CHAPTER III

RESEARCH METHOD

A. Research Design

Research design is the framework of research methods and techniques chosen by a researcher to conduct a study. The Research design provides a list of ingredients and instructions for producing a meal, the research design outlines the elements and a strategy for carrying out the study successfully. According to Kerlinger, (1986) as cited in Bosley (2019) describes research design as a plan, structure and strategy of investigation that is adopted with an aim of obtaining answers to research questions with optimal control of variables (Bostley, 2019). It means that research design serves as a comprehensive plan and strategy for conducting an investigation, with the purpose of obtaining answers to research questions while maintaining optimal control over variables. Creswell (2014) in Bostley, (2019) research design inquiry which provides specific direction for procedures in a research. It means that research design give direction for procedure in research.

The design in this research used Quasi Experimental Design. Maciejewski (2020) as cited in Rahmawati Putri & Ali Wardana, (2023) defines a quasi-experiment is a prospective or retrospective study in which individuals or groups of individuals self-select into one of several different treatment groups in order to compare the effectiveness and safety of those non-randomized treatments in the real world (Rahmawati Putri & Ali Wardana, 2023). From the statement above it means that quasi-experimental aim to provide valuable insights into the effectiveness and safety of treatments in real-world settings, despite the lack of random assignment typically found in controlled experiments. However, because participants choose their own treatment groups, researchers must take into account potential confounding factors or inherent biases when evaluating the data.

Quasi-experimental research is research design in quantitative research. Based on Watson Roger, (2015) as cited in Palupi et al., (2021) states that quantitative research encompasses a range of concerned method with the systematic investigation of social phenomena, by using numerical or statistical data (Palupi et al., 2021). Quantitative research used statistical methods to evaluate data to objectively measure variables and test hypotheses. The variables in quantitative research can be assessed using instrument, then to analyses

numerical data be produced with statistically analyzed. The quantitative approach was defined as the collection of numerically analysed information, with the result of the data dedicated using table, statistics, and graps.

In this research, involve two classes. One class designated as the experiment class, meanwhile another class designated as controlled class. In this research, the researcher used the Busuu application as learning media in the experimental class, meanwhile for the controlled class used traditional learning media. The table of quasi-experimental research design as quoted by Sugiyono (2018) as cited in Prabawati & Agustika, (2020) as follows:

Table 3. Research Design

Class	Pre-test	Treatment	Post-test
A (Experimental class)	O_1	X	O_2
B (Control class)	O_3	-	O_4

Note:

A	: Experimental Class
B	: Control Class
O_1, O_3	: Pre-test
X	: Treatment by using Busuu application
-	: Conventional Teaching Technique
O_2, O_4	: Post-test

Based on the explanation above the researcher has given the pre-test to the students because to know the competence in listening skill of the students. In this research the researcher assisted the pre-test before the treatment X (Busuu Application). After the researcher implemented the treatment the researcher gave post-test to measure the improvement in listening skill of the students.

B. Research Variable

Variables in research refer to characteristics or attributes that can be measured, manipulated, or controlled. According to the Creswell (2012) in Sugiyono (2019) variable refer to characteristic or attribute of individual or an organization that can be measured or observed and that varies among the people or organization being studied (Sugiyono, 2019). It means that variable in research typically something that can be measured, seen, or categorised, a variable reflects a specific quality or attribute that is being examined and exhibits variance among

the people or organizations being studied. The variables in this research are the dependent variable and independent variable. Here an explanation about dependent variable and independent variable as follows:

1. Independent variable is variable that affect or variable that being a cause or change or appearance of dependents variable (tied). It means that, that independent variable is variable that influence of dependent variable (Sugiyono, 2019).
2. Dependent variable is variable that influenced or being effect because of independent variable (free) (Sugiyono, 2019). It can be summarized that dependent variable refer that variable being affect because the independent variable.

Based on the explanation above, the research variable in research as follows:

1. Independent variable (X) is Busuu Application. According to Ilmi N.L, Rohadi T., (2023) the Busuu app was first published on Busuu.com in 2007 by Bernhand Niesner and co-founder Adrian Hilti in Spain. At that time Busuu was only available as a website that provided free language learning services to users who wanted to learn languages in various parts of the world.
2. Dependent variable (Y) is students' listening skill. Listening skill, which is here typified as unidirectional or non-interactive listening to an audio-visual text, is one of the required abilities to achieve proficiency in a foreign language (Gökmen, 2021).

C. Research Population, Technique Sampling and Sample

In this research the researcher determined the population, technique sampling and sample as follow:

1. Research Population

Population is a generalization area consisting of objects or subjects that have certain qualities and characteristics determined by researchers to be studied and then draw a conclusion (Emny et al., 2021). According to Sugiyono (2012) as Cited in Baihaqi & Rutiningsih, (2017) defines that population is the whole subjects which are complete and clear and will be the object in the research. Hence, the population in this research is tenth grade of DKV class at SMK N 3 Metro in academic year 2023/2024. There are two classes, in DKV class A consist of 33 students and in DKV class B consist of 33 students. Total the population is 66 students.

2. Sample Technique

Sampling technique is one of technique to take sample (Sugiyono, 2019) . Researchers must take sampling decisions early in the overall planning of a piece of research (Davison & Smith, 2018). Therefore, the purpose of sampling is to make inferences or draw conclusions about the entire population or dataset based on the characteristics observed in the sample. In this research, the researcher used Cluster Random Sampling to take the sample. In this research used cluster random sampling because to determine which class will be experimental group and which class will control group. The steps by the researcher to choose the experimental group and the control group as follows:

a. Write class 10 DKV A and 10 DKV B in a piece of paper.
b. Rolled the papers and then put the papers rolls into the glass.
c. Shake the glass until the paper rolls out.
d. The experimental class focussed on the first roll of paper that comes out first (10 DKV A).
e. The control class focussed on the second roll of paper that comes last (10 DKV B).

3. Sample

Emny et al (2021) states that the sample is part of the number and characteristics possessed by the population**.** Samples are part of the population (Novarini & Imbayani, 2019). Arikunto (2008) in Novarini & Imbayani, (2019) states that the sample is partially or representative of the population studied. Researchers must take sampling decisions early in the overall planning of a piece of research (Davison & Smith, 2018). In this research the researcher gained the 10 DKV class A as an experimental group and then 10 DKV class B as control group using the Cluster random Sampling as sampling method. 10 DKV class A consist of 33 students then 10 DKV class B consist of 33 students.

D. Research Instrument

Research instrument is a tool or questionnaire used to collect data or measure objects of a research variable. Research instrument utilized to gather, review, investigate into, and present information in a more methodical and impartial manner. Gay and Airasian (2000) as cited in Sihombing et al., (2021) defines instrument is a tool that is used in collecting data. It means that, instrument become tool for the researcher collect the data. Sugiyono (2017), as cited in Nainggolan et al., (2021) defines research instrument is a tool used to measure observed natural

and social phenomenon. Therefore, the researcher should make research instrument before holding the research.

This research, the instrument used is test, type of the test is fill in the blank questions. The test consist of 30 fill in the blank questions. The researcher conducts a pre-test and a post-test. According to Sugiyono (2017) in Suwardi et al (2020) proposes that one group pretest and post-test design is carried out by measuring at the beginning (pre-test) before the treatment and performing another at the end (post-test) (Suwardi et al., 2020). The pre-test is test that give in the beginning of learning process with the purpose of pre-test is to measure the listening skill of the students before treatment and then post-test is test that given in the end of learning process, post-test given after finished do the treatment.

In summarize, a research instrument is a device use in research to gather the testable data. This research, when managing the instrument to the students, the researcher applied oral practice to determine the percentage of students' speaking ability.

E. Validity and Reliability

The validity and reliability of the instrument explained by the researcher, validity is intended to measure that the instrument must be valid, then reliability is to the consistency, stability, and dependability of measurements or data obtained from a research instrument. Validity were based on the view that it was essentially a demonstration that a particular instrument in fact measures what it purports to measure, more recently validity has taken many forms (Davison & Smith, 2018).

1. Validity

Validity was essentially a demonstration that a particular instrument in fact measures what it purports to measure, more recently validity has taken many forms (Davison & Smith, 2018). Other statement from Arifin (2017) in Saputra (2020) explained the validity of a test kit can be defined as the ability of a test to measure what should be measured (Saputra, 2020). It means that the validity of test is test that measure about what should to measured.

In this research the researcher, the researcher used face validity as a validity test. According to Oluwatayo (2012) as cited in Taherdoost (2018) face validity refers to researchers' subjective assessments of the presentation and relevance of the measuring instrument as to whether the items in the instrument appear to be relevant, reasonable, unambiguous and clear (Taherdoost, 2018).

Face validity is concerned with whether a measure seems relevant and appropriate for what it's assessing on the surface. Therefore, the item test that want to give to the students should appropriate with the material from the expert assessment. There are two expert which given the evaluation. The expert which gave evaluation namely Mam Fitri Palupi Kusumawati M.Pd,B.I. and Miss Dita Adelia S.Pd. The role of the expert assessment is to reviewed the process that use in develop the test and the expert also make consideration about how the item test will represent. There are some criteria to measure the validation namely: 1. Very poor, 2. Poor, 3. Enough, 4. Good, 5. Very good.

2. Reliability

For research to be reliable it must demonstrate that if it were to be carried out on a similar group of respondents in a similar context (however defined), then similar results would be found (Davison & Smith, 2018). Arikunto (2010) in Handayani et al., (2022) states the same that reliability shows in an understanding that the instrument is trustworthy enough to be used as a data collection tool because the instrument is already good. Reliability refers to understanding whether an instrument can measure something that is measured consistently over time (Nurgiyantoro et al., 2015). From the explanation above reliability means that reliability testing in the context of data collection focuses on determining whether an instrument can be trusted to provide consistent and accurate results.

This research the researcher used internal consistency which use Spearman Brown (split-half) with SPSS the following is the manual formula used in reliability test using Spearman Brown (spilt-half) stated by (Nurgiyantoro et al., 2015) :

$$r_{11} = \frac{2(r_{xy)}}{1 + r_{ggxy}}$$

Note:

r_{ns} : Coefficient reliability instrument

r_{gg} : Corelation value

The criteria for testing the Spearman Brown (spilt-half) reliability test according to (Wati, E.,T., & Zuhdi., 2017) as follows:

Criteria:

a. When $r_{11} > r_{teoritik}$, the instrument is reliable.
b. When $r_{11} < r_{teoritik}$, the instrument unreliable.

After knowing the results of the reliability calculation, then the next step is to compare r11 with df (degree of freedom) = N-2 and significance level 5%. When $r_{11} > r_{table}$ then instrument declared reliable and when $r_{11} < r_{table}$ then the instrument is stated unreliable.

F. Data Collecting Technique

Data collection techniques are important in research. The aim of the data collection technique is to determine the results of the research. In this study, researcher used test to measure students' listening skill. The test that the researcher used is a written test which the test is fill in the blank test. The explanation be seen below:

1. Pre-test

Pretest is a preliminary test or trial that is conducted before instruction or evaluation. The purpose of pre-test is to know the real competence from the students in speaking ability. The pre-test do before treatment will give. Pre-test provides a measure on some attributes or characteristics that you asses for participants in an experiment before they receive a treatment Syarifah Aini & Asnawi, (2022). It means that, pre-test held to measure the attributes or characteristics before treatment will give.

In this pre-test the students answered 30 questions the questions are fill in the blank questions. Score of pre - test based on criteria on the listening rubric score which the rubric score consists of some aspects the aspects are low, average and good.

2. Treatment

After holding the pre-test, the researcher gave the treatment to the students. The purpose of the treatment is to extent the listening skill of the students. The treatment conducted by the researcher in a class. This research the researcher used Busuu Application to conduct the treatment and there were four meetings in treatment. Every meeting conducted 45 minutes using Busuu Application. In treatment the material about preference, which part of preference material consist of like and prefer. First meeting and second meeting the material about like and for third and fourth meeting the material about prefer.

3. Post-test

After gave treatment, the researcher gave post-test. The aim of post-test is to see how the student improvement in listening skill after giving the treatment. In the post the researcher gave succession like in pre-test. The score of post-test based on the criteria on the listening test rubric, such as low, average and good.

G. Data Analysis Technique

Data analysis is simply the process of converting the gathered data to meaningful information (Taherdoost, 2020). From the definition explain by (Taherdoost, 2020) data analysis technique means that extracting significant insights and information from unprocessed data is the fundamental aspect of data analysis, which aids in making well-informed decisions and enhancing comprehension of diverse occurrences. This research after the researcher collected the data, the researcher analysed the result of the data from pre-test and post-test related both of them using the formulas of normality test, homogeneity test, and hypothesis test. In this research, the data will analysis using some techniques:

1. Identification the data. The researcher identified the data through the students score.
2. Next is, calculate the students pre-test score
3. Dis the treatment using Busuu Application to teach listening skill.
4. After did the treatment, the researcher calculate the students' post-test score.
5. Report the result. After the researcher completing all of the steps the researcher will make conclusion.

In data analysing technique there are two formulas used the formulas are normality test and homogeneity test. The procedures to process the data:

1. Normality Test

Normality has been one of the important assumptions in inferential statistics (Koh & Ahad, 2020). Laha (2006) as cited in Koh & Ahad, (2020) defines normality tests verify the normality of the data set from a population before proceeding to statistical inference procedure (Laha, 2006). There Beside it, According to (Rosidi & Faliyanti Eva, 2017) the purpose of normality test is to know whether data distribution is normal or not. This research, the researcher will be used Shapiro-

Wilk as the normality test. The researcher used Shapiro-Wilk with SPSS because the data in this research less that fifty. The criteria will be used in Shapiro-Wilk with SPSS according (Nurgiyantoro., B, et al, 2015):

a. If the Significant value (sig) >0,05, the data distribution normal.
b. If the Significant (sig) <0,05, the data distribution is not normal.

2. Homogeneity Test

A statistical technique known as the homogeneity test is used to examine whether or not the variances of several groups or circumstances are equal. One technique to assess how similar two particular groupings of data are to one another is to use the homogeneity test (Anggara & Anwar, 2017).

In this researcher the researcher used One way ANOVA with SPSS as the homogeneity test. There are two criteria in One way ANOVA with SPSS, namely:

a. When the significance value is >0,05 means the data is homogeneous.
b. When the significance value is <0,05 this is mean the data not homogeneous.

H. Hypothesis Test

A hypothesis is a statement that is made about a population parameter, which is a numerical characteristic of a population. There are two hypothesis are:

1. First Hypothesis

For the first hypothesis the researcher used paired sample T-test with SPSS as the test. Based on (Anggara & Anwar, 2017) explain that paired sample test is testing the difference in means between two samples or data sets from the same group can be accomplished using paired sample tests. The T-test compares the experimental class's pre-test and post-test scores. There are two criteria for paired sample T-test according (Anggara & Anwar, 2017):

a. When Significant value is (Sig) < 0.05 t_{ratio} H_a is accepted.
b. When Significant value is (Sig) ≥ 0.05 t_{ratio} H_0 is not accepted.

2. Second Hypothesis

For the second hypothesis the researcher used independent T-test with SPSS as the test. The purpose of this test is to compare the averages of two populations or groups using independent data (Nuryadi et al., 2017). There are two criteria for Independent T-test according (Anggara & Anwar, 2017):

a. When Significant value is < 0.05 t_{ratio} H_a is accepted.
b. When Significant value is ≥ 0.05 t_{ratio} H_0 is not accepted.