

CHAPTER III

RESEARCH METHOD

A. Research Design

Research design refers to the general plan or framework that publications the procedure of undertaking research. A research design is defined as the set up to decide on, among other issues, how to collect further data, analyse and interpret them, and finally, to provide an answer to the question (Donnette et al., 2021). It outlines the methods, procedures, and techniques to be used in gathering and analysing data to address a specific research question or objective. The research design is Quantitative-Quasi Experimental Design. The objective of experimental research is to determine whether a certain treatment has an affects on a result (Creswell, 2009). These outcomes are assessed by giving special treatment to one group and not giving special treatment to the other group and then determining how both groups score.

Quantitative research refers to survey and experimental research that identifies samples and populations, choosing investigative methodologies, collects and analyses data, presenting findings, and providing interpretations. Quantitative methods involve the processes of collecting, analysing, interpreting, and documenting study data (Creswell, 2009). The objective of quantitative research is to systematically collect and analyse numerical data to understand, describe, and explain phenomena and relationships. It involves gathering measurable data through structured research methods, such as surveys, experiments, or secondary data analysis, and applying statistical analysis to draw conclusions. In this research, the researcher is designing one group as an experimental class and another one group design as a control class. The researcher is using the dictogloss technique as a teaching technique in the experimental class, while the traditional teaching technique is use in the control class. The table of research design as follows:

Table 3.1 Research Design

Class	Pre-Test	Treatment	Post-Test
A	O1	X	O2
B	O3	-	O4

(Sugiyono in Asrowi et al., 2019)

Note:

- A : Experimental Class
 B : Control Class
 O1, O3 : Pre-Test
 X : Dictogloss Technique
 - : Traditional Teaching Technique
 O2, O4 : Post-Test

Based on the explanation the researcher has given the pre-test to the students because to realize the competence in listening ability of the students. The researcher assisted the pre-test before the treatment. After the researcher implemented the treatment, the researcher has given post-test on measure the improvement in listening English of students.

B. Research Variable

Variables are characteristics, attributes, or properties that can change or vary, and it is essential component of any study. It is a measurable or observable quantity that can take on different values depending on the person, object, event or situation. Variables are used to study and understand relationships, patterns, and influences in research studies. According to Oyebanji, (2017) there are two types of research variables, namely independent variables and dependent variables. According to Sugiyono, (2013) an independent variable is an input variable that, in part as a whole, causes a certain result. It is a stimulus that influences a factor that can be manipulated to influence a response, prognostic, or outcome (tied). In other hand, a dependent variable is an outcome variable that is caused in whole or in part by an input variable (free). Based on the description above, the research variables in this research as follow:

Table 3 1 Research Variables

Group	Independent variable	Dependent variable
Experimental group	Dictogloss Technique	Listening Ability
Control group	-	Listening Ability

1. Independent Variable or (X) is Dictogloss Technique
2. Dependent Variable or (Y) is Listening Ability

C. Research Population, Sampling Technique, and Sample

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

1. Research Population

Population refers to an entire group of individuals, objects, or events that share common characteristics (Rahman et al., 2022). Hence, in this research the population are beginner level of students in SMA Yos Sudarso. There are 3 classes and the total of population are 78 students.

2. Sampling Technique

To discriminate between the classes that would form the experimental class and the control class in this study, the researcher used the cluster random sampling approach. Clusters are natural groupings of people (Sedgwick, 2014). There are 3 beginner class in SMA Yos Sudarso Metro, class 1 consist of 26 students, class 2 consist of 26 and class 3 consist of 26 students. According to Priadana & Sunarsi (2021) to differentiate the control class and experimental class, the researcher used lottery technique. Below are the steps used by researcher to determine the experimental class and the control class used a cluster random sampling:

- a. Write class beginner 1 until beginner 3 on a piece of paper.
- b. The papers are rolled and then put into the glass.
- c. Shake the glass until getting rolled papers out.
- d. The first roll of paper that coming out was beginner 3, then put back into the bottle to keep the chance ratio remains the same, and shaken again until a different roll of paper coming out.
- e. Beginner 1 was coming out for the second roll of paper.
- f. Two classes (beginner 1 and 3) are selected and have the opportunity to be a control and experimental classes.
- g. Two papers are rolled up and put back into the bottle and shaken again
- h. The first roll of paper that coming out was beginner 1 who served as the experimental class.
- i. The second roll of paper that coming out was beginner 3 who served as the control class.

3. Sample

The sample is part of the population that is the focus of our research, within the scope and time that we specify (Winarto, 2018). A representative sample is a sample that truly reflects the population. Then, determining the sample in research

is crucial in research. In this research, the researcher obtained the beginner 1 class is an experimental class and the beginner 3 class is a control class using the Cluster Random Sampling method. Beginner 1 class consist of 26 students as an experimental class and Beginner 3 consisted of 26 students as a control class.

D. Research Instrument

According to Sugiyono, (2013) the research instrument is a tool to measure the observed natural and social phenomena. A research instrument is a tool, device or method utilized by researchers to gather data or information for conducting research, this shows that the research instrument has a very important role in research. Therefore, the researcher has to make a research instrument before conducting the research.

In this research, the instrument that used is test form. According to Wibawa, (2019) states that the test is a set of questions or tasks that must be answered and carried out by the test taker to measure the knowledge, attitude, and skills of the test taker. The researcher conducted a pre-test and post-test by giving 30 questions about listening cloze (fill in the blank). Pre-test and post-test are formative assessment types used to assess progress or development of students. Pre-test is a preliminary assessment or evaluation conducted before the main research study or intervention begins. Meanwhile, the post-test is conducted after the main research study or intervention has been completed.

The researcher concluded that the research instrument is a tool that used in research to collect data. The researcher uses listening cloze questions to determine the percentage of students' listening ability.

E. Validity and Reliability Instrument

Instruments that have good quality are valid and reliable instruments (Sugiyono, 2013). Therefore, to obtain a good instrument, validity and reliability tests must be carried out.

1. Validity Test

Validity refers to the extent to which a measuring instrument accurately assesses the specific behaviour or attribute it is designed to measure. It represents the degree to which the instrument effectively fulfils its intended purpose by providing reliable and accurate measurements (SÜRÜCÜ & MASLAKÇI, 2020). In this research, the researcher used face validity to test the validity of the instrument. Face validity refers to a subjective assessment of whether a measuring instrument or tool appears, on the surface, to measure what it intends to measure. It is a form

of content validity that relies on the experts or individuals familiar with the construct being measured.

The experts are typically professionals or researchers with relevant experience, qualifications, or expertise in the field. There are two experts which given the evaluation. The experts are reviewing the instrument on how well the test instrument use in this research. There are five criteria of validation: (1) Very Poor, (2) Poor, (3) Enough, (4) Good, and (5) Very Good.

2. Reliability Test

In the other hand the instrument to be valid, the instrument must be reliable. Reliability is a crucial initial step in gaining scientific acceptance and usefulness for a test because it provides the necessary evidence of the instrument's consistency and dependability (Bornstein, 2018). Reliability testing is a process used to assess the consistency, stability, and repeatability of a measuring instrument or tool. It aims to determine the degree to which the instrument produces consistent and dependable results when administered to the same individuals or under similar conditions.

In this research, the reliability test used internal consistency which uses the Spearman Brown (Split Half) with SPSS, while the manual calculation used in the Spearman Brown (Split Half) stated by Sugiyono, (2013) as follows:

$$r_i = \frac{2r_b}{1 + r_b}$$

Note:

r_i : Internal reliability of all instruments.

r_b : Product moment correlation between the first and second halves.

The criteria of reliability test for Spearman Brown (Split Half) according to (Sutrisno, 2016) as follows:

Reliability Index	Criteria
0.81 – 1.00	Very good
0.61 – 0.80	Good
0.41 – 0.60	Quite
0.21 – 0.40	Poor
0.00 – 0.20	Very poor

(Sutrisno, 2016)

F. Data Collecting Technique

According to Kabir, (2018) data collection involves systematically gathering and measuring information about specific variables of interest in order to address research questions, test hypotheses, and assess outcomes. Data collection techniques refer to the specific methods or approaches used to gather data or information for research purposes. Based on the research design above, the researcher used pre-test, treatment, and post-test in data collecting technique.

1. Pre-test

The researcher administers a pre-test to the students before administering treatment to the experimental class and the control class. A pre-test is a preliminary assessment or measurement made before to the use of a treatment in research. The purpose of a pre-test is to find out how far students' listening skills are before treatment is given to students. In the pre-test, students will be given a test with listening cloze (fill in the blank) with 30 missing words. Each correct word gets 1 score and each wrong word get 0 score. So, when students answer all the questions correctly then they will get a score of 30. Then the score made 100 using this calculation.

$$\frac{\text{total word correct}}{30} \times 100$$

2. Treatment

After conducting a pre-test in the experimental class and control class, the researcher has given treatment to students in the experimental class. The purpose of this treatment is to develop students' listening skills using the dictogloss method. The technique has used the dictogloss method and there has six meetings in the treatment. Each meeting held for 45 minutes using the dictogloss method to improve students' listening skills.

3. Post-test

After conducting the treatment, the researcher conducts a post-test to determine the percentage of students' listening ability after treatment on the students. The post-test is conducted after the main research study or intervention has been completed. The purpose of the post-test is to find out the percentage of students' listening ability after treatment is conducted on students. The questions to be used in the post-test are the same as those used in the pre-test with the same calculation as the pre-test.

G. Data Analysing Technique

Data analysis involves transforming collected data into meaningful and interpretable information (Taherdoost, 2020). Data analysis techniques refer to the methods and approaches used to analyse and interpret collected data to draw meaningful conclusions and answer research questions. The purpose of data analysis techniques is to uncover patterns, relationships, and insights within collected data in order to extract meaningful information and draw conclusions. In this research, the data would analyse using techniques as follows:

1. Data identification. The researcher identified the data through the score of the students.
2. Calculate the students' score in pre-test.
3. Do the treatment using dictogloss method to teach listening.
4. Calculate the students' score in post-test.
5. Report the result. After conducting all the steps, the researcher made the conclusion. The formula that used in the data analysing technique is normality and homogeneity test.

a. Normality test

According to Shah et al., (2013) testing normality of the data is prerequisite for inferential statistical technique. From the explanation above, it can be deduced that normality test is precondition in statistic. Beside it, According to Rosidi & Faliyanti Eva, (2017) the purpose of normality test is to know whether data distribution is normal or not. The analysing of the normality of distribution toward students' score is important.

In this research the researcher has used Shapiro-Wilk with SPSS as normality the normality test, here the detail explanation as follow:

- a. If the significant value (Sig) > 0.05 , the data distribution is normal.
- b. If the Significant value (Sig) < 0.05 , the data distribution is not normal.

b. Homogeneity test

The homogeneity test, a statistical method is used to determine whether or not the variances of various groups or situations are equal. By assessing homogeneity, researchers may confirm the equality of variances presumption required for many statistical analyses and make reliable inferences from their data. In this research the researcher used One Way ANOVA as homogeneity test by Rosidi & Faliyanti Eva, (2017). The criteria of a significant value based on homogeneity test (Anggara & Anwar, 2017) as follow :

- a. When the significance value is $> 0,05$ it means homogeneous.
- b. When the significance value is $< 0,05$ it means not homogeneous.

c. Hypothesis Test

Based on the normality test and homogeneity test, the researcher tests the hypothesis using the Paired Sample T Test. A paired sample t-test is a statistical test used to compare the means of two related groups or conditions. This test is comparing the experimental and control class pre-test and post-test score. In calculating this paired sample t-test using SPSS by (Anggara & Anwar, 2017) as follows:

1. First Hypothesis

The researcher used Paired Sample T Test with SPSS. Paired Sample T Test is a way to test the difference in averages of two samples from the same group (Anggara & Anwar, 2017). Paired Sample T Test is used when the data is normally distributed. The are two criteria for Paired Sample T Test using SPSS calculation as follows:

- a. If the Significant value (Sig) > 0.05 , H_0 is accepted
- b. If the Significant value (Sig) ≤ 0.05 , H_a is accepted

2. Second Hypothesis

The researcher used Independent Sample T Test with SPSS. Independent Sample T Test is a way to test the difference in averages between two samples from different groups (Anggara & Anwar, 2017). Independent Sample T Test is used when the data is normally distributed and the data is homogeneous. The are two criteria for Paired Sample T Test using SPSS calculation as follows:

- a. If the Significant value (Sig) > 0.05 , H_0 is accepted
- b. If the Significant value (Sig) ≤ 0.05 , H_a is accepted