

CHAPTER III

RESEARCH METHOD

In this chapter the researcher describes the research method. It consists of research design, population and sample, research variable, research instrument, validity and reliability testing, normality , data collection method, research procedure, 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 (Cresswell, 2008:3). In the design of this study the researcher used pre-experimental with quantitative approach. Pre-experimental is to know or to test the effectiveness of using Miming Game Technique in teaching vocabulary for the fourth grade students' of SDN 01 Suwaluh.

This study is conducted in pre-experimental design using quantitative approach with one group pre-test and post-test design. This study uses pre-experimental because it does not have random assignment of subject to group or other strategy to control extraneous variable. That is why in this study the researcher just takes one group or class and uses pretest and posttest to see the result of the treatment.

According to Ary (2002:22), in quantitative research uses objective measurement and statistical analysis of numeric data to understand and explain phenomena. In quantitative research there are experimental and non-experimental research designs. Experimental research involves a study of the

effect of the systematic manipulation of one variable on another variable and non-experimental research; the researcher identifies variables and may look for relationship among them, but does not manipulate the variables (Ary, 2002:24).

In this study it can be called as pre-experimental design because it uses little or no control of extraneous variables. In the one group pretest-posttest design, one group is measured or observed not only after being exposed to a treatment of some short, but also before. Pre-experimental research involves administering pre-test to the independent variable, applying the experimental treatment to the subject, and administering the posttest. The result of the treatment is found by comparing the pre-test and posttest score.

This design of this study used pre-experimental research design (*one group pretest-posttest design*) that consists of pre-test, treatment and post-test. The pre-test and post-test are given to take the student's score before and after being taught by using "*Miming Game* technique". Then both of the score were computed by using t-test to find out if there is significant influence of teaching vocabulary by using "*Miming Game* technique".

Table 3.1 the design of one group pre-test post-test

Pre-test	Independent variable	Post-test
Y1	X	Y2

Note:

Y1 : Pre-test

X : Treatment

Y2 : Post-test

The procedure of experimental research that use one group pre-test and post-test design:

1. Administering a pre-test with a purpose of measuring vocabulary achievement of fourth grade student's of SDN 01Suwaluh.
2. Applying the experimental treatment teaching vocabulary by using "Miming Game Technique" to the subject (fourth grade students at SDN 01Suwaluh).
3. Administering a post-test with a purpose of measuring vocabulary achievement of fourth grade students at SDN 01Suwaluh.

B. Population, Sample and Sampling

1. Population

A population is defined as all members off any well-defined class of people, event or object. A population is whole element of the object as a data source with a certain characteristic in a research (Tanzeh, 2009:91). It means that population is all subject of the research.

The population of this study was the student of SDN 01Suwaluh that consists of 68 students. According to Ary (2002:163) population is all members of any well defined class of people, events of objects. A population is a set (or collection) of all elements possessing one or more attributes of interest stated by Arikunto (2006:108).

2. Sample

Doing selecting sample is very important step in conducting a research study. Sample is part of population of the object research (Arikunto, 2006:118). Sample is also as a way the researcher selects number of individuals as a sample which represents the population. According to Ary (2006:163) a sample is a person of population. It means that a good sample must be representative of the entire as possible, so that the generalization of the sample as true as population. Based on the statement above in this study, the sample in this researches taken from one class from the fourth grade which consists of sixteen students at SDN 01 Suwaluh in academic year 2016/2017.

3. Sampling

Sampling is the process of selecting a number of individuals for a study in such a way that the individuals represent the large group from which they were selected, L.R Gay (p: 123). The purpose of sampling is to gain information about a population; rarely is a study conducted that includes the total population of interest as subject (Gay, 1992:123).

In this study, the researcher used purposive sampling technique. Purposive sampling technique is a type of non probability sampling where

the researcher consciously select particular elements or subjects for addition in a study so as to make sure that the elements will have certain characteristics pertinent to the study. And in this study, the fourth grade students of SDN 01 Suwaluh were taken because among other classes the students of the fourth grade had average proficiency.

C. Research Variable

A variable is everything that will become that object of research or the influencing factors that will be studied. Variable is everything to which the researcher expects to find the answer (Arikunto, 2006:118).

The variables examined in this experimental study are two classifications:

a) Independent variable

Independent variable is called causing variable (Arikunto, 2006:119). Independent variable is variable which is manipulated by a researcher deliberately. In this research, the independent variable is teaching vocabulary by using “Miming Game Technique”.

b) Dependent variable

Dependent variable is effected variable (Arikunto, 2006:119). Dependent variable is a variable that enrage in function relationship influence by independent variable. In this research, the dependent variable is student’s achievement vocabulary.

D. Research Instrument

Fraenkel (1996) stated that “instrument is the device the researcher uses to collect data. Research instrument is the tool of collecting data that should be valid and reliable. Research instrument can be valid if the

instrument can measure what will be measured. And the instrument of this research is test.

Test is a series question, exercise or other means which are used to measure the skill, knowledge, intelligent, ability or talent that have by individual or group. Thus a test is a method to gain the data by giving some question to the respondent Arikunto (2006:127).

According to Hornby (1955:1233) test is a short examination of knowledge or ability. Consisting of questions that must be answered activities that must be carried out. According to Longman, a test is any procedure for measuring ability, knowledge, and performance.

In this study, the researcher used achievement test. Achievement test is test that is used to measure the process that students making after learn something (Isnawati, 2011:14). This test used to measure the students achievement in vocabulary before and after they taught by using “Miming Game technique” in SDN 01 Suwaluh.

Before conducting test, the researcher does some steps to developing the test. The steps are:

1. Reviewing the literature

In reviewing the literature, the researcher was reviewed the material based on the lesson plan (RPP), syllabus and book of Elementary School.

2. Drafting instrument

The researcher in drafting the instrument make the first draft test based on the reviewing the material that the researcher do before.

3. Validating instrument

After making draft test, then the researcher submit the test to the teacher or expert to get the expert validation if there is some correction.

4. Revising

In revising the researcher revised the uncorrect or inappropriate questions, wrong structure and grammatical error in the test after got the validating from the teacher or expert.

5. Trying out of instrument

After finished in revising the test, then the researcher trying out the test to the fourth grade students from difference school with have the same characteristics. Based on the result that the researcher got in trying out the test, the researcher can know the item quality of the test.

6. Reliability

The researcher knows the reliability of the test after trying out the test and using the statistical calculation of *Pearson Product-Moment* in IBM SPSS Statistic 22. If the result is not reliable so the researcher revises the test again until get reliable.

7. Final draft of instrument

This is the last step in developing the test after all of the steps were done, and the tests have validity and reliability. So, the test is ready to gain the data.

E. Validity and Reliability Testing

1) Validity

In the experimental study, a researcher must check the validity and reliability of the instrument that has been made to determine such instruments valid or not. Validity (in testing) is the degree to which a test measure what it is supposed to measure, or can be used successfully for the purpose for which it is intended (Richard, 1992:296).

According to Heaton (1989:159) the validity of a test as the extent to which it measure what is supposed to measure and nothing else. To measure whether the test has a good validity, the researcher analyzed the test from content validity, face validity and construct validity.

1. Content validity

A test is said to have content validity if its contents constitutes a representative sample of the language skills, structures, etc. In order to judge whether or not the test has content validity, we need a specification of the skills or structure being tested. Comparison of test specification and test content is the basis for judgments for content validity. The researcher made the test based on course objectives on the syllabus and textbooks of fourth grade of SDN 01 Suwaluh. Therefore, this test is valid in the term of content validity

The content validity in this research can be showed as follow:

Table 3.2 Cotent Validity of the objective of syllabus

Standard competence	2. Menggunakan instruksi dan informasi sangat sederhana dalam konteks kelas.
Basic competence	2.1 Merespon dengan melakukan tindakan sesuai instruksi secara verbal dan berterima dalam konteks kelas.
Indicator	1. Siswa dapat menyebutkan – macam – macam school enviroentment. 2. Siswa dapat mencocokkan terjemahan kosa kata dengan nama kegiatan school environment dan profession. 3. Siswa dapat menyusun kata acak.
Technique	Multiple choice, Matching words and Arrange word
Instrument of test	Pretest Posttest

Table 3.3 Content Validity of Test item

Competence indicator	Test items	
	Pretest	Posttest
1. Siswa dapat menyebutkan macam – macam school enviroentment and profession.	Part A Number (1, 2, 3, 4, 5, 7, 9, 10, dan 12)	Part A Number (1, 2, 6, 7, 9, 10, 11, 12, 13, 14 dan 15)
2. Siswa dapat mencocokkan gambar dengan nama kegiatan school environment and profession.	Part A Number (6, 11, dan 14) Part B Number (1-10)	Part A Number (3, 4, 5 dan 8) Part B Number (1-10)
3. Siswa dapat menyusun kalimat acak	Part A Number (8) Part C (1, 2, 3, 4 dan 5)	Part C Number (1, 2, 3, 4 dan 5)

2. Face Validity

A test is said to have face validity if it looks as if it measures what it is supposed to measure. For example, a test which pretended to measure pronunciation ability but which did not require the test-takers to speak might be thought to lack face validity. This is true even if the test's construct and criterion related validity can be demonstrated. Face validity is hardly a scientific concept, yet it is very important. A test which does not have face validity may not be accepted by test takers, teachers, education authorities or employers. In this study, the researcher used face validity by consulting with the advisor and the teacher.

3. Construct Validity

A test is said to have construct validity if it can be demonstrate that it measures just the ability which is supposed to measure. The word 'construct' refers to any underlying ability which is hypothesized in a theory of language ability. Brown (2004:25) mentioned that a construct is any theory, hypothesis, or model that attempts to explain observed phenomena in our universe of perception. In this research, the test had construct validity since it contained thirty questions consists of fifteen multiple choice, ten matching the pictures and five arrange sentences. Those questions are to measure students' component in vocabulary.

2) Reliability

Reliability is a necessary characteristic of any good test for it to be valid at all and a test must be reliable as measuring instrument. According to Ary et al (2010: 236) the reliability of a measuring instrument is the degree of consistency which is measures whatever it is measuring. Creswell (2008: 169) explain that a goal of good research is to have measures or observations that are reliable. This quality is essential in any kind of measurement. So, the reliability is important part to know the test is good or not in using the test to measure students master in vocabulary of this research. A reliable test is consistent and dependable. Thus, if the students are given the same test on two different occasions, the test should yield similar result and the more similar the scores are, the more reliable the test is.

The test consist of 25 multiple choice, 10 matching pictures and 10 arrange word and the researcher try out the pre-test and post-test in once. The data of student's score after finishing of try out can be seen in table 3.4 below.

Table 3.4 The Student's Score in Try Out

No	Name	Pre-Test	Post-Test
1	IRY	87	53
2	AF	73	39
3	AFSE	63	47
4	CA	79	33
5	RAIY	79	31
6	SB	79	49
7	GPA	79	39

8	CP	81	33
9	TCC	59	35
10	NA	67	39
11	SPA	67	31

Based on the result above, the researcher consider the reliability coefficient use the formula from Kuder Richardson Reliability or KR-20, which is based on the proportion of correct and incorrect responses to each of the items on a test and the variance of the total scores (Ary et al, 2010:245). The researcher uses KR-20 Formula by calculating the data using Microsoft Excel. According to Vansickle (2015: 4) the classification of reliability test is:

Table 3.5 The Criteria of Coefficient Correlation

Reliability Test Coefficient	Classification
Less than 0.20	Poor
0.20 to 0.40	Fair
0.40 to 0.60	Moderate
0.60 to 0.80	Good
0.80 to 1.00	Very Good

Based on table above the researcher got value of coefficient reliability was 0.639 for tryout pre-test instrument and the value of coefficient reliability was 0.624 for tryout post-test instrument.

According to Ary (2010: 241) said if the reliability coefficient is near 1.00, the instrument has relatively little error and high reliability. From this statement, the researcher could be conclude that both instrument in pre-test and post-test was reliable, so it can be used as appropriate instrument to measure student's achievement in vocabulary mastery. However, to improve the reliability some revisions were done for the test items.

F. Normality Testing

Normality test are used to determine whether a data set is well-modeled by a normal distribution or not. Normality test is intended to show that the sample data come from a normally distributed population. To know the normality, the researcher used One-Sample Kolmogrov-Smirnov test with SPSS 16.0. The hypotheses for testing normality are:

- a. H_0 : Data is in normal distribution
- b. H_a : Data is not in normal distribution

The hypotheses for normality testing explain that the data is normal distribution if H_0 is accepted and the data is not in normal distribution if H_a is accepted. The H_0 is accepted when the significance value is higher than 0.05 ($\alpha = 5\%$), while H_0 is rejected when the significance value is lower than 0.05 ($\alpha = 5\%$). The result for normality testing can be seen the table (3.6) as follows:

Table 3.6 One-Sample Kolmogorov-Smirnov Test

One-Sample Kolmogorov-Smirnov Test		Unstandardized Residual
N		11
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	7.98053187
Most Extreme	Absolute	.138
Differences	Positive	.131
	Negative	-.138
Kolmogorov-Smirnov Z		.456
Asymp. Sig. (2-tailed)		.985

a. Test distribution is Normal.

Based on the output of One-Sample Kolmogorov-Smirnov Test in SPSS 22.0 at table 3.6 above, it is known that the significance value is 0,985. As stated previously, the hypotheses for normality testing say that the data is in normal distribution if H_0 is accepted and on the contrary, the data is not in normal distribution if H_a is accepted. In this case, the H_0 is rejected when the significance value is lower than 0.05 ($\alpha = 5\%$), while H_0 is accepted when the significance value is higher than 0.05 ($\alpha = 5\%$). Based on the data above, the significance value of the data is 0.200 and it is higher than 0.05 ($0.200 > 0.05$). It means that H_0 is accepted and H_a is rejected. It can be interpreted that the data is in normal distribution. From the interpretations above, it can be concluded that the instruments in this research are in normal distribution.

G. Data Collecting Method

Data is the important role in scientific research. The data of collecting method is the method to obtain the data in the research. The purpose of conducting the method of collecting data in scientific research is to get the result of the result. There are some methods in collecting the data. In this study the researcher uses test as the method of collecting data. In here, the researcher used pre-test and post-test.

The researcher administered both pre-test and post –test. The researcher administered pre-test before treatment. And post-test was administered by the researcher after doing treatment. Then, the researcher compare the result of pre-test and post-test. The method of collecting data was clarified as follow:

1.Pre-test

Pre-test provides a measure on some attribute or characteristic that someone assesses for participant in an experiment before they receive a treatment (Wiersama, 1911: 106).

Pre-test was given to the students in the first meeting before treatment. It was conducted to know the students score in vocabulary. Purpose of the test is given to know how far the students ability in vocabulary mastery. Pre-test comprised 30 items, form of the test are 15 multiple choices, 10 matching picture and 5 arrange sentences.

2.Post-test

Post test provides a measure on some attribute or characteristic that someone assesses for participant after a treatment (Wiersama, 1911:

106). After gaining score in pre-test and conducting treatment, the researcher administered post-test to know how effective the treatment and to measure their ability after treatment process. Post-test was conducted to know the final score and to know the students' difference competence before and after they get treatment.

A post test was given in order to know the scores of the students after they were taught by using Miming Game. Time allocation is 50 minutes and conducted on November 26, 2016. This test was used to measure the students' mastery after they were given treatment.

H. Research Procedures

Here the procedures of pre-experimental research that use one group pre-test and post-test design:

1. The researcher administered pre-test on November 14th 2016 to know students' vocabulary achievement before being taught by using Miming Game technique.
2. After conducting the pre-test, the researcher gave treatment for the students. The treatment conducted four times. The first treatment conducted on November 16th 2016, the second on November 19th 2016, the third on November 22th 2016, and fourth treatment on November 25th 2016. The treatment is applying Miming Game technique in teaching vocabulary which the students finding students vocabulary mastery. The materials took from syllabus and LKS of fourth grade.

In this research, there are some steps to conduct a treatment in the classroom. Those are:

- a. The first, the researcher explains about the Miming Game and way to doing Miming game in learning activity.
 - b. Second, the researcher give some vocabulary that will be demonstrate by the researcher.
 - c. Then, the researcher give example of Miming Game that appropriate with the vocabulary was the researcher given.
 - d. After that, the researcher divided the students to four group. Each group have one leader, the assignment of the leader is answer the researcher act.
 - e. And the last, the students can guess by the researcher act.
3. After conducting the treatment to the students. the researcher give administered the post-test on November 26th, 2016. It was given to them to know their vocabulary achievement after the treatment. The researcher wanted to know whether there is any significant difference in the students' vocabulary mastery after they gave the treatment by using Miming Game technique.

I. Data Analysis

Suharsini and arikunto (1996: 148) state that quantitative data is the technique to analysis and count the data. It means that the technique of quantitative data analysis is the process of data is shape by number.

To investigate the effectiveness of using Miming Game in this research, the data were analyzed from students' score in pre-test and post-

test. The data which were gained from those two occasions, then, were analyzed by using Paired Samples Test in IBM SPSS Statistics 22. If the result of t_{table} was bigger than t_{test} at the level of significance 0.05, the null hypothesis could not be rejected indicating that Miming Game was not effective to increase students' vocabulary mastery. By contrast, if t_{test} was bigger than t_{table} at the level of significance 0.05, the null hypothesis could be rejected indicating that Miming Game was effective to increase students' vocabulary mastery.

J. Hypothesis Testing

To know the effectiveness of using Miming Game in this research, the researcher is analyzing the data of students' vocabulary test (pre-test and post-test) and score of their vocabulary test by using statistic calculation. If the result of t_{table} is bigger than t_{test} at the level of significance 0.05, the null hypothesis cannot be rejected indicating that Miming Game is not effective in increase students' vocabulary mastery. By contrast, if t_{test} is bigger than t_{table} at level of significance 0.05, null hypothesis can be rejected indicating that Miming Game is effective in increase students' vocabulary mastery.