

CHAPTER III

RESEARCH METHODOLOGY

A. Method of the Research

This research used experimental research. There were two groups in this research. The first is control groups and the second is experimental groups. The control group did not received the treatment, and the experimental group is given the treatment by the researcher. The treatments were given by using guessing game in teaching leaning process. Experimental research is a way to find the casual relation between two factors which is done accidentally it is cited by (Arikunto, 2010:9). In the other words, experiment tries to compare one or more groups which are given the treatment, and other groups that is not given the treatment.

In this study, there were experimental and control class. The experimental class was use by using guessing game while the control class was use by using conventional way as usually do by the teacher.

B. Place and Time of the Research

1. Place of the research

This research was conducted at the eighth grade of MTs Ma'arif Nu 1 Kembaran in academic years 2016/2017

2. Time of the Research

Time of the Research was conducted through the schedule below:

Table 1

Table the schedule of the research

No	Activities	September 2016				October 2016				November 2016				December 2016				Januari 2016			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1.	Making Proposal	√	√	√	√																
2.	Making Instrument					√	√	√	√												
3.	Collecting Data									√	√	√	√								
4.	Analyzing data and Making Report													√	√	√	√	√	√	√	√

C. Subject of the Research

1. Population

Arikunto (2010:173) state that population is all subject of the research. This study was conducted to the Eighth grade Students of MTs Ma'arif Nu 1 Kembaran in Academic Year 2016/2017.

2. Sample

Sample is part of the population which is researched (Arikunto, 2010:174). The sample of this research was VIII A as experimental group and VIII C as control group, two classes were chosen as the sample of the research. the first class was VIIIA as experimental group consists of 28 students get guessing game as a strategy in teaching english vocabulary and the second one was VIII B as control group consists of 28 students which does not get treatment.

3. Sampling Technique

Sampling technique is the technique of getting the sample. In this study, the researcher used the sampling technique. It is cited by (Arikunto , 1998: 130) in (Wening, 2015:21). Thus random sampling by using lottery in this research. The two groups would become an experimental group and control group.

D. Technique of Collecting Data

In this research the writer used two kinds of test. They are pre-test and post-test. Test is a list of questions or exercises which is used to measure skill, knowledge and intelligent or talent own by individuals or group it is cited by (Arikunto, 2010:192-193).

a. Pre-test

The pre-test was used to know the students's ability of each group. This first test was given before the writer applies the teaching vocabulary by using Guessing Game. The numbers of the test items are 30 items consisting of 20 items of multiple choice and 10 items of matching test.

$$\text{Score} = \frac{\text{right answer}}{\text{number of item}} \times 100$$

b. Post-test

The post-test was used to measure the effect of a certain treatment, in this case the researcher used multiple choice and matching tests. This test was given after the writer applied the teaching vocabulary by using a guessing game. Before getting the data, the test should be tried out to know the validity and reliability. Those validity and reliability will be computed by the following formula. The numbers of the test items are 30 items consisting of 20 items of multiple choice and 10 items of matching test.

From the score of this test, the writer found out the effectiveness of using Guessing Game as a technique in teaching English vocabulary of the students. The result of the scoring then was compared with pre-test. In this case, the writer knows how far was the effectiveness of Guessing Game as a technique in teaching English vocabulary of the students.

$$\text{Score} = \frac{\text{right answer}}{\text{number of item}} \times 100$$

E. Technique of Analyzing Instrument

1. Validity Test

The validity of a test is a measurement that indicates the level of validity of an instrument is valid if it can measure what it is intended to measure. The writer will measure the validity of the test by using the following formula:

$$= \frac{\quad}{\quad}$$

(Arikunto, 2010:213)

$\sum x$: the sum of score of distribution x (compute the total number of students who answer correctly in one question)

$\sum x^2$: the sum of square score of distribution x

$\sum y$: the sum of score of distribution y (compute the total number of all correct and all the students)

$\sum y^2$: the sum of square score of distribution y (square the correct answer of students one by one, then total them)

$\sum xy$: The sum of multiplication between distribution x distribution y (the multiplication between the score of students and total score of students)

rx : the sum of the product of paired x dan y distribution

N : the total number of students

To compute the calculation above, the steps are as follows:

a. Finding X

In this step, it must be computed by the total number who answers correctly in one question.

b. Finding Y

In this step, it must be computed by the total number of all the students.

c. Finding $\sum xy$

In this step, it must be calculated by multiplication between the score of students and the total score of all the students.

d. Finding $\sum x^2$

In this step, it must be squared by the score of the correct answer each student then the total them.

e. Finding $\sum y^2$

In this step, it must be squared by the score of the total correct of questions of each student then the total them.

To see whether or not test is valid, it can be seen from the r table. If the counted score is higher than r-table it means that the question of the test is valid.

Categories:

$r_{xy} \geq 1\% = \text{very significant}$

$r_{xy} \geq 5\% = \text{significant}$

2. Reliability Test

According to Arikunto (2010:221) reliability is the consistency of the test items. It means that when the test is already administered to the students of the research on different action, the result will be consistent. To find out the reliability of the instrument, the researcher will use K-R-20 formula as follows:

$$\left[\frac{\sum y^2}{k} - \frac{(\sum y)^2}{N} \right] \div \left[\sum x^2 - \frac{(\sum x)^2}{N} \right]$$

Explanation:

r_{11} : the instrument reliability

k : the total items

V_t : the total of varians

Σpq : the sum of multiplication between the number of subject who get the score 1 (answer correctly) and the number of subject who get the score 0 (who answer correctly).

(Arikunto, 2010:231)

Before using the formula, the writer was used some steps as follows:

a) Determining the total variant (V_t)

It is used to determine the total variant of the students' score; the writer uses a formula, as follows:

$$= \frac{\Sigma x^2}{N}$$

(Arikunto, 2010:227)

Where

V_t = the variant of total score

Σx = the sum of students' total score

Σx^2 = the sum square of students' total score

N = number of students

According to Arikunto (2002:245), the criterion of instruments' reliability

can be classified as follow:

$r_{11} \leq 0,02$ = lowest reliability

$0,20 \leq r_{11} \leq 0,40$ = low

$0,40 \leq r_{11} \leq 0,60$ = enough

$0,60 \leq r_{11} \leq 0,80$ = high

$0,80 \leq r_{11} \leq 1,00$ = highest

b) Calculating Σpq

In calculating Σpq , the writer will use some steps:

1) Determining P

$$\mathbf{P = \underline{\hspace{2cm}}}$$

2) Determining q

$$\mathbf{q = 1 - p}$$

3) Multiplying

$$\mathbf{p \cdot q}$$

4) Entering the formula

After finding Σpq , V_t and k then enter it formula. After knowing the result then writer consults the r table. If the r counted is higher than the r table it means that test is reliable. Result of validity and reliability can be seen in appendix.

$$\mathbf{[\underline{\hspace{1cm}} \underline{\hspace{1cm}}]}$$

3. Item difficulty

The finding of item difficulty in this research was aim to know the level of difficulty of the test given to the students. In finding the item difficulty the researcher will use the formula as follows:

$$P = \frac{B}{J} \times 100\%$$

Explanation:

P = the index of difficulty

B = the number of students who answer correctly

J = the number of students taking the test

(Arikunto, 2013:176)

Arikunto (2010:210) divides the criteria of difficulty as follows:

0,00 to 0,30 = difficult

0,30 to 0,70 = fair

0,70 to 1,00 = easy

F. Technique of Analyzing Data

1. Mean

Mean is used to know the level of vocabulary mastery after the students were given treatment. The percentage scores of class found by the quotient of total deviation and number of students in the class. There are two classes mean values which should be calculated:

a. Means of Control Class

To find out the mean of deviation of control class (M_y):

- The Pre-test score decreases the post-test score of each students.
- Then the writer counts the total of deviation ($\sum y$).
- Finally, the writer counts the total of the students in control class is divided into the number of students in that class.

$$M_y = \frac{\sum y}{n}$$

b. Means of Experimental Class

To find out the mean of deviation of experimental class (M_x):

- The Pre-test score decreases the post-test score of each students
- Then the writer counts the total of deviation ($\sum x$)
- Finally, the writer counts the total of the students in experimental class is divided into the number of students in that class

$$M_x = \frac{\sum x}{n}$$

(Arikunto, 2010:356)

Explanation:

M_x : the mean of score to experimental group

M_y : the mean of score to control group

$\sum x$: residual of the score to the control group

$\sum y$: residual of the score to the experimental group

N : total number of students

c. Calculating the sum of squared deviation of each group

1. Experimental Class

$$\sum x^2 = \sum (x - \bar{x})^2 + \frac{(\sum x)^2}{N}$$

2. Control Class

$$\sum y^2 = \sum (y - \bar{y})^2 + \frac{(\sum y)^2}{N}$$

Where:

$\sum x^2$: the sum of square deviation in experimental class

$\sum y^2$: the sum of square deviation in control class

2. T-Test

T-test was used to analyze the data. This Technique was used to find out whether using Guessing game for teaching vocabulary is effective:

$$t = \frac{\bar{x} - \bar{y}}{\sqrt{\frac{s_p^2}{n_x} + \frac{s_p^2}{n_y}}}$$

(Arikunto, 2010:354)

Explanation:

Mx : Mean of experimental class

My : Mean of control class

$\sum x^2$: The square deviation of experiment class

$\sum y^2$: The square deviation of control class

Nx : The total number of students of experimental class

Ny : the total number of students of control class

And after that, calculating degree of freedom ($d.f$) by using formula:

$$d.f = (\quad + \quad - 2)$$

Explanation:

$d.f$: degree of freedom

Nx : the number of students in experimental class students

Ny : the number of students in control class students

After the researcher finished calculated the result of t-test, then the researcher compare to T-test of T-table. If the result is comparison show the T-test is higher than T-table, it means that there is a positive effect of guessing game as a media for teaching vocabulary for junior high school. So, the hypothesis is accepted. On the other hand, if it is found that T-test is lower than t-table, the hypothesis is not accepted.

