

CHAPTER III

RESEARCH METHODOLOGY

A. Research Design

Research is a systematic and disciplined inquiry that aims to discover, interpret, and expand knowledge in a specific field of study (Creswell 2014). Research is nothing more than finding out what you need to know (Dörnyei, 2007; Kumar, 2011). It serves as a foundation for evidence-based decision-making and contributes to the advancement of academic disciplines (Best & Kahn, 2016). Moreover, effective research follows a rigorous methodology to ensure reliability, validity, and objectivity in its findings (Mackey & Gass, 2015).

This study employs a quantitative experimental design, using post-test method to assess the effectiveness of diary-keeping in improving grammatical accuracy.

The study will involve two groups of students from a selected educational institution:

- 1) Experimental Group: Students who engage in diary-keeping for a set period.
- 2) Control Group: Students who follow traditional grammar instruction without diary-keeping.

Both groups will complete test after the study period to measure their improvements in grammatical accuracy.

B. Population and Sample

1. Population of the research

The population of this research was students of MAN 1 PADANG PARIAMAN which consist two classes of class XI. The population of this research is 67 students. They were divided into 2 classes. The distribution of population could be seen in the table below :

Table 3.1 Population of the Research

No.	Class	Number of Students'
1.	XI F6	33
2.	XI F7	34
	TOTAL	67

Source : English teacher at class XI MAN 1 PADANG PARIAMAN

This researcher started on August would be end october. This research gave treatment for five times, after giving treatment the researcher gave both classes post-test in order to know the student's ability and competence about constructing simple past sentences. And to see the use of Diary Writing gave significance effect to student student's ability and competence about constructing simple past sentences, the researcher compared the result of post-test of both classes.

2. Sample of the research

In research, a sample refers to a subset of the population that is selected for study purposes. The sample represents a smaller, manageable group that researchers use to make inferences and draw conclusions about the entire

population (Bhardwaj, 2019). So, the researcher can use sample taken from population (Cochran 1977 and Kish 1965). Since the total of population was very large, the researcher used cluster random sampling to get sample. Cluster sampling is particularly useful for large and geographically dispersed populations, as it simplifies the data collection process (Tashakkori & Teddlie 2010).

A second reason to use experts is to validate another sampling method (Singh, 2007). For example, let's say you want to use snowball sampling to identify addicts in your area. You are concerned that using this non-random sampling method will adversely affect your results and the way your results are perceived by others. You can ask a panel of experts their opinion on whether snowball sampling is the most appropriate sampling method.

To get representative sample of this research, the researcher did some steps: *first*, collecting the score of English test the entire students class XI F6 from English teacher. *Second*, Test of normality, test of normality has an objective to know the population normal or not.

The normality analyzed by using SPSS and Kolmogorov - Smirnov and Shapiro Wilk. Based on that test the data stated normal if every classes has significance or probability score bigger than 0,05.

After doing the normality test, researcher analyzed the homogeneous variation test to know whether the sample homogeneity or not. It was conducted by using SPSS with Levene's test. If the data were significant or more than 0,05, it

means that data was homogeneous. After analyzing the homogeneity test, researcher decided to choose two classes as the sample of the research as randomly.

To get representative sample of this research the researcher did these steps :

1. Collect the score of English test data from all student of XI F at MAN 1 Padang Pariaman.
2. Test of Normality

Normality test had an objective to know the population normal or not. Based on analyzed by SPSS 16 program all the groups the population the result of P-value higher 0,05, it means that data was normal.

Test of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig	Statistic	df	Sig
XI F6	.273	34	.169	.969	34	.908
XI F7	.277	33	.169	.969	33	.906

a. Lilliefors Significance Correction

This is a lower bound of the true significance

3. Test of homogenous variances

After done normality test, the researcher analyzed the homogenous variation test. This test has an objective as to know the sample homogeneity or not.

Test of Homogeny of Variances

Result of English Test

Norm. Min-Max	Df1	Df2	Sig.
167	34	33	36

4. After got the classes, sample of this research consisted of two groups, an experimental group and control group. Based on three classes above, the researcher chose two classes as the sample. In determining experimental group and control groups, the researcher cluster random sampling. So, XI F6 was selected to be experimental class and class XI F7 was selected to be control class.

C. Instrument

In studies examining the effectiveness of diary writing in enhancing students' mastery of the simple past tense, researchers have only using post test. This instrument is used to evaluate students' proficiency in constructing sentences using the simple past tense after the diary writing intervention. After a period of regular diary writing, a post-test is administered to measure any improvements.

D. Technique of Data Collection

1. Post-Writing Assessments

The post test will be conducted by students (Brown 2004). Post test measure improvements. Hughes 2003 states that post-tests help determine whether learning objectives have been met. Scores will be compared using

paired t-tests and determine statistical significance. Field 2018 highlights that paired t-tests are effective for comparing pre- and post-intervention results in educational studies.

2. Error Analysis

Writing samples will be analyzed for quantifiable grammatical errors, such as incorrect verb tense usage, irregular verb errors, and auxiliary verb mistakes (Ellis 1994). Errors will be examined within the framework of interlanguage theory to understand how learners develop their second-language competence. (Selinker 1972) emphasized that analyzing learner errors helps identify systematic patterns in language acquisition. Data will be categorized, and error reduction rates will be calculated (Corder 1967).

3. Developmental and Transfer Errors

Errors will be categorized as developmental (arising naturally in language learning) or transfer errors (caused by interference from the first language). (Richards 1971) highlighted that distinguishing these error types helps in designing effective teaching interventions (Corder 1974; Selinker 1972).

E. Procedure of The Research

The researcher used two classes to collect the data, the researcher taught the students used by Diary Writing Media for experimental class and control class. However, the material of the teaching was the same writing material. In short, the writer is proposed this procedure.

Split students into two groups:

1. Experimental group (writes diaries regularly).
2. Control group (no diary writing).



Table 3.2 The Procedure of Teaching

1.	Pre Activities	Aperception Good Morning, my student ! How are you today ? I'm very well Thank you Are you ready to study right , now ? Who is absent today ? Ok Before we study, let's basmallah together and save your handphone, another book without english. Ok Class. Before to material today, now I want to give some question to you Do you know ? Before you go to school, what do you do first ? Wake Up, Take a bath, Reading Al-Qur'an, Praying Subuh. Before go to school, has it passed or is it passing ? Of course. It has passed	5 Minutes
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		What is tense in English to describe about an activity that happened in the past time ? Good. Simple Past Tense. Now we are going to talk about Simple Past Tense.	
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2.	Main Activities	Observing 1. Teacher ask students to observe.  2. Teacher give some questions based on observation. 3. Teacher ask the students to observe diary writing in the class. 4. Teacher says about material 5. Teacher says about the goal of material. 6. Teacher explain about material by detail. Questioning 1. With the media brought by the teacher, the teacher asks questions related to the media and then relates them to the learning material. 2. Teacher explain the meaning, goal, formula, and material about simple past tense.	45 Minutes
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		Exploring 1. Guided Diary Entries Teachers can provide students with prompts that require them to write about specific past events, ensuring that they practice using the simple past tense. 2. Error Analysis and Self-Reflection Diary-keeping provides students with the opportunity to self-correct and analyze their constructional sentences. 3. Teacher Feedback and Scaffolding Providing feedback on students' diary entries is essential for their development. 4. Integration with Other Language Skills Diary-writing can be complemented with speaking exercises where students share their diary entries aloud, promoting both written and oral proficiency.	
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		Assosiating 1. Students identify about the simple past tense based on explanation from teacher . 2. Students recognize and identify the formula of simple past tense with each other. 3. Teacher asks students to correct their task for other own. Communicating 1. Teacher asks to communicate their writing. 2. Teacher and other students have to give confirmation about their writing. 3. Teacher evaluation the students work	
3.	Post Teaching Activity	1. The students give responses to the feedback given by the teacher. 2. The students with the teacher guidance, conclude what they have already learned. 3. The teacher informs the students about materials to be learned in the next meeting.	5 Minutes

		4. Teacher and students close the class and pray	
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F. Technique of Data Analysis

In analyzing students' test score; there are some steps that have to do before analyzing the different mean using t-test formula as follows :

1. This formula applied to decide mean of students' test score in experimental and control classes

$$\bar{X}_1 = \frac{\sum F_1 X_1}{\sum F_1}$$

$$\sum F_1$$

$$\bar{X}_2 = \frac{\sum F_2 X_2}{\sum F_2}$$

$$\sum F_2$$

2. This formula used to decide standard deviation of experimental class and control class

$$S^2_1 = \frac{\sum F_1 (X_1 - \bar{X}_1)^2}{\sum F_1}$$

$$\sum F_1$$

$$S^2_2 = \frac{\sum F_2 (X_2 - \bar{X}_2)^2}{\sum F_2}$$

$$\sum F_2$$

And the formula of t-test is :

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S^2}{n_1} + \frac{S^2}{n_2}}}$$

$$S^2 = \frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}$$

$$S^2 = \frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}$$

t : The value of t calculate

$\bar{X}_1$: Mean score of experimental class

$\bar{X}_2$: Mean score of control class

n_1 : The total subject of experimental class

n_2 : The total subject of control class

S_1^2 : Variance of experimental class

S_2^2 : Variance of control class

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PADANG