

CHAPTER III

RESEARCH METHOD

The chapter discussed the research method used in this study. It covered the presentation of the research design, population and sample, variable, research instruments, validity and reliability testing, normality testing, data collection method, data analysis and hypothesis testing.

A. Research Design

Research is a process of steps used to collect and analyze information to increase our understanding of a topic or issue Creswell (2012:3). It means that a research is process to get new information and to investigate of an event, problem or phenomenon to find out new information.

This research uses pre experimental with quantitative approach. This research was intended to investigate the effectiveness of using alphabet race games toward students' vocabulary achievement of the seventh grade at MTs Wahid Hasyim Setinggil . There are three kinds of experimental research that classified as pre-experimental design, true experimental and quasi experimental Ary et al (2010:302).

This research uses pre experimental design in the form of one group pre test and post test design with quantitative approach. This research is classified as pre experimental design because it has not a control variable. A pretest provides a measure on some attribute or characteristic that you assess for participants in an experiment before they receive a treatment and A posttest is a measure on some

attribute or characteristic that is assessed for participants in an experiment after a treatment Creswell (2012:297).

A quantitative approach is one in which the investigator primarily uses post positivist claims for developing knowledge (i.e., cause and effect thinking, reduction to specific variables and hypotheses and questions, use of measurement and observation, and the test of theories), employs strategies of inquiry such as experiments and surveys, and collects data on predetermined instruments that yield statistical data. Creswell (2003:18).

The researcher used pre experimental with one group pretest-posttest to see the result of the treatment. In pretest and posttest group the observation under take two times, before giving treatment called pretest and after giving treatment called posttest. To see the result of the treatment In one group pretest-posttest design usually involves three steps: (1) administering a pretest measuring the dependent variable, (2) applying the experimental treatment X to the subjects, and (3) administering a posttest, again measuring the dependent variable Differences attributed to application of the experimental treatment are then evaluated by comparing the pretest and posttest scores. Ary et al (2010:303).

The procedures of experimental research that use One group pretest-posttest design are:

- 1) Administering a pretest measuring vocabulary achievement of first grade of MTs Wahid Hasyim Setinggil.
- 2) Applying the experimental treatment teaching vocabulary by using Alphabet race game to the first grade of MTs Wahid Hasyim Setiggil.

- 3) Administering a posttest measuring vocabulary achievement of first grade of MTs Wahid Hasyim Setinggil.

In this research, the researcher wanted to know the effectiveness of Alphabet race games technique toward students' vocabulary achievement.

B. Population, Sample and Sampling

1. Population

Population is the large group about generalization. A population is defined as "all members of any well-defined class of people, events or objects. Ary et al (2010:148). The population of this research is the seventh grade students of MTs Wahid Hasyim Setinggil in academic year 2015/2016 that consist of two classes. They are VII A and VII B.

- a) VII A consist of 20 students
- b) VII B consist of 20 students so, the total of the seventh grade of MTs Wahid Hasyim Setinggil are 40 students.

2. Sample

Sample is part of representative of population that is observed Arikunto (2006: 130). It means that sample is part of object research which is observed. Ary et al (2006:167) also give the explanation that sample is the small group that is observed. So, sample was part of population which was researched. In this research, the researcher takes one of two classes of students of the seventh grade of MTs Wahid Hasyim as the sample, the class is B, in which total they are 20 students (11female and 9 male).

3. Sampling

Sampling is the technique to take a sample. In this research, the researcher uses purposive sampling. Barreio and Albandoz (2001:5) state Purposive sampling: it is the one in which the person who is selecting the sample is who tries to make the sample representative, depending on his opinion or purpose, thus being the representation subjective. The process of sampling the researcher finally decide to choose B class that consist of 20 students that recommended by the English teacher in MTs Wahid Hasyim Setinggil. The researcher got information from the English Teacher that this class is cooperative and easy to manage.

C. Variable

Variable in this research object or something that becomes view point of research. There are two variable in this research, they are:

1. Independent Variable

Independent variable is the variable which influence dependent variable. Ary et al (1979: 96), independent variable is an antecedent to the dependent variable. Independent variable is variable selected by the researcher to their effect on or influence with dependent variable. Independent variable in this research is Alphabet Race Game Technique.

2. Dependent Variable

Dependent variable is the variable which is influenced by independent variable. According to Ary, et al (1979: 30) dependent variable is the consequence

of or dependent variable upon antecedent variable. Dependent variable in this research was student achievement in vocabulary.

D. Research Instrument

Instrument is the tool of the method which used in this research. It needed to obtain the data in the research. The researcher used one kind of instrument to do this research, it is vocabulary test.

To obtain the required scores of the students' achievement in vocabulary ability in this research, the researcher used two kinds of test. They were pretest and posttest. The first, pretest was done on March 8th before treatment process by using alphabet race games. This subject tests in this research to know the basic competence for all students before they get treatment. For the pretest the Researcher give twenty five items in four different kinds of test formats with like and dislike topic. The first kind was fill the blank consist ten items. The second was Rearrange the letter consisted of five items. The third was multiple-choice consist of five items. And the last was match the sentence consist five items.

The second, after doing treatment, the researcher conduct post-test on April 16th, so posttest is taken after teaching English vocabulary by using alphabet race games technique. The researcher gave post-test to all students. For the posttest, The test was different from the pretest but both of them had the same level, same the topic and have the same format items. The first kind was filling the blank consist ten items. The second was Rearrange the letter consisted of five items. The third was multiple-choice consist of five items. And the last was match

the sentence consist five items. From the result of post-test, the researcher wanted to know the students' understanding and remember about the vocabulary that is given after the treatment is done. The result of the test showed that the students' vocabulary mastery increase significantly.

Table 3.1. Dates in Conducting Study

Date	Activities in Conducting Study
March, 8 th 2016	Administering pre-test
March, 26 th 2016	Administering 1 nd treatment
March, 29 th 2016	Administering 2 rd treatment
April, 16 th 2016	Administering 3 rd treatment then post-test

E. Validity and Reliability

The most important principle of language testing is validity. In this research, vocabulary test used to measure the students vocabulary achievement after being taught using alphabet race games. According to Muijs (2004: 66) Validity is probably the single most important aspect of the design of any measurement instrument in educational research. Validity is the most important consideration in developing and evaluating measuring instruments Ary.et.al (2010:225).

a. Content validity

Content validity is of prime importance for achievement test, a test called have content validity if the content of the test can represent sample of the language skill. Creswell (2012:619) said that Content validity is the extent to which the questions on the instrument and the scores from these questions are representative of all the possible questions that could be asked about the content or skills. In this test, the researcher asked students to answer the test to measure students' vocabulary achievement. The researcher made vocabulary test which consist of 10 fill the blank, 5 rearrange the letter, 5 multiple choice, 5 match the sentence. The researcher made a test based on the course objectives of syllabus KTSP, so that it was not out of the contents. The researcher also discussed with the teacher to make the test appropriate with the students. The researchers get validity from English Lecturer an English Teacher. The content validity can be seen in table 3.2 below:

Table 3.2. Content Validity

Standar kompetensi	Kompetisi dasar	Learning objective	Type of test	Items
Memahami makna dalam percakapan transaksional dan interpersonal sangat sederhana untuk berinteraksi dengan lingkungan terdekat	Mengungkapkan makna dalam percakapan transaksional (<i>to get things done</i>)& interpersonal (bersosialisai) sangat sederhana dengan menggunakan ragam bahasa lisan secara akurat, lancar dan berterima untuk	Siswa mampu melengkapi kalimat terkait dengan "like dan dislike"	Fill in the blank	10 items
		Siswa mampu menyusun huruf yang diacak terkait dengan "like dan dislike"	Rearrange the letter	5 items
		Siswa mampu menjawab pertanyaan terkait	Multiple choice	5 items

	berinteraksi dengan lingkungan terdekat yang melibatkan tindak tutur : meminta dan memberi pendapat, menyatakan sukadan tidak suka, meminta klarifikasi,merespon secara interpersonal.	dengan “like dan dislike”		
		Siswa mampu memadukan kalimat sesuai dengan artinya terkait dengan “like dan dislike”	Matching	5 items

b. Construct validity

Construct validity is related to our theoretical knowledge of the concept we are want to measure Muijs (2004:68). If, a test has construct validity, it is capable of measuring specific characteristic in accordance with a theory of language behavior and learning. The researcher creates the test based on the material which is suitable to the students at the second grade. Then the researcher constructs questions of the test from the simple one to complex one.

F. Reliability

The reliability of a measuring instrument is the degree of consistency with which it measures whatever it is measuring. Ary.et.al (2010:236). Meanwhile Creswell (2012:627) Reliability means that individual scores from an instrument should be nearly the same or stable on repeated administrations of the instrument and that they should be free from sources of measurement error and consistent.

Before conducts pre-test and post-test to the students, the researcher conducting the try out test on March 3th 2016 to the 15 students in different class as volunteer to know whether the test valid and reliable or not. in the try out test, the researcher get 50 test for the students. To get reliability coefficient the researcher used Kuder Richardson Reliability, where the researcher administering the test only once. After that the result of scores are calculated for the correlation by using KR-20 formula. The formula showed as the following.

K-R-20 Formula

$$r_{11} = \left[\frac{n}{n-1} \right] \left[\frac{s_t^2 - \sum p_1 q_1}{s_t^2} \right]$$

Where,

r_{11} = reliability coefficient

n = number of test items

s_t^2 = standard deviation

p_1 = the right response

q_1 = the wrong response

a) Pre-test

$$r_{11} = \left[\frac{n}{n-1} \right] \left[\frac{s_t^2 - \sum p_1 q_1}{s_t^2} \right]$$

$$r_{11} = \left[\frac{25}{24} \right] \left[\frac{14.6323612 - 4.672}{14.6323612} \right]$$

$$= [1.0416666667][0.73059428]$$

$$= 0.76103571$$

b) Post-test

$$r_{11} = \left[\frac{n}{n-1} \right] \left[\frac{S_t^2 - \sum p_1 q_1}{S_t^2} \right]$$

$$r_{11} = \left[\frac{25}{24} \right] \left[\frac{13.892348 - 4.813}{13.892348} \right]$$

$$= [1.0416666667][0.85208899]$$

$$= 0.84342603$$

After calculating the reliability of the test items, the researcher classified the reliability coefficient which taken from Sudjiono (1996: 209-230), as follows:

Table 3.3. Classification of Reliability Test

Reliability Test Coefficient	Classification
0.99-1.00	More highly
0.70-0.89	High
0.50-0.69	Fair
0.30-0.49	Low

G. Normality Testing

Normality tests are used to determine whether a data set is well modeled by a normal distribution or not, or to compute how Normality testing is used to know whether the instrument has normality or not. Normality intended to show that the sample data come from a normally. To find the normality of the instrument, the researcher used one sample Kolmogrov Smirnov with SPSS.16.

The instrument can be called as has normality if Asymp sig $>$ 0.05 so that Ho (null hypothesis) is accepted and Ha (alternative hypothesis) is rejected. It was also can be concluded as follow:

Ho : The data is in normal distribution

Ha : The data is not in normal distribution

Here, the result of normality instrument computed by using SPSS 16,0 version. It can be seen as follow:

Table 3.4 Table Normality Using One Sample Kolmogrov Smirnov

One-Sample Kolmogorov-Smirnov Test

		Pre-test	Post-test
N		17	17
Normal Parameters ^a	Mean	63.7647	74.0000
	Std. Deviation	7.54594	7.68115
Most Extreme Differences	Absolute	.220	.191
	Positive	.220	.191
	Negative	-.149	-.100
Kolmogorov-Smirnov Z		.909	.787
Asymp. Sig. (2-tailed)		.380	.565
a. Test distribution is Normal.			

Based on the output from SPSS above it was known that the significance value from was from pre-test was 0.380 and from the post-test was 0.565. both value from pre-test and post-test were bigger than 0.05. The significant value on the pre-test was 0.397 and it was bigger than 0.05 ($0.380 > 0.05$). It means that H_0

was accepted and H_a was rejected and the data was in normal distribution. Then, for post-test score the value of sig is 0.565 and that is bigger than 0.05 ($0.565 > 0.05$). It also means that H_o is accepted and H_a is rejected and the data is in normal distribution. So, it can be interpreted that both of data (pre-test and post-test score) are normal distribution.

H. Data collecting method

Data collection method is the way used by researcher to collect the data. There are some methods in collecting the data to complete the researcher design. In this research the researcher uses administering test, The test which is given is vocabulary testing in the form of pre test and post test. The pre test is given to the students before the researcher do a treatment. While post-test is given to the students after the researcher do a pre-test and get the treatment, Then, the result of test would be compared between pretest and posttest score weather differences or not. If there any differences score, it showed that treatment was successful and if there was no differences score, it showed that treatment was unsuccessful.

1. Pre-Test

Pretest was given before doing an experimental research or before teaching by Alphabet Race Game technique or before the treatment. Pre-test was given to the students at the first meeting on March 8th 2016. Pretest was used to know the basic competence of the student. The researcher will give the test that contains

twenty five items and consists of 4 kinds related to the topic Expression like and dislike. The first kind is fill the blank that contains 10 items. Second is Rearrange the letter that consist 5 items. Third is multiple choices that consist 5 items. Four matching the sentence consist 5 items. The numbers of students who took the pre-test there were 17 students. Then, the result of the test is students' score. The score obtained were analyzed to determine between pre-test and post-test.

2. Post Test

After the treatment, post-test was given to the students on April 16th 2016. The test items in the post-test are almost same between pre-test. The post test is done to see final score and to know the different of the students' score before get the treatment and after they get the treatment. The goal of this test is to measure students' vocabulary after being taught using Alphabet Race Games. The researcher gave the test that contains twenty five items and consists of four kinds related to the topic Expression like and dislike. First kind is fill the blank that contains 10 items. Second is rearrange the letter that consist 5 items. Third is multiple choices that consist 5 items. Four matching the sentence consist 5 items. The numbers of students who took the pre-test there were 17 students. Then, the result of the test is students' score. The score obtained were analyzed to determine between pre-test and post-test.

I. Data Analysis

In managing and analyze quantitative data collected from the research, the researcher used quantitative data analysis by using statistical program. The researcher conducted test to the student before and after they were taught by using alphabet race games technique. The data collected (data result) was processed by comparing with the pre-test and post-test to know significant difference after given by treatment. This technique was used to find the significant difference on students' vocabulary achievement after being taught using Alphabet Race Game Technique. In this study, the researcher uses by SPSS 16.00.