained score was lower than t-table score by using 5% alpha of significance, H_0 was accepted. It was meant that H_a was not accepted.

b. Homogeneity Test

Is used to know whether experiment class and control class, that are taken from population have same variant or not. a test should be given to both classes of students before the experiment just to make sure that the both classes really are the same.

The writer used the formula as follows:

$$F = \frac{\textit{Biggest Variance}}{\textit{Smallest Variance}}$$

Cited from Sugiono.²⁰

3. Hypothesis Test

To respond the objectives of the study, the researcher examined the data in the following steps. Firstly, the test was done in both groups, experimental group that using song lyrics to teach vocabulary of verb and control group without using song lyrics to teach vocabulary of verb (using conventional method to teach vocabulary of verb). Secondly, the result of the test was scored by using analytic scale. Thirdly, the means score of the two groups were determined. Finally, the two means were compared by applying t-test formula. T-test was used to differentiate if the students' result of students' vocabulary of verb by using song lyrics and without using song lyrics was significant or not.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

²⁰ Sugiyono, *Statistika Untuk Penelitian*, (Bandung: Alfabeta, 2007), p. 140.

Where:

$$s = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}$$

Cited from Sudjana.²¹

Where:

\bar{x}_1 = the mean score of the experimental group

\bar{x}_2 = the mean score of control group

n_1 = the number of the experimental group

n_2 = the number of the control group

s = standard deviation

s^2 = variance

If the obtained score was higher than t-table score by using 5% alpha of significance, H_0 was rejected. It meant that H_a was accepted.

G. Research Procedures

There are three stages in doing experiment research; they are pretest, treatment and posttest.

1. Pretest

Pre-test was given before the treatments. First, the writer came to the class. Then, the writer explained to the students what they had to do. Finally, she distributed the instruments and asked them to do the test.

2. Treatment

a. In experimental group

1) First meeting

In the first meeting, the teacher introduced students about verb, and then gave students song lyric in paper, then teacher played the songs and asked students to listen it, and then teacher asked the students to find the vocabulary of verb in song lyric, after that teacher explained more the song lyric in order to make students understanding vocabulary of verb.

²¹Sudjana, *Op.Cit.*, p. 239

2) Second meeting

In the second meeting, the teacher gave students song lyric in paper, then teacher played the song and asked students to listen it, and then teacher asked the students to find the vocabulary of verb in song lyric, after that teacher explained more the song lyric in order to make students understanding vocabulary of verb.

3) Third meeting

In the third meeting, the teacher gave students song lyric in paper, then teacher played the song and asked students to listen it, and then teacher asked the students to find the vocabulary of verb in song lyric, after that teacher explained more the song lyric in order to make students understanding vocabulary of verb.

b. In control group

1) First meeting

In the first meeting, the teacher introduced students about verb, and then teacher explained about verb with conventional method, and then teacher asked students to make example about vocabulary of verb and to find the vocabulary of verb in text after that teacher explained more the example in order to make students understanding vocabulary of verb.

2) Second meeting

In the second meeting, the teacher gave warming up to the students about verb, and then teacher explained about verb with conventional method, and then teacher asked students to make example about vocabulary of verb after that teacher explains more the example in order to make students understanding vocabulary of verb.

3) Third meeting

In the third meeting, the teacher gave warming up to the students about verb, and then teacher explained about verb with conventional method, and then teacher asked students to make example about vocabulary of verb after that teacher explains more

the example in order to make students understanding vocabulary of verb.

3. Post-test

Post-test was held after all treatments were conducted. This test was used to measure students' ability after they were given treatments. The result of test was analyzed statistically.