

CHAPTER III

RESEARCH AND METODOLOGY

In this chapter, the researcher discussed the Operational Definition, Methodology of the Research, Population and Sample, Technique for Collecting Data, and Technique for Analyzing for Data, Validity, Reability, and T-test.

A. Method of The Study

In this researcher , the researcher used quantitative approach. Researchers conducted research was used experimental methods. Furthermore, according to Cresswell (2020, p.3) experiment is test an idea (or practice) to determine whether it influences an outcome or dependent variable. Arikunto statement (2020, p.3), an experimental study is a way to search for caused-and-effect relationships between variables generated by eliminating, reducing, or separating other disturbing factors.

In this research used a pre-experimental method. Sugiyono (2014, p.109), said that Pre-experimental design is a design that covers only one group or class given pre- and post-test. Researcher only used one class to conducted pre-test and post-test.

The experimental design of the study is described in the following table:

Table 3.1 The Pre-Experimental Design

Pre-test	Treatment	Post-test
O1	X	O2

Source; (Cohen, 2018)

X : Experimental/Treatment

O1 : Pre-test in experimental class

O2 : Post-test in experimental class

B. Population and Sample

1. Population of the Study

In conducting research, a researcher needs a subject to be studied. Those subjects are populations and samples. More than that according to Arikunto (2020) The population is the entirety of the subjects to be studied.

Based on the definition above, the researcher needs the subject to be studied, namely the so-called population and sample. The population of this study all the eleventh-grade students of MAN 1 OKU. This table presented the population of the research.

Table 3.2 The population of the study

No	Class	Total Students
1	XI. IPA 1	35
2	XI. IPA 2	36
3	XI. IPA 3	33
4	XI. IPA 4	36
5	XI. IPS 1	34
6	XI. IPS 2	35
7	XI. IPS 3	36
Total Populations		245

Source: MAN 1 OKU (2022-2023)

2. Sample of the Study

Sample is a small part of the population that was be researched by researchers. In connection with the statement Arikunto (2020) explains that: "The sample is a partial or representative of the population under study". Sample must be done

in such a way as to obtain a sample that serves as an example or illustrates the actual state of the population.

This researcher used Cluster random sampling. According to Ridwan (2004: 60), cluster sampling is a sampling technique carried out by taking representatives from each existing region / group. In other words, researchers divided populations into groups based on natural characteristics and categories. The researcher sample used smaller rolls used random sampling to choose paper lottery to determine the class used as the researcher sample. The steps taken are:

1. The first researcher wrote the names of each class on small pieces of paper, namely class XI IPA 1, XI IPA 2, XI IPA 3, XI IPA 4, XI IPS 1, XI IPS 2, and XI IPS 3.
2. The second researcher rolled them up and take on piece of paper at random and researcher take one name as the experimental class.
3. Finally, the class chosen as the sample was class XI IPX 3 as the experimental class.

The class consisted of 33 students.

It cloud be seen in the following table:

Table 3.3 Sample of the study

No	Class	Total Students	Description
1	XI. IPA 3	33	Experiment Class

Source: MAN 1 OKU (2022-2023)

C. Technique for Collecting Data

In this collection data, researcher was used listening test. Moreover, according to Riduwan (2017, p.20) in the preparation of research instruments, you must know and understand the types of measurement scales and types of measurement scales so that the instruments can be measure according to what they want to measure and can be trust and consistent with the problems of research instruments. Therefore,

researchers choose instruments ;

1. Test

A test is a research instrument used to obtain information used listening test that was be answered by respondents over a longer period. More than that according to Rusli luan (2020, p.10) a test is a tool used to obtain information about a person. Tests are given to measure a student's ability to master English vocabulary. There are two kinds of tests used by researchers:

a. Pre-test

A pre-test is given to find out the student's ability before getting treatment.

b. Post-test

Post-tests are given after the application of strategies in the learning process to find out the development of students' abilities.

For collection data researchers used 10 with blank paragraph, this test is to complete the missing vocabulary. 5 multiple choice tests to determine the main idea of short dialogue. 5 multiple choice tests to determine the details information of short dialogue.

Table 3.4 Experimental Class

No	Date	Activities	Source
1	April 14 th , 2023	Pre-test and Treatment 1	- Pathway to English
2	April 15 th , 2023	Treatment 2	- Pathway to English - Youtube
3	Mei 3 th , 2023	Treatment 3	- Pathway to English - Youtube
4	Mei 10 th , 2023	Post-test and Treatment 4	- Pathway to English - Youtube

D. Validity and Reliability

1. Validity of The Test

In this study, the researcher used one type of validity namely content validity. In connection, with the statement of Cohen et. Al (2017, p.43) states that validity is an important key to effective research. If the research is invalid then it is worthless. So validity is an important requirement in quantitative and qualitative research.

Validity is used to measure the validity of an instrument to be used. More than that, according to Cohen (2018, p.602), which states validity is a test of testing what should be tested so that it should measure what should be measured. A test was have a high content of the term representing a population of possible tasks. To make a validity test, the author was design items on the test that are by the purpose of the test, namely knowing the abilities of eleventh-grade students MAN 1 OKU.

Table 3.5 Test specification of the item

No	Indicator	Format of test	Total number
1	Students are able to complete the missing word in the text (Vocab)	1,2,3,4,5,6,7,8,9,10	10
2	Students' are able to find main idea of the short dialogue	11,12,,17,18,20	5
3	Students are able to find the details of the short dialogue	13,14,15,16,19	5

The reseacher determined the significance level of this test was 5% significance table from the confidence interval 95% and the value r_{table} of this test was 0,320 with

(df= N-2=33). The criteria of Correlation Pearson thus were;

- a. If $r_{\text{count}} > r_{\text{table}}$, the item was valid.
- b. If $r_{\text{count}} < r_{\text{table}}$, the item was invalid.

The result of the validity test of research instrument (test) could be seen on the table follows;

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Table 3.6 Validity of the items

No	Number of item	R-count	R-table	Conclusion
1	item 1	0.477	0.320	Valid
2	item 2	0.572	0.320	Valid
3	item 3	0.304	0.320	Invalid
4	item 4	0.218	0.320	Invalid
5	item 5	0.480	0.320	Valid
6	item 6	0.406	0.320	Valid
7	item 7	0.508	0.320	Valid
8	item 8	0.675	0.320	Valid
9	item 9	0.-158	0.320	Invalid
10	item 10	0.454	0.320	Valid
11	item 11	0.407	0.320	Valid
12	item 12	0.114	0.320	Invalid
13	item 13	0.286	0.320	Invalid
14	item 14	0.483	0.320	Valid
15	item 15	0.600	0.320	Valid
16	item 16	0.551	0.320	Valid

17	item 17	0.393	0.320	Valid
18	item 18	0.194	0.320	Invalid
19	item 19	0.482	0.320	Valid
20	item 20	0.265	0.320	Invalid
21	item 21	0.686	0.320	Valid
22	item 22	0.286	0.320	Invalid
23	item 23	0.301	0.320	Invalid
24	item 24	0.692	0.320	Valid
25	item 25	0.572	0.320	Valid
26	item 26	0.513	0.320	Valid
27	item 27	0.572	0.320	Valid
28	item 28	0.374	0.320	Valid
29	item 29	0.527	0.320	Valid
30	item 30	0.305	0.320	Invalid

Based on table 3.5 show that there were twenty item valid with $r_{\text{count}} > r_{\text{table}}$, (item 1, item 2, item 5, item 6, item 7, item 8, item 10, item 11, item 14, item 15, item 16, item 17, item 19, item 21, item 24, item 25, item 26, item 27, item 28, item 29) and other 10 item was invalid because $r_{\text{count}} < r_{\text{table}}$. So, the researcher used 20 item valid as research instrument to pre-test and post-test.

2. Reliability of The Test

Reliability is a reliability test used to measure how consistent the test scores of evaluation results from another measurement. With respect to the statement of Frankel and Wallen (2021, p.25), reliability refers to the consistency of the score

obtain and how consistent the score is for each individual from one administration ,of an instrument to another and from one set of items to another. To estimate whether the instrument is reliable or not, researchers used the alpha coefficient (Cronbach's Alpa), where the alpha score must be greater than 0.70 and the test is declared reliable. More than that according to Frankel and Wallen (2021, p.25) states that the purpose of the study, a usedful rule of thumb that reliability should be 0.70 Researcher was conducted a try out to non-sample class XI IPA 1. To findout whether each item of the question is reliable or not, the researcher concluded two hypotheses as follows:

1. If Cronbach's Alpa point is less than 0.70 then the item is not reliable.
2. If Cronbach's Alpa points are more than 0.70 then the item is declaredreliable.

Table 3.7 Reliability of the items

Reliability Statistics	
Cronbach's Alpha	N of Items
.840	30

Based on table 3.6, show that Cronbach's Alpha was 0,840, and number of items was 30 item. The score obtained of Cronbach's Alpha was 0,840 more than 0,70, it means that the test was reliable

E. Technique for Analyzing the Data

In the technique of analyzing researchers' data used test data;

1. Scoring The Test

Calculate the scoring of the test the researcher uses the following formula in calculating the students' score:

$$S = \frac{X}{Q} \times 100\%$$

Where:

S : Students' score

X : The number of correct answer

Q : Total of question

2. Percentage of The Data

A test is an instrument or procedure design to obtain student performance in order to measure their achievement against certain criteria. Researchers used listening test instruments to determine students' learning progress by used songs. After calculating a student's grade, researchers calculated the average to measure the increase in a student's grade on each cycle. More than that according to Nana Sudjana (2020, p.11) who said that the mean or average score is obtained by summing the student's score and dividing by the number of students.

So the formula is:

$$\bar{x} = \frac{\sum x}{N}$$

X = Mean

$\sum x$ = total set score

N = number of students

From this formula, researcher analysis the results test results to determine the improvement of students' abilities in listening ability after being taught to used songs.

After finding the average of each test, then the next step is interpreting what it means. The interpretation of the average lead us to know to what extent the mastery of listening comprehension before and after treatment was be. In line with this,

Arikunto (2013, p.33) classifies the range of scores with its probable class performance. The classification is as the following:

Table 3.8 Classification of the Range of Score

Test Score	Portable Class Performance
80-100	Excellent
66-79	Good
56-65	Average
30-55	Poor
0-29	Fail

Source: Arikunto,2013

3. Inferencial Statistics

According to Sugiyono (2015), inferential statistics is a statistical technique used to analyze sample data and the results are generalized (inferentialized) to the population where the sample is taken. The purpose of used inferential statistics is the possibility of making predictions from the data obtained. With inferential we can observe or predict cases from a sample that is within the population. According to Sugiyono (2015), paired sample t-test is one of the test methods used to assess the effectiveness of treatment, marked by an average difference after treatment. To make it easier to analyze the data, this study used SPSS version 26 software. Decision-making guidelines in paired sample t-tests based on signification values (Sig). The results of the SPSS output, the criteria for testing hypothesis results are as follows:

If the value of $\text{Sig.} > (0.05)$ then H_a is Rejected α

If the value of $\text{Sig.} < (0.05)$ then H_a is Accepted α