

CHAPTER III

RESEARCH METHOD

A. Research Design

This research was conducted by using experimental research, it is quantitative method. And the design of this research is quasi-experiment design that consist of two classes: control class and experiment class. Experimental class was the class taught vocabulary using spelling bee game. Therefore, Creswell points out that “an experimental design is the traditional approach to conducting quantitative research”.

The researcher used pre-test and post-test design in both experimental and controlled class. The aim was to find out of the students vocabulary mastery before and after of spelling bee game in teaching English vocabularies.

1. Quantitative Data

To analyzed quantitative data which were in form of test I, II, and III, the researcher found students' score by using this formula:

$$P = \frac{F}{N} \times 100 \%$$

(Adopted from Sudjana, 2002)

P = Percentage of students' vocabulary mastery successfulness.

F = Number of students who are able to reach vocabulary mastery.

N = Total number of students.

That is given to both classes after the treatment. The test have 10 questions about vocabularies spell item consist alphabet, spell this is my classroom!

Exemple:

CLEAN : si-el-i-ei-en

1. Blackboard :
2. Table :
3. Chair :
4. Cupboard :
5. Broom :
6. Door :
7. Pencil :
8. Bag :
9. Marker :
10. Window :

Furthermore, to know the category level of the students' vocabulary mastery this following theory was applied.

The teacher wrote some vocabulary on white board, after that the teacher asked the students to spell the vocabulary given by the teacher, and then the teacher give

assessment spelling, pronounce and students were asked what is the meaning of the vocabulary.

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And the result of pre-test in both the classes were compared. This was a model of Quasi-Experimental Design, exactly Non-equivalent Control Group Design:

Table 3.1 Nonequivalent comparison group design

E	O ₁	X	O ₂
C	O ₃		O ₄

Explanation:

E : Experimental class

C : Controlled class

O₁ : Result of Pre-test (in experimental class)

O₃ : Result of Pre-test (in controlled class)

X : Treatment that will be given for experimental class by using Spelling Bee Game

O₂ : Result of Post-test (in experimental class)

O₄ : Result of Post-test (in experimental class)

Based on the figure 3.1, there were two classes which were divided into an experimental class and controlled class. Both of them did pre-test (O₁ and O₃). The pre-test given in order to get to know students, prior knowledge before giving the treatment. Next, the treatment (X) was applied to the experimental group and post-test (O₂ and O₄). Was given to both groups. Post-test was applied in order to know students' achievement of the two classes. The score of both groups were compared to see the improvement.

2. Research Variable

There were two variables of this experiment research. They were Independent variable and dependent variable: Firstly, the independent variable was Spelling Bee Game, which were the teaching aided that helped the students to enhance their English, especially in vocabulary. Secondly, the dependent variable was the students vocabulary. This research showed that Spelling Bee Game affected the students' vocabulary mastery or not.

B. Research Setting

The research location is at MTs Negeri 4 Hulu sungai tengah. It is located at Jln. Sarigading, kecamatan Pandawan, Kabupaten Hulu Sungai Tengah.

C. Population and Sample

1. Population

The population of this research is the seventh grade students at MTsN 4 Hulu Sungai Tengah. The seventh grade students of this school are 74 students, and they are divided into two classes (VIIA, and VIIB). For selecting samples, the writer find recommendation class from the English teacher at this school. The researcher would take two classes as the sample to get representative data. The researcher would take two classes as sample and divided into two groups, experimental class and controlled class.

Table 3.1 Class of the research

No	Class	Number
1	Experiment class (VII B)	37
2	Control class (VII A)	37

2. Sample

The technique samples, the writer find out recommendation class from the English teacher at this school. Because the samples in this study are lack of vocabulary, they are hard to be controlled in the class, and they are difficult to understand a material easily. It means that this research uses purposive sampling. According to Fraenkel, Wallen, and Hyun (2012, p.100) about purposive sampling, they said investigators use personal judgment to select a sample based on prior knowledge of a population and the specific purpose of the research. In the research, the writer engage 74 students at fourth

grade as the samples, 37 students are experimental group, and 37 students are controlled group.

D. Instrument of the Research

The instrument of the research was test which had purpose to figure out a number of students' vocabulary mastery. The test would give through pre-test and post-test. The test was vocabulary which consists of 10 points pre-test and post-test. The pre-test intended to find out the students' achievement of English vocabulary while the post-test was intended to find out the students' achievement of English vocabulary after using spelling bee game the treatment was given.

The writer analyses the data using comparative technique between the control and experiment class. The score of experiment class and control class in pre-test will be compared. So, the writer use formula to determining mean of variable.

The researcher uses pre-test and post-test to getting the data.

1. Pre-test provides a measure on some attribute or characteristic that you asses for participant in an experiment before they receive treatment (Creswell, 2012:297). Pre-test can be called a test before learning has occurred. In this research, this test will give for pre activity did to know how far students' competence before using spelling bee games.
2. Post-test is a measure on some attribut or characteristic that is assed for participant in a experiment after a treatment (Creswell, 2012:297). Post-test is given after learning has occurred or is supposed so have occurred. It is given after a lesson or a period of instruction to

determine what the students have learned. In teaching, comparison of pre-test and post-test result measure the amount of a progress a learner has made. The question will be different from the pre-test but still has a same meaning. Post-test was given after the students were taught vocabulary using spelling bee games. It was done to know the students' vocabulary mastery after they get the treatment. In this research, the researcher used pre-test and post-test in getting the data. Pre-test which is given before the treatment, and post-test is given test writing after treatment. The test was in the forms of essay 20 items. After getting the data, the researchers can evaluate the assessments that are given to the students. The researcher accumulated the result of pre-test and post-test. From this, the researcher observed whether spelling bee games is appropriate or not as technique to develop the students' vocabulary mastery and by calculating the score from both tests the writer can know how far the effectiveness of spelling bee games.

E. Technique of Procedure

The techniques of data collection used in this research were oral and written test.

1. Written Test

This technique used to find out how significant the using spelling bee game of the students after and before given treatments. In this way, the writer asked of the students to write some vocabulary test. Twenty points were chosen because they can cover enough all of the indicator that will be tested to measure

students' vocabulary mastery through spelling bee game. Every true answer has 10 points. If all of the answer is true, the students get 100 points. The test applied in two stage; pre-test and post-test to both classes; control class and experiment class.

F. Data Collecting Procedure

In collecting the data, there were some steps were taken by the researcher, they are:

1. Preliminary Visit

The researcher visited the school to get information about teacher and students as participant, to gain information, the researcher asked the administration officer.

2. Visiting the headmaster

The researcher asked the permission to headmaster MTsN 4 Hulu Sungai Tengah by giving permission letter.

3. Visiting the English teacher

After getting permission, the researcher met the English teacher for asking his help and guidance in conducting the research.

G. Data Analysis Procedure

After the test given to the students in the pre-test and post-test, to find out the result of students' vocabulary by using spelling bee game in experimental class and without using spelling bee game in control class. Additionally, technique of data analysis in this researcher using t-test. T-test is used to find out the

differences between students' experiment and control class. Before conducting the t-test, normality and homogeneity test are measured.

1. Testing requirement

a. Normality Test

Before the researcher calculated the value of t-test, the researcher had to analyze the normality and homogeneity of the data. The researcher used SPSS to test the normality. In SPSS, there are two kind normality test: Kolmogorov Smirnov and Shapiro-Wilk, Komogorov and Liliefors. In this research, writer used it because sample number was included in small group or ≤ 30 .

The criterion of determining the normality of the data was:

Hypothesis:

H_0 : significant Score > 0.05

H_1 : significant Score < 0.05

If respondents ≤ 50 , the normality test uses Kolmograv Smirnov

If respondents ≥ 50 , the normality uses Shapiro Wilk

a. Homogeneity Test

The next step was calculating the homogeneity of data. That purpose of this calculation to see the similarity of the condition of two papulation. The score of this test should be above 0,05 in order to have the homogenous data. Technique of data analysis used in the research is t-test. T-test used in data analysis is to compare the scores between control and experiment classes. The data collect through the test was analyzed by using the following steps:

1. Tabulated and classify the students score into the following clarification The score of the test were classified into seven levels as follows:

No	Range of Score	classification
1.	95-100	Excellent
2.	85-90	Very good
3.	75-80	Good
4.	65-70	Fairly good
5.	55-60	Fair
6.	45-50	Poor
7.	0-40	Very poor

2. The mean score of the students' find out by means following the formula:

$$M = \frac{\Sigma}{N}$$

M = The mean of differences

Σ = The total of differences

N = number of cases

(Gay, 2006)

3. Finding out the standard deviation by applying this formula:

$$SD = \sqrt{\frac{SS}{N}}, \text{ where } SS = \sum X^2 - \frac{(\sum X)^2}{N}$$

Where:

SD = Standard deviation

SS = The sum of square

N = Total number of the subjects

$\sum x^2$ = The sum of all square; each score is squared and all the squares are added up

$(\sum X)^2$ = The square of the sum; all the scores are added up and the sum is square, total

(Gay,2006)

4. The formula used in finding out the difference between students' score in Pre-test and Post-test

$$T = \frac{x_1 - x_2}{\sqrt{\left(\frac{SS_1 + SS_2}{n_1 + n_2 - 2}\right) \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

Where:

T : test of significance

X₁ : mean score of experimental group

X₂ : mean score of controlled group

SS₁ : sum square of experimental group

SS₂ : sum square of controlled group

N₁ : number of students of experimental group

n_2 : number of students of controlled group

2 : the number of class involved

1 : constant number

(Gay, 2006)