

CHAPTER III

RESEARCH METHOD

A. Research Design

In this research, researchers used quasi-experimental research methods. According Sugiyono (2016:77), Quasi Experimental design is used because in reality it is difficult to get a control group used for research. Where the experimental group and control group are chosen randomly. This method was chosen because the main aim of this research was to determine the impact of a treatment.

B. Variable of the Research

In this study, there are two variables, namely the independent variable and the dependent variable. This is in accordance with the statement of Nana Sudjana (1988:24) who stated that variables in research can be divided into two categories, namely independent variables and dependent variables. The independent variable is the variable that is intentionally given or manipulated to determine its effect on the dependent variable. The dependent variable is the variable that appears as a result of the independent variable, therefore it becomes the indicator of the effect. In this research, the use of Contextual Teaching and Learning (CTL) is the independent variable (X), while the students' writing skill in narrative text is the dependent variable (Y).

C. Population and Sample

1. Population

The population used in this research were all class VIII at IJHS 3 Pariaman. A population, according to Sugiyono (2016:80), is a

generalization made up of things or subjects with specific characteristics and features chosen by the researcher for analysis before conclusions are made. The total number of population is 189 students from seventh classes (VIII.1-VIII.7).

Table 3.1 The Population

Class	Number of Students
VIII. 1	32
VIII. 2	32
VIII. 3	29
VIII. 4	29
VIII.5	25
VIII.6	22
VIII. 7	20
Total	189

2. Sample

The samples of this research are class VIII.3 consist of 29 students and class VIII.4 consist of 29 students. These classes were selected using a simple random sampling technique, in which each member of the population had an equal chance of being selected. A coin tossing method was applied to randomly assign the classes as experimental and control groups. According to Cresswell (2012:142), simple random sampling in which all individuals have the same probability of being selected from the population.

D. Research Instrument

The main instrument used in this research was a writing test, designed to assess students' ability in constructing a well organized and coherent

written text based on the genre being studied. According to Brown (2004:3), research instruments are essential tools used to collect data and measure learners' achievement in language learning. In this study, the writing test was used to evaluate students' writing performance before and after the implementation of the teaching technique.

To ensure the quality of the instrument, the researcher applied content validity. As stated by Ary et al. (2010:226), content validity refers to the extent to which a measuring instrument provides adequate coverage of the topic under study. In this research, expert judgment from English education lecturers was employed to validate the instrument, ensuring that it accurately measured students' writing ability in accordance with curriculum standards.

In assessing students' writing performance, the researcher adopted a scoring rubric from Jacob et al. (1981), which includes five components: Content, Organization, Vocabulary, Language Use, and Mechanics. Complete rubrics can be seen in appendix. The only instrument of this study was test. It is shown in the writing test table blueprint below:

Table 3.2 Blue Print Writing Test

No. of Students	Type	Text Type	Topic	Time Allocation	Indicators					Score
					C	O	V	L	M	
1. 2. 3. 4. 5. ↓ 29.	Writing Test	Narrative Text	The Legend of Tabuik	60 Minutes						

Table 3.3 Procedures of Experiment

Fase	Learning activity	CTL	Researcher Activity	Time
Pre Teaching Activity	1.Apperception	Constructivisme	- Greeting - Praying - Checking student attendance list	5 Minutes
	2. Motivation	Questioning, modelling	- The researcher gives the pemantic question - The researcher introduces the topic to be taught - The researcher show the videos based on the topics to be taught	10 Minutes
Main Activity	1. building Knowledge of Field (BKOF)	Constructivisme, Inquiry	The students watch the video and then discuss what they observe	10 Minutes
	2. Modelling of the text	Modeling, Inquiry	The researcher	10 Minutes

	(MOT)		provided an example of a narrative text to be read and then discussed the strcture of the narrative text.	
	3. Joint Contruction of the text (JCOT)	Learning Community	The students compose verbal and nominal sentences based on the video and text in pairs	10 Minutes
	4. Independent Contruction of the text (ICOT)	Inquiry, Authentic Assesment	- The researcher gave a mini lesson about verbal and nominal sentences in the past tense - The students fill out a KWL chart and write about what they learned	25 Minutes
Post Teaching	Reflection and closing	Authentic Assesment	The students conclude today's learning and the researcher provides reinforcement, ending with a prayer together	10 Minutes
Total				80 Minutes

Based on Table 3.3 above, one class is the experimental group and the other class is the control group. After three meetings, the researcher administered a final test to both the experimental and control groups. This time was allotted to obtain the final results of this study and to determine whether students' writing skills could be improved through the CTL approach.

E. Techniques of Data Collection

Collecting the data is one the important things in this research. To make data accurately, the researcher collected the data by using the test to

students' writing skills. The test was given to get the objectives data of students' vocabulary by using the treatments. The researcher give the the treatment using demonstration technique to the students who are in the experimental class, while the control class is taught using the conventional technique.

F. Techniques of Data Analysis

The data in this study were analyzed using a quantitative approach. Quantitative analysis was conducted because the data obtained were in the form of numbers from students' narrative writing test results. According to Sugiyono (2016), quantitative data analysis is a method of analyzing numerical data using statistical calculations to test previously formulated hypotheses. Through this analysis, the researcher sought to determine whether the use of the Contextual Teaching and Learning (CTL) approach significantly influenced students' narrative writing skills. The data analysis steps used in this study are as follows:

1. Description of Data

Descriptive statistics are used to present and describe data as it is without generalizing (Sugiyono, 2016). Data obtained from the pre-test and post-test results of students in both the experimental and control classes are analyzed to determine differences in learning outcomes before and after the treatment. The purpose of this stage is to provide an overview of students' narrative writing abilities and to identify changes after the implementation of CTL.

2. Descriptive Analysis

Descriptive analysis included the number of participants, minimum and maximum scores, mean scores, and standard deviation. Data were analyzed in two ways: manually and with the help of SPSS. SPSS was used to calculate descriptive data and conduct paired sample t-tests.

Before receiving the treatment, students were given a pre-test to determine their initial narrative writing skills. Afterward, the experimental class was taught using the CTL approach, while the control class used conventional methods. After the treatment was completed, students were given a post-test. A comparison of the average pre-test and post-test scores was used to determine any significant differences between the two classes.

3. Formula of Data Analysis

Although the data were processed using SPSS version 25, the following statistical formulas were used as the theoretical basis for the computation. These formulas explain how SPSS calculates statistical values such as the mean, standard deviation, and t-test used in this research.

1) Mean

The mean is used to find the average score of students in both the control and experimental classes. The formula:

$$\bar{X} = \Sigma X / N$$

Description:

$$\bar{X} = \text{Average/mean}$$

$$\Sigma X = \text{Total student scores}$$

N = Number of students

2) Standar Deviation

This standard deviation is used to identify how far the students' scores vary from the mean. The formula:

$$S = \sqrt{(\Sigma(X - \bar{X})^2 / (N - 1))}$$

Description :

S = Standard deviation

X = Score of each student

$\bar{X}$ = Average

N = Number of students

3) T-test

The independent sample t-test is used to find out whether there is a significant difference between the control and experimental classes. The formula:

$$t = (\bar{X}_1 - \bar{X}_2) / \sqrt{((S_1^2 / n_1) + (S_2^2 / n_2))}$$

Description :

$\bar{X}_1$ = Average experimental class

$\bar{X}_2$ = Average control class

S_1^2, S_2^2 = variance of each class

n_1, n_2 = Number of students in each class

The decision rule is as follows:

- If Sig. (2-tailed) < 0.05  there is a significant difference between the two classes

- If Sig. (2-tailed) > 0.05  there is no significant difference between the classes.

4. Pre Requisite Data Analysis

1) Normality Test

The normality test is used to determine the shape of the data distribution (sample), whether the data obtained in the research is normally or not normally distributed. Calculations in this study used SPSS Statistics 22 using the Kolmogorov-Smirnov test. This criterion is significant for two calculation results that are greater than > 0.05, meaning they are normally distributed.

2) Homogeneity test

The homogeneity test is used to determine whether the data obtained from research results are homogeneous (the same) or not. The homogeneity test can be carried out after the data meets the normality requirements, which means the distribution of the data must be normal.

Calculations in this study used SPSS Statistics 22. This test is used as a prerequisite for the homogeneity of variance test. To test homogeneity, use the Levenet test. The significant criterion for a two-sided test is if the calculation result is greater than > 0.05, meaning the variance in each group is the same (homogeneous).

3) T-test

In analyzing the research data, the researcher used a statistical technique, namely the t-test, to determine whether there was a

significant difference between students' pre-test and post-test scores before and after being treated using the Contextual Teaching and Learning (CTL) approach in learning to write narrative texts. The t-test was used to determine the extent to which the improvement in students' writing skills could be said to be statistically significant.

According to Al-Achi (2019), the t-test is a statistical test used to compare two averages and determine whether the difference between them occurred by chance or due to the influence of a particular treatment. Therefore, in this study, the t-test was used to determine whether the implementation of CTL had a significant impact on students' narrative writing skills.

Furthermore, Liang, Fu, and Wang (2019) explained that using the t-test allows researchers to objectively analyze treatment effectiveness by considering the data variations that arise within the sample group. Therefore, the researchers used SPSS version 22 to calculate the t-test values to ensure more accurate and valid analysis results. The steps in this data analysis include:

1. Calculate the average (mean) score of students' pre-test and post-test results.
2. Determine the difference between the pre-test and post-test scores.
3. Use a paired sample t-test in SPSS to determine a significant difference between the two scores.

4. Interpret the significance value (Sig. 2-tailed) to determine whether the alternative hypothesis (H_a) is accepted or rejected.

If the test results show a significance value <0.05 , it can be concluded that there is a significant difference between the pre-test and post-test results, which means that the application of the CTL approach has an effect on improving students' narrative writing skills.

