

CHAPTER III

RESEARCH METHOD

A. Research Design

This research is quantitative in nature. The researcher uses experimental research to research the study. Experimental research is an attempt by the researcher to maintain control over all factors that may affect the result of an experiment.

The researcher used pre test – post test control class design with one treatment as the design for this study.

This is the scheme:

$$\begin{array}{l} E = O_1 \quad X \quad O_2 \\ C = O_3 \quad O_4 \end{array}$$

Where:

Adopted from Arikunto.¹

E = experimental class

C = control class

O1 = pre-test for experimental class

O2 = post test for experimental class

O3 = pre-test for control class

O4 = post test for control class

X = treatment by nursery rhymes

An experimental research is divided into two groups: experimental group and control group. An experimental group receives and uses a new treatment while control group received without treatment. This research uses nursery rhymes as independent variable to facilitate students' pronunciation of diphthongs. So, the researcher uses an experimental research as an effort to develop English teaching learning process and to solve the problem faced by the students in learning English especially in pronunciation of diphthongs.

¹ Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktik*, p.86.

B. Source of Data/ Setting

Documents and file such as teacher's lesson schedule are source of data. This study was conducted in SD N 01 Tembok Luwung Tegal. It located at Tembok Luwung- Adiwerna- Tegal. The subject of this study was the fifth grade students of SD N 01 Tembok Luwung Tegal in the academic year of 2012/ 2013. This study conducted in second semester.

C. Population and Sample

1. Population

According to Arikunto, population is all the subject of the research.² In this study, population is the fifth grade students of SD N 01 Tembok Luwung Tegal in the academic year of 2012/ 2013. There are two classes, V-A and V-B. They consist of 67 students. The population of the students was distributed as:

- a. Class V-A with the number of 34 students.
- b. Class V-B with the number of 33 students.

The writer wanted to know the effectiveness of nursery rhymes as a media to teach pronunciation of diphthongs. It makes students exited. It is more interesting to the students and makes them enjoy in study. The choosing of population in fifth grade because, that the fifth students are ready to participants.

2. Sample

Arikunto said that sample is a representative of population which is studied. It is subject of population.³ So, here there two samples in this study, experimental class and control class. Experimental class was taken from V-A which was taught by mean of nursery rhymes and control class was taken from V-B which was taught by mean of non- nursery rhymes.

D. Variable and Indicator

According to Fred D. Kerlinger as cited by Arikunto, that all experiments have 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

² Suharsimi Arikunto, *Prosedur Penelitian; Suatu Pendekatan Praktik*, (Jakarta: PT. Rineka Cipta, 2006), p. 173

³ Suharsimi Arikunto, *Prosedur Penelitian; Suatu Pendekatan Praktik*, (Jakarta: PT. Rineka Cipta, 2006), p. 174

variable in experiments).⁴This research, that used nursery rhymes as media in the teaching of pronunciation, has two variables. They are independent variable (x) and dependent variable (y). Those variables were:

1. The independent variable (x)

Independent variable is the variable that the experimenter changes within a defined range. The independent variable in this research was the use of media in teaching learning process for both groups. The experimental group used nursery rhymes to teach to diphthongs pronunciation while the control group without the aid of nursery rhymes.

2. The dependent variable (y)

The dependent variable is the variable that measures that improves of the independent variable. The dependent variable in this study was the students' achievement in the test score.

The indicator of the students have good pronunciation are the students able to pronounce the diphthong pronunciation of some vocabularies.

E. Data Collection Technique

There are two instruments in this research. They are test and documentation. The test used here is oral test. Test is used to investigate students' achievement after being taught. In this case the form of test question is word. The researcher asked students to pronounce based on the words that given.

Documentation is also an important part in this research. The documentation is score transcript of English score on first semester, students' pronounce recording. Transcript of score is used to determine the control and experimental class.

To make this research successful, the writer used some ways in collecting data, the researcher attempted to employ this following methods, they are:

1. **Test**

Test is instrument or procedure that used in measuring and evaluating.⁵

The purpose of testing according to Arthur Hughes:

⁴ Suharsimi Arikunto, *Prosedur Penelitian; Suatu Pendekatan Praktik*, (Jakarta: PT. Rineka Cipta, 2006), p. 159

⁵ Anas Sudjiono, *Pengantar Evaluasi Pendidikan*, (Jakarta: PT Raja Grafindo Persada, 2009), p.66

“Measure language proficiency, to discover how successful students have been achieving the objectives of course of study, to diagnose students’ strengths and weakness, to identify what they know and they do not know”.⁶

The researcher carried out speaking test in this research. Speaking test could represent someone’s ability in using language to communicate. Actually there are many types of spoken test there are interviews, live monologues, role-play, collaborative tasks and discussion.⁷ So we should choose an appropriate speaking test for the students. It depends on the number of students and strategy that used.

According to Leo Sutanto in his book entitled *English for Leisure Time Speaking*, the most suitable way to know a learner’s ability to speak is through speaking test. Most of people may think that a speaking test is needed more time especially for class that has many students. We have considered the number of students in a class when we held speaking test.⁸ In this research, there are two kinds of test that have been done by researcher:

a. Pre- test

Before the researcher teaches speaking on pronunciation by using nursery rhymes, the teacher gave a test to the students. Pre- test is given to the experimental class and the control class. This test is given before the experiment was run. The form of pre- test is oral. In this case, the researcher record one by one of the students. The purpose was to know their ability in pronounce before giving treatment. .

b. Post- test

Post- test is given to the experimental class and the control class. The test is given in order to know the improvement of students’ pronounce ability on nursery rhymes. The post- test is given to the experimental class and control class after receive treatment. The experimental class was taught using nursery rhymes. And the control class was taught without using nursery rhymes. The

⁶ Arthur Hughes, *Testing for Language Teacher*, (New York: Cambridge University Press, 2003), p. 8

⁷ Scott Thornbury, *How to Teach Speaking*, (Malaysia: Longman, 2006), p. 125- 126

⁸ Leo Sutanto, *English for Leisure Time Speaking*, (Jakarta: PT Gramedia Pustaka Utama, 20007), p. xvii

form of pos- test was oral. In this case, researcher record one by one of the students. The purpose was to know the result after giving treatment.

2. Documentation

Another data that needed in this research is documentation. Documentation method is used to look for the data concerning matters or the variable that are taken in the form of the note, transcript, book, etc.⁹The focus skill of this research is speaking. So, the documentation is students' speaking recording. It is used to evaluate students' speaking skill or pronounce of words.

F. Data Analysis Technique

1. Pre- requisite Test

a. Normality test

It was used to know the normality of the data that is going to be analyzed whether both classes have normal distribution or not.

Chi square is used here¹⁰

The steps of Chi-square test as follows:

- 1) Determine of the range (R): the largest data reduced the smallest data.
- 2) Determine the many class intervals (K) with the formula:

$$K = 1 + (3, 3) \log n$$
- 3) Determine the length of the class, using the formula:

$$p = \frac{\text{range}(R)}{\text{number of class}}$$

- 4) Make a frequency distribution table
- 5) Determine the class boundaries (bk) of each class interval.
- 6) Calculating of the average $\bar{X}$ ($\bar{x}$), with the formula:

$$\bar{x} = \frac{\sum f_i x_i}{\sum f_i}$$

- 7) Calculate variance, with the formula:

$$s^2 = \frac{n \sum f_i x_i^2 - (\sum f_i x_i)^2}{n(n-1)}$$

⁹ Suharsimi Arikunto, *Prosedur Penelitian Pendekatan Praktik*, (Jakarta: PT Rineka Cipta, 2006), p. 158

¹⁰ Sudjana, *Metode Statistika*, (Bandung: Tarsito, 2002) p. 47-273.

- 8) Calculate the value of Z, with the formula:

$$Z = \frac{x - \bar{x}}{s}$$

x = Limit class

$\bar{x}$ = Average

s = standard deviation

- 9) Define the board area of each class interval.
- 10) Calculate of the frequency expository (fh), with the formula: $fh = n \times$ wide area with the n number of sample.
- 11) Make a list of the frequency of observation (fo), with the frequency expository as follow:

Class	Bk	Zi	P(Zi)	L	Ei	Oi	$\frac{(O_i - E_i)^2}{E_i}$
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- 12) Calculate the Chi-square (χ^2), the formula:

$$\chi^2 = \sum \frac{(O - Ei)^2}{Ei}$$

Where:

χ^2 = Chi-kuadrat

O_i = Frequency that was obtained from data

E_i = Frequency that was hoped

k = The sum of interval class

- 13) Determine the degree of validity (df). In the calculation of this data is arranged in the list of frequency distribution consisting of k pieces so that the interval to determine the criteria test used formula $df = k-3$, where k is the number of class intervals and the real extent $\alpha = 0.05$.¹¹
- 14) Determine the value of χ^2 table.
- 15) Determine the distribution normality with test criteria:

¹¹ Riduwan, *Dasar-dasar statistika*, (Bandung : Alfabeta, 2008), p. 191.

If $\chi_{count} > \chi_{table}$ so the data is not normal distribution and other way if the so $\chi_{count} < \chi_{table}$ the data is normal distribution.

b. Homogeneity Test

Homogeneity is used to know whether the decided experimental class and control group, come from population that has relatively same variant or not. The formula is:

$$F = \frac{Vb}{Vk}$$

Cited from Sugiyono.¹²

Notice:

Vb : bigger variant

Vk : smaller variant

The hypotheses in homogeneity test are:

H_o : homogeny variant: $\sigma_1^2 = \sigma_2^2$

H_a : non homogeny variant: $\sigma_1^2 \neq \sigma_2^2$

If calculation result of F is lower than F table by 5% degree of significance so H_o is accepted, it means both classes have same variant.

c. Test of the Average

It is used to examine average whether experimental class and control class that has been decided having significant different average.

$H_o: \mu_1 = \mu_2$

$H_a: \mu_1 \neq \mu_2$

The formula that is used in the t-test as follows:¹³

¹² Sugiyono, *Statistika Untuk Penelitian*, p.140.

¹³ Sudjana, *Metode Statistika*, p.239.

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

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

Where:

$\bar{x}_1$: average of experimental class

$\bar{x}_2$: average of control class

n_1 : the number of the experimental class

n_2 : the number of the control class

s : standard deviation

s^2 : variance

Criteria test is H_0 is accepted if $-t_{1-\frac{1}{2}\alpha} < t < t_{1-\frac{1}{2}\alpha}$. Where $t_{1-\frac{1}{2}\alpha}$ obtained from the distribution list t with $df: (n_1 + n - 2)$ and opportunities $(1 - \frac{1}{2}\alpha)$. Values for other t H_0 rejected.

2. End Phase Analysis

To examine the hypothesis that have been stated, these following steps were used.

a. Normality Test

Steps normality second step is the same as the normality test on the initial data.

b. Homogeneity Test

Steps homogeneity second step is the same as the homogeneity test on the initial data.

c. Hypothesis Test

Proposed hypothetical test in average similarity with the right test is as follows:

$$H_0: \mu_1 \leq \mu_2$$

$$H_a: \mu_1 > \mu_2$$

μ_1 : average data of experimental group

μ_2 : average data of control group

The formula that is used in the t-test as follows:¹⁴

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

With

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

Where:

$\bar{x}_1$: average of experimental group

$\bar{x}_2$: average 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

Testing criteria that apply H_a is accepted if $t_{count} > t_{table}$ with determinate df : (

$n_1 + n_2 - 2$) and the significant $\alpha = 5\%$ ($1 - \alpha$).

3. Interpret The Observation Data

The result of observation focusing on the students' observable behaviour that might indicate the students' understanding on diphthongs pronunciation during the experiment was interpreted to give further information in support to the test of measurement result.

¹⁴ Sudjana, *Metode Statistika*, p.239.