

CHAPTER III

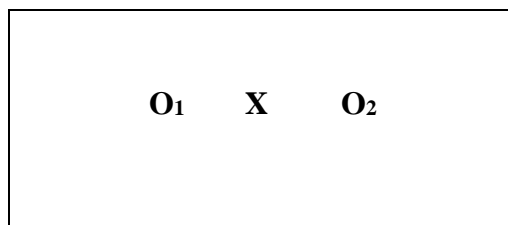
RESEARCH METHOD

This chapter present the research design, research setting, population and sample, research instrument, data collecting procedure, data analysis.

A. Research Design

Before doing the research, the researcher arranged a research design. Considering the purposes of the research and the nature of the problems, this research is quantitative one. In this research, the researcher used pre-experimental design (one-group pretest-posttest design) to identify the effectiveness of using storytelling to improve listening comprehension at UPB class UIN Antasari Banjarmasin 2017/2018.

There are one groups in pretest-posttest experiment group design that are chosen randomly, and then they are given pretest to know the initial condition whether there is a difference between experiment group for before and after test. The sketch of this design can be seen as follow:



Explanation:

- O1 : Pre-test of experimental
- O2 : Post-test of experimental
- X : Treatment (Teaching listening of storytelling)

The procedures of the pre-experimental research with one-group pretest-posttest design in this research were described as follows:

1. Administering a pretest (O1) which proposed to measure students' mastery in listening before given a treatment.
2. Applying an experimental that was using storytelling (X) to teach vocabulary.
3. Administering a posttest (O2) which proposed to measure students' mastery in listening after given a treatment.

Applying one group pretest-posttest, the researcher wanted to find out whether there is any significant different of students' mastery before and after being taught using storytelling at UPB class UIN Antasari Banjarmasin 2017/2018.

Before making observations we must do

1. Determine the purpose and function of observation activities.
2. Record the data needed and adjust it to the purpose / function of observation.
3. Conduct site survey and continue observation.
4. Meet with the instructor to ask for material that can be used for experiments.

B. Research Setting

The writer conducted the research at UPB class UIN Antasari Banjarmasin 2017/2018.

1. Research Setting

This research was conducted at at UPB class UIN Antasari Banjarmasin 2017/2018, located in A.Yani street Km. 4,5 Banjarmasin, South Kalimantan, 70235.

2. Research Time

In this research, the writer collected and conducted the data about two months. It started from 08 January 2018 until 08 March 2018. To collect the data for finding the writer, the writer administered the instrument.

C. Population and Sample

1. Population

Population is all the subject of the research. In other word, population is the big research group chosen to represent all members of group. The population of the study was UPB students of UIN Antasari Banjarmasin 2017/2018. The total number of the population is more than 800 students.

2. Sampling And Sample

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, LR Gay et al (2012:129). In selecting the sample, it must be representative to a population. According to Arikunto (2006:109), a sample must

be representative to a population. Based on Ary (2002:163) a sample is a person of a population. It means that good sample must be representative of the entire as possible, so that the generalization of the sample of this research.

The study sample consisted of (26) students in one experimental class and the class was randomly selected at pre-experiment (onegroup pretest-posttest).

In this research, the writer used simple random sampling technique. It is simple because the way of taking sample from population is done randomly without considering the strata or level of the population. Simple random sampling technique is used if the member of population is homogeny. Researchers chose one classes as samples in this study, they represent for one class as experiment class (one-group pretest-posttest).

In getting a sample of research, the authors take several Procedures. Is choosing a grade that is in the level or ability of students is quite good.

D. Reseach Variable

Variable is a variation object of the study. There are two types of variables: dependent variable (y) and independent variable (x). The dependent variable is the variable of focus or the central variable on which other variables will act if there is any relationship. The independent variable is selected by researcher to determine the relationship with the dependent variable. So, the variables in this study are:

1. Independent Variable (x)

Independent variable is the variable which influence dependent variable, in the other words independent variable is causes variable. According to Donald Ary et all (1979, p.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 was Stortelling.

2. Dependent Variable (y)

Dependent variable is the variable which is influenced by independent variable. In the other word dependent variable is effect variable. According to Donald Ary, et al (1979:30) dependent variable is the consequence of or dependent variable upon antecedent variable. Dependent variable in this research was the students' listening comprehension.

E. Data Collection Procedure

The researcher must use instrument to get the better data. The instrument of the research is a tool or facility that is used by researcher for collecting data in order to get better result. To get the accurate data, in this study the researcher chose some instruments for collecting the data, they were:

1. Test

In simple terms, test is as a method which is used to measure competence, knowledge, intelligence, and ability of talent which is possessed by individual or group to collect data. The instrument of the test in this

research is objective test. By using objective test, it can measure how students' mastery on the material.

Objective test is frequently criticized on the grounds that they are simpler to answer than subjective test. Objective tests are divided into transformation, completion, combination, addition, rearrangement, matching, correct and incorrect (true/false) and multiple choice.

In this research, the researcher conducted pre-test and post test. Pre-test was given before the teacher taught new material by using storytelling, the teacher asked students to do the test related in the materials that they was known by them before. Pre-test was given to the experimental. This test was given before the experiment run.

Post-test was given to the experiment class. It was given in order to know students' achievement after they were taught storytelling (experimental class). In this case, students were asked to do the objective test about narrative text. The score of students' achievement can be calculated by using this following formula:

$$score = \frac{\text{the number of right answer}}{\text{the number of questions}} \times 100\%$$

F. Technique of Data Analysis

1. Try out test

A try out test is the result will be used to make sure that the measuring instrument has such characteristics as validity and reliability of

instrument test. The instrument to be tried out was the composition test. The result of test was used to find out the validity and reliability, difficulty level and also the discrimination power of each item. The tryout was given to UPB of the students of UIN Antasari Banjarmasin. After finishing the test, the answer sheets were collected in order to be scored. From items test of tryout, some items were chosen as the instrument of the test. The choosing of the instrument had been done by considering: validity, reliability, the degree of test difficulty and discriminating power.

a. Validity

The validity is an important quality of any test. According to Arikunto, “a test is valid if it measures what it is supposed to be measured.” The validity of test is calculated using Product Moment Formula, which is as follows:

$$r_{xy} = \frac{N \sum XY - \sum(X) \sum(Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$$

Where :

r_{xy} : The correlation coefficient between X variable and Y variable

N : The number of students

$\sum X$: The sum of score of X item

$\sum Y$: The sum of score of Y item

Calculation result of r_{xy} is compared with r table of Product Moment by 5% degree of significance. If r_{xy} is higher than r table, the item of question is valid.

b. Reliability

“Reliability is consistency of measurement”. A reliable test score will be consistent across different characteristics of the testing situation.

Besides having high validity, a good test should have high reliability too. Alpha formula is used to know reliability of test is K - R.

$$r_{11} = \left(\frac{k}{k-1} \right) \left(\frac{S^2 - \sum pq}{S^2} \right)$$

Where :

r_{11} : The reliability coefficient of items

k : The number of item in the test

p : The proportion of students who give the right answer

q : The proportion of students who give the wrong answer

S^2 : The standard deviation of the test

Calculation result of r_{11} is compared with r table of productmoment by 5% degree of significance. If r_{11} is higher than r table, the itemof question is reliable.

2. Pre-Test

Pre-test was given before the treatments. The writer determines the statically analysis technique whether both groups have normal distribution. If the data have normal and homogeny distribution, the treatment and teaching can be conducted to both classes.

a. Normality Test

It is used to know the normality of the data that is going to be analyzed whether both groups have normal distribution or not. To find out the distribution data is done normality test with the Chi-square. Step by step Chi-square test is as follows:

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

$$K = 1 + (3,3) \log n$$

- 3) Determine the length of the class, using the formula :

$$P = \frac{\text{range}}{\text{number of class}}$$

- 4) Make a frequency distribution table.
- 5) Determines the class boundaries (bc) of each class interval.
- 6) Calculating the average Xi (X), with the formula:

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

7) Calculate variants, with the formula:

$$S = \sqrt{\frac{f_i(x_i - \bar{x})^2}{n - 1}}$$

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 wide area of each interval

10) Calculate the frequency expository (fh), with formula: $fh = n$
x wide area with the n number of sample

11) Make a list of the frequency of observation (fo), with the
frequency expository as follows:

<i>Class</i>	<i>Bc</i>	<i>Z</i>	<i>P</i>	<i>L</i>	<i>fh</i>	$\frac{f_o - f_h}{f_h}$

12) Calculate the chi-square (X^2), with the formula:

$$x^2 = \sum \frac{(f_o - f_h)^2}{f_h}$$

13) Determine the degree of validity (dk). In the calculation of
this data is arranged in list of frequency distribution consisting
of k pieces so that the interval to determine the criteria test

used formula $dk = k-3$, where k is the number of class intervals and $\alpha = 5\%$

14) Determining the value of x^2 table

15) Determining the distribution normality with test criteria:

If $x^2_{count} < x^2_{table}$ so the data is not normal distribution and the otherway if the $x^2_{count} < x^2_{table}$ so the data is normal distribution.

b. Homogeneity Test

Is used to know the similarities between two situation or population. To know the homogeneity data, the writer uses SPSS program. *Analyze – Compare Means – One Way ANOVA*.

If the calculation done manually, used the formula :

$$F_{hitung} = \frac{s^2_b}{s^2_k}$$

Where:

S^2_b = The biggest variant

S^2_k = The smallest variant

If $F_{hitung} \geq F_{table}$, so the data is not homogen, and if $F_{hitung} \leq F_{table}$, so the data is homogen.

c. Hypothesis Test

The hypothesis to be tested is:

H_o : $\mu_1 = \mu_2$

$H_a : \mu_1 \neq \mu_2$

Where :

μ_1 = Result of students' listening before treated by storytelling.

μ_2 = Result of students' listening after treated by storytelling.

In this hypothesis test, the writer used SPSS program by using analysis technique *Paired Sample T-Test* to test the significance of differences two mean from two distributions. If the data has normality and homogeneity then formula that used is:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2 + s_2^2}{n_1 + n_2} - 2r\left(\frac{s_1}{\sqrt{n_1}}\right)\left(\frac{s_2}{\sqrt{n_2}}\right)}}$$

Where:

r = Result of students' listening before and after.

n_1 and n_2 = The number of sample.

\bar{x}_1 = Result of students' listening before treated by storytelling.

\bar{x}_2 = Result of students' listening after treated by storytelling

S_1 = Standard deviation before treated by storytelling.

S_2 = Standard deviation after treated by storytelling.

s_1^2 = Variant before treated by storytelling.

s_2^2 = Variant after treated by storytelling.

To find *mean* (\bar{x}) and variant (s^2) :

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

To find the *t-score* in the distribution table t with significant $\alpha = 5\%$ with $d_k = (n_1 + n_2 - 2)$. With criteria $t_{table} \leq t_{hitung} \leq t_{table}$ so H_0 accepted and H_a rejected. Whereas, if the data has normality but has not homogeneity, the formula that used:

$$t' = \frac{x_1 - x_2}{\sqrt{\left(\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}\right)}}$$