

BAB III

RESEARCH METHODOLOGY

A. Research Design

This research use experimental method. Bordens and Abbott (2011) state that in this most basic of experimental design, the group receiving the treatment is called the experimental group and other group the control group. The control group is treated exactly like the experimental group except that it is not exposed to the experimental treatment.

This is design can be represented by following Sugiyono, (2013):

Where: R: Random Sample

O1 : Pre-Test

X1 : Treatment using simulation Technique

X2 : Treatment using conventional teaching

O2 : Post-Test¹⁰

In this case the researcher tries to apply learning media in form of YouTube videos to find out how much influence on the pronunciation of students of AKL (Akutansi Lembaga) at Ma'arif NU 1 Vocational School in Purbolinggo in experimental class. Meanwhile in control class the researcher uses learning as usual without using other media.

B. Setting of The Research

1. Setting of Place

The research will be conducted at Ma'arif NU 1 Vocational High School of Purbolinggo in Jl. Wahid Hasyim No. 01 Tanjung Inten Kec. Purbolinggo.

2. Setting of Time

This research conducted experimental class in 2 grade students of AKL (Akutansi Lembaga) at Ma'arif NU 1 Vocational School in Purbolinggo academic year 2020/2021

C. Population and Sample

1. Population

Arikunto cited in Waruwu (2020) states that Population is the whole subject of research. Population is an area that is used as a research center that has been set by the researchers. Where the population to be examined already meets its own criteria by the researchers. From there the researchers can conduct a study and the researchers conclude what has been found in the study.

In this study, the population or the subjects of research are the second grade students at Ma'arif NU 1 Vocational High School of Purbolinggo in the academic year 2020/2021.

2. Sample

Mujere (2016) says that sample is group of people, objects or items that are taken from a large population for a measurement. The sample should be representative of the population to ensure that we can generalize the findings from the research sample to the population as a whole.

So the sample is part of a population and if the researcher cannot learn everything related to the population, the researcher can use samples from that population to be examined. In this research, there are two classes as sample. Where class AKL1 as the experimental class that consist of 25 students and class AKL2 as the control class that consist of 26 students.

D. Research Instrument

Arikunto (2017) says that Instrument of the research is tool of activity used by researcher in collecting data, so that the process becomes easier and better more careful, complete and systematic.

In this research, the researcher collected all data using two instruments that is documentation, observed and tested.

1. Observation

In observation, the researcher observe and take notes the extent of students' understanding of the material that has been presented. In this process the researcher also gets information about students, the class situation, how students respond to the

learning process and can see the effect of media use on student pronunciation.

2. Test

To measure of students' pronunciation, the researcher used a test in the form of reading aloud in front of the class. Students are asked to read the words relevant to the students' pronunciation. The purpose of this tests the researcher will more easily and quickly give a score.

E. Data Colecting Technique

Kabir (2016) says that data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes.

From the explanation above the researcher decided to use data collection techniques as follows:

1. Observation

In this research, the researcher use data collection techniques in the form of observation. The researcher uses observation to find out the pronunciation errors of students the researcher must observations. So that pronunciation mistakes can be detected. Doing observation the researcher more easier to find out whether the media used has an influence on student pronunciation.

2. Test

In this study the test is also a very important thing to do. With the test the researcher can find out the students' abilities. The researcher use 2 tests in this study, namely the pre-test conducted at the beginning of the meeting. The goal is that the researcher to know the initial abilities of students before being given treatment. And the post-test done at the end of the study. The goal is that the researcher to know whether the treatment given has an impact on the pronunciation ability.

A. Data Analysis Technique

1. Analysis of The Test

The data obtained from the tests is analyzed statistically by using statistic calculation of the t-test formula with the significance degree of 5%. According to Sudjana (2008), the formula is:

$$M1 = \frac{\sum f_i x_i}{\sum f_i}$$

Note:

x_i = Middle Score of interval class

f_i = Frequency

$f_i \cdot x_i$ = The amount of multiplication between frequency and middle interval.

2. Pre Analysis

a. Normality Test

A normality test was conducted to analyze the sample data with a non-normal distribution for the results of the specified nonlinear model to be valid. Schmidt and Finan cited in economies (2021).

a) Chi-Square

The Chi-square statistic is a non-parametric (distribution free) tool designed to analyze group differences when the pendent variable is measured at nominal level. According the formula for calculating a Chi-square is L.Mchugh (2013) :

$$\sum \chi^2_{i-j} = \frac{(O-E)^2}{E}$$

Where:

O = Observed (the actual count of cases in each cell of the table)

E = Expected value (calculated below)

x^2 = The cell Chi-square value

$\sum x^2$ = Formula instruction to sum all the cell Chi-square value

χ^2_{i-j} = i-j is the correct notation to represent all the cells, from the first cell (i) to the last cell (j) in this case cell 1 (i) through cell 6 (j).

b. Homogeneity Test

The homogeneity of variance is intended to know whether the control and experiment class group has homogeneous variance, to test the homogeneity of H. Levene cited in Sipatahoenan (2019).

a) Analysis of Variance (ANOVA)

Analysis of Variance (ANOVA) is an analysis tool used in statistics that splits an observed aggregate variability found inside a data set into two parts: systematic factors and random factors. Kenton (2022). The formula is:

$$F = \frac{MST}{MSE}$$

Where:

F = ANOVA coefficient

MST = Mean sum of square due to treatment

MSE = Mean sum of square due to error

3. Hypothesis Testing

Hypothesis testing is a procedure used to test the validity of statistical hypothesis of a population by using data from the population sample. Nuryadi, Astuti, Utami, Budiantara (2017), the formula is:

$$H_0 : \mu = \mu_0 \text{ lawan } H_1 : \mu \neq \mu_0$$

H_0 = Initial hypothesis

H_1 = Alternative hypothesis or working hypothesis

a) T-test

A t-test is a statistical test that is used to compare the means of two groups. It is often used in hypothesis testing to

determine whether a process or treatment actually has an effect on the population of interest, or whether two groups are different from one another. Bevans (2020) the formula is Nuryadi, Astuti, Utami, Budiantara (2017):

$$t_{hit} = \frac{\bar{D}}{\frac{SD}{\sqrt{n}}}$$

t = value of t count

\bar{D} = the average difference in measurement of 1 and 2

SD = standard deviation of measurement difference 1 and 2

n = number of sample