

CHAPTER III

RESEARCH METHOD

A. Research Design

This research used an experimental design. An experimental design is a procedure in quantitative research in which researchers determine whether an activity or material affects the results for participants (Creswell, 2012). The purpose of the experiment is to assign participants to experience something, allow some participants to experience something different, and then determine whether participants who are familiar with the concept, practice, or process are superior to participants who are not given the same thing. This aims to determine the potential causal relationship between independent and dependent variables, researchers conduct experiments.

The type of experimental design that used in this research is quasi-experimental design. The types of quasi experiments that used in this research is post-test only to compare the outcomes between the two groups (Creswell, 2012). The experimental group received treatments by using shadowing technique, while the control group did not.

Table 3.1
Design 1: Post-test only design

Group	treatment	Posttest
Experiment	<i>X</i>	<i>Y</i> 2
Control	-	<i>Y</i> 2

This design was to evaluated the effectiveness of shadowing technique in teaching listening for seventh grade of junior high school. The treatment was only for the experimental group, and the researcher gave a post-test only for both classes. If the experimental group shows significantly greater achievement on the post-test, it can be concluded that shadowing technique is effective.

The objectives of the research was to investigated significant effect of shadowing technique towards students' listening comprehension. There are two variables in this research, the students' listening comprehension is a dependent variable, while shadowing technique is an independent variable.

B. Population of the Research

Population is a group of individuals who have the same characteristic (Creswell 2012). The population of this research is the 7th grade of SMP N 6 Pariaman as population It has 4 classes. Population data in this study can be seen through the following table.

Table 3.2
Population of The Research

No.	class	students
1.	VII 1	31
2.	VII 2	29
3.	VII 3	30
4.	VII 4	30
total	4 classes	120

From the table above, the total of the populations were 120 students from four classes. There are 31 students in class VII 1; 29 students in class

VII 2; 30 students in class VII 3; and 30 students in class VII 4. From all of this classes, the researcher only took two classes as the sample of this research.

C. Sample & Sampling Technique

Research sample is a part of the population that may be representative of the total population and is utilized as a data source. To make sure the sample is representative, sampling procedures must be applied. According to Cresswell (2012, p.142) "Samples are subgroups of the target population that will be studied by researchers to make generalizations about the target population." The researcher used cluster random sampling as a technique. Cluster random sampling is a method used when the population is divided into naturally existing groups, known as clusters. These clusters can be geographical units like states, districts, cities, neighborhoods, or institutional groups such as schools and classrooms. Instead of selecting individuals randomly throughout the entire population, entire clusters are randomly chosen, and all members within those selected clusters are included in the sample. A researcher may choose a single street and randomly sample the people who live there (Schreiber & Kimberly, 2011). The researcher chose two classes from four classes. The researcher selected two samples from four classes using the following steps: The author wrote down the four classes on pieces of paper, then rolled up the papers and placed them in a glass. After that, the author shook the glass and took out the first roll of paper as the experimental class (VII 1) and the second roll of paper as the control class (VII 2).

table 3.3
Sample of The Research

No.	class	stuednts
1.	VII 1	31
2.	VII 3	30
total	2 classes	61

From the steps above, the VII 1 class selected as the experimental class with 31 students, and the VII 3 class selected as the control class with 30 students. The total sample for this research were 61 students.

D. Instrument and Technique of Collecting Data

1. Instrument

Research instrument was designed for students' posttest activities. The type of test that used in this research is listening test to fill in the blank and multiple choice. Hughes (2003) claimed that multiple choice, short answer, gap filling, information transfer, partial dictation and transcription can be used for the measure of listening test.

The researcher had tried out 40 multiple choice and fill the blank questions in different classes, namely in VII 4. After carrying out the try out result from the participant, the researcher tested the validity of the questions based on the result of try out. The researcher used 25 multiple choice after validity and reliability tested.

Table 3.4
The Blueprint of Instrument Test

Variable	Indicators	Number of items
Listening skill	Students' ability in understanding what is the main idea of the text.	11

	Students' ability in analyzing the spelling of word and adjective in listening test.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25
	Students' understanding the listening for specific information.	12, 13, 14
	Students' ability in understanding the content of the text.	15

Before the items of the test was used for the post-test, the researcher conducted a validity and reliability test first from the result of the tests that have been tried out. the following were the results of the validity and reliability tests.

a. Validity of Test

In quantitative research, to obtain valid, reliable and objective data, researchers use valid and reliable instruments, select representative samples from the entire population, and ensure that data collection and analysis is carried out correctly. According to Cresswell (2012), validity involves gathering strong evidence to show that the interpretation of test results (scores that reflect the construct measured by the test) is appropriate for the intended purpose.

In other words, validity refers to the extent to which conclusions drawn from data are appropriate, meaningful, and relevant to the assessment objectives. In this study, to assess test validity, researchers applied construct validity. To determine the validity of the instrument, the researcher calculated it using SPSS 25 with pearson correlation test.

The standard value for validity is $r_{\text{item}} > r_{\text{table}}$. Based on the results of the tryout, it was concluded that from the 40 items there are 25 items were selected because they were valid. The following table shows the number of items that were chosen for the test.

Table 3.5
Table the item validity of try out

No. Item	r table	Pearson correlation (r hitung)	Result	No. Item	r table	Pearson correlation (r hitung)	Result
1	0,349	0,619	VALID	20	0,349	0,621	VALID
3	0,349	0,654	VALID	26	0,349	0,843	VALID
5	0,349	0,788	VALID	27	0,349	0,684	VALID
7	0,349	0,785	VALID	29	0,349	0,810	VALID
8	0,349	0,855	VALID	31	0,349	0,521	VALID
9	0,349	0,570	VALID	32	0,349	0,832	VALID
12	0,349	0,769	VALID	34	0,349	0,548	VALID
13	0,349	0,914	VALID	35	0,349	0,662	VALID
14	0,349	0,914	VALID	36	0,349	0,717	VALID
15	0,349	0,864	VALID	37	0,349	0,648	VALID
16	0,349	0,559	VALID	38	0,349	0,621	VALID
17	0,349	0,641	VALID				
18	0,349	0,591	VALID				
19	0,349	0,522	VALID				

The researcher only chose 25 items were valid for the test to simplify the scoring process. All of the valid items were choose based on the validity and the level of difficulty of the items. For a more complete table, see the appendix.

b. Reliability of Test

According to Irwan Sulistyanto in Surapranata (2005) states that reliability means normal score which is gained by the same subject when did the repeatedly test in the difference situation. The function of test reliability is to determine how much variability which happens because of the fault of measurement and how many the real test score variability. Reliability has two constant, internal and external. Internal means that the items of questions are homogeny from the difficulty until the form of the test while the external means level of the items to produce the score which constant every time.

In this research, SPSS 25 was used to calculate the reliability of the items, the test was used for this, namely Cronbach's alpha. The result of reliability test as follows:

Table 3.6
Reliability Statistic

Reliability Statistics	
Cronbach's Alpha	N of Items
.752	40

Based on the table, it can be seen the result of Cronbach's alpha is 0.752 which higher than 0.70. It means, the items have sufficient reliability and are suitable for use in research.

2. Data collecting Technique

The test was used to collect data in this research. In this case, the test only conducted once for both classes since the researcher only used the post-

test only design. This test was given for both classes after the researcher gave the treatment for the experimental class.

This test was conducted in June 2025, in both classes, and lasted around 60 minutes. Students were asked to listen to the audio used for the test, and then they were asked to answer multiple-choice questions and fill in the blanks based on what they heard. After the test, the researcher collected the students' work sheets, then checked and used the results of it for the data.

The researcher gave some treatment to the students of experimental class before the test. The procedure of the treatment in this research was carried out through four meetings with the allocation of two times forty minutes for each meeting. The teaching process followed the scientific approach and applied the shadowing technique as the main strategy to improve students' listening comprehension. The activities were divided into three stages, namely pre-activity, whilst-activity, and post-activity.

In the pre-activity, the teacher began the lesson by greeting the students, checking attendance, delivering apperception through guiding questions or visual stimulus, and explaining the learning objectives. During the whilst-activity, the teacher implemented the stages of the scientific approach by asking students to observe a video or pictures related to descriptive texts, guiding them to formulate questions, and exploring the material by explaining the function and structure of descriptive texts. At this stage, the shadowing technique was applied by asking students to listen to

an audio recording, first silently and then while following the text, and finally to shadow the speaker by repeating what they heard simultaneously. This process was repeated several times to enhance their accuracy and comprehension, followed by discussion and clarification of vocabulary. Each meeting had a different topic of descriptive text: the first meeting discussed “describing people”, the second meeting focused on “my family”, the third meeting explored “pet”, and the fourth meeting introduced “wild animal”. In the post-activity, the teacher guided the students to conclude the lesson, reflect on their learning, and closed the class with motivation and a prayer.

Through those procedure, students were expected to improve their ability to identify information, recognize vocabulary, and comprehend descriptive texts more effectively through the use of shadowing technique.

E. Technique of Data Analysis

In order to find out whether there is or not a significant effect of using shadowing technique on students listening comprehension, the researcher analyzed the data using several steps, as follow:

1. Descriptive Analysis

Descriptive analysis includes sample numbers, lowest and maximum scores, as well as mean and standard deviation. A descriptive analysis was conducted using students' post-test results. In this case, the researcher using the SPSS program was used to calculate all the data collected in this study, namely the paired sample T-test. The researcher used

SPSS 25.0 version. Researchers wanted to know the effectiveness of shadowing technique on students' listening comprehension that researchers gave treatment four times. Researchers showed describing family, and pet videos to students using YouTube media. In the last meeting, students were given a post-test. At the end, the post-test scores were compared to see if there was a significant difference between the control class and the experimental class. In this research, the researcher used these formula as follow:

- a. Finding mean of variable:

$$M_x = \frac{\sum X}{N}$$

- b. Finding standard deviation:

$$SD = \sqrt{\frac{\sum X^2}{N}}$$

- c. Finding degree of freedom

$$df = (N - 2)$$

Note:

M_x : Mean of variable

$\sum X$: Total Score

N : Number of cases

SD : Standard deviation

df : Degree of freedom

2. Normality Test

The normality test is used to determine whether the data is normally distributed, which is essential for selecting appropriate parametric or non-parametric statistical methods. In this research, the normality test was carried out on the post-test data from both the experimental and control groups using Saphiro-wilk test through the statistical package for the Social Science (SPSS) version 25.0. In the Saphiro-Wilk test the hypothesis proposed is:

According to Arifin (2017), the criteria for interpreting the results of the Shapiro-Wilk normality test in SPSS are as follow:

- a. If the significance value $(p) > 0.05$, the data is considered to be normally distributed.
- b. If the significance value $(p) < 0.05$, the data is considered not to be normally distributed.

Once the data was confirmed to be normally distributed, a homogeneity variances test was conducted using the Levene test with SPSS version 25.0.

3. Homogeneity Test

Homogeneity test is conducted to determine whether the students in the class have homogeneous variances or not. Homogeneity test of two variances on the results of the post-test experiment class and control class data using Levene's test with statistical package for social sciences (SPSS) 25. The decision criteria in the homogeneity test in SPSS according to Arifin (2017):

Based on the table 3.3, it can be seen that the results based in the mean significance value (sig) are $0.81 > 0.05$,

- a. If the significance value (p) < 0.05 means that the data is declared non-homogeneous.
- b. If the significance value (p) > 0.05 means that the data is declared homogenous.

Table 3.7
Test of Homogeneity

		Test of Homogeneity of Variances			
		Levene Statistic	df1	df2	Sig.
Hasil Belajar Siswa	Based on Mean	.058	1	59	.810
	Based on Median	.126	1	59	.724
	Based on Median and with adjusted df	.126	1	58.568	.724
	Based on trimmed mean	.051	1	59	.823

Based on the table 3.3, it can be seen that the results based in the mean significance value (sig) are $0.81 > 0.05$, it can be conclude that both post-test experimental and control class are homogenous.

4. Hypothesis Testing

Hypothesis testing is a statistical method used to determine whether there is enough evidence in a sample of data to draw conclusions about a population. This data analysis is conducted to test the proposed hypothesis. After conducting normality and homogeneity tests, which show that the data is normally distributed and homogeneous, parametric tests (t-test) can be used.

T-test is a testing method of parametric statistical tests. The t-test is a test that shows how far the influence of an independent variable influences the dependent variable. This t statistical test or t-test was carried out using a significance level of 0.05 ($\alpha=5\%$). Acceptance or rejection of this hypothesis test is carried out using the following criteria:

- 1) If the significant value is > 0.05 , then the null hypothesis (H_0) is accepted and the alternative hypothesis (H_1) is rejected. This means that it is partially an independent This variable does not have a significant influence on the dependent variable.
- 2) If the significant value is < 0.05 then the null hypothesis (H_0) is rejected and the alternatives hypothesis (H_1) is accepted. This means that partially the independent variable has a significant influence on the dependent variable.