CHAPTER III

RESEARCH METHOD

In this chapter, the researcher presented eight topics dealing with research methods. It focused on the method that used in conducting the research. Those are research design, population, sample and sampling, variable, research instrument, data collecting method, treatments, method of data analysis, normality and homogeneity testing, validity and reliability testing, hypothesis testing.

A. Research Design

Research design is the way to conduct the research. This research conducted to know the effectiveness of using four squares writing method toward students' writing descriptive text. Based on the purpose, the researcher was chose quantitative research with experimental research design. Creswell (2012:295) stated that experimental study is for the research, which was helping the researcher to know the cause and effect between independent variables and dependent variables.

The type of experimental that used in this research was quasi-experimental research design. In quasi-experimental research design, there were two groups involved in it. The first group named experimental group and the second named control group. The experimental group is a group taught by using four squares writing method. On other hand, control group is a group taught using conventional method. According to the statement of National Center for Technology Innovation (2003), quasi-experimental study is typical true experimental, which involved pre-test and post-test. In line with

the statement above the researcher conducted pre-test and post-test for both groups to know the

improvement of student before and after treatments. The illustration of quasi-experimental research design represents below:

Table 3.1 The Illustration of Quasi-Experimental Research Design

Group	Pre-Test	Treatment	Post-Test
A	**Y1**	**X**	**Y2**
B	**Y1**	**X**	**Y2**

Explanation:

A **:** Experimental Group

B **:** Control Group

Y1 **:** Pre-test (Students writing ability before treatment)

X **:** Treatment (Writing descriptive text through FSWM)

Y2 **:** Post-test (Students writing ability after treatment)

Based on the table 3.1 the procedures of quasi-experimental research that used two groups explained, as follows:

1. Administering a pre-test, (Y1) to measure students' writing descriptive text at 7^{th} grade of Fathul Hidayah Junior High School Pangean Lamongan.
2. Applying the experimental treatments in the experimental group, which is teaching writing using Four Squares Writing Method and conventional method in the control group.

3. Administering Post-test (Y2) to both of groups (experimental and control) to measure students' writing descriptive text at 7th grade of Fathul Hidayah Junior High School Pangean Lamongan.

B. Population, Sample and Sampling

1. Population

Population is all subjects studied. It concluded of all individuals that have similar characteristics. Ary et al (2010) stated that population is defined all members of any well-defined class of people, events, or object chosen by researcher who study on the research that can be generalized. According to Sugiyono (2010:117), population is generalization area consist of subjects that have certain criteria and characteristics decided by the researcher to researched and be taken conclusion then. The population of this research was students from 7th grade of Fathul Hidayah Junior High School Pangean Lamongan.

2. Sample

Sample is the small group that observed (Ary et al 2010:148). Selecting sample was very important in conducting the research study. According to Creswell (2012:142) stated that sample is a sub group of the target population. Based on those statement, the researcher defined that sample was a part of population taken by researcher with the certain way decided by researcher.

This research was quasi- experimental; it means the researcher needs two classes as a sample. The sample was chose by using purposive sampling, where the researcher decide a certain criteria it is both classes have the same level of ability, in order that classes chosen are normal and average. Based on the criterion the sample of this research was students of VII D as an Experimental group and VII E as a Control group. The experimental group consist of 22 students as a sample and the control group consist of 20 students as a sample.

3. Sampling

Sampling is a method of selecting samples from the population. Ary et al (2010:156) classifies sampling into probability and non-probability. The researcher chose a small number of students which have the same criteria as the population. Therefore, this research used purposive sampling technique to select the sample of the research. Purposive sampling is kinds of non-probability sampling where the researcher consciously selects the subjects for addition in a research so that could give sufficient information about students' ability in learning English especially writing class.

C. Variables

Variable is one of key terms in any research. Ary et al (2010:37) stated that variable is a construct or a characteristic that can take on different values or scorer. In this research the researcher used two variables, those were:

1. Independent Variable

Independent variable is the variable affecting another variable. In line with the statement of Ary et al (2010:266) that variable is manipulated by researcher. Suppose that the researcher conducted the research concerning the effectiveness of using Four Squares Writing Method towards students writing ability. In this case, Four Squares Writing Method was the independent variable because it influenced the students writing ability.

2. Dependent Variable

Dependent variable is the variable affected by another variable. According to Ary et al (2010:266), stated the variable which the effects of the changes are observed named dependent variable, which observed but not manipulated by the researcher. Therefore, the dependent variable is an outcome from the effect of independent variable. In this research, the dependent variable is students writing ability which was affected by Four Squares Writing Method.

D. Research Instrument

Research instrument is a tool which used by researcher to collect data. Sugiyono (2015:148), stated that instrument is a tool used to measured natural phenomena observed. Many kinds of instrument of research, it can be in the form of test, tally sheet, questionnaire, observational checklist, inventory, logs or assessment instrument. In this research, the instrument used was in the form of test. According to Arikunto (2006:127) test is a series, question, trial,

or other means which used to measure knowledge, skill, ability, intelligent that have by individual or group.

The test used in this research was in the form of writing test. It purposed to know the difference result of students' writing descriptive text taught by using and without using Four Squares Writing Method. The test developed by researcher from K13 curriculum and syllabus used by Fathul Hidayah Junior High School Pangean Lamongan and refers to standards competence. The researcher also developed some indicators that should be achieve by students, by using those indicators the researcher developed the test, which used to conduct the pre-test and post-test. In this research the test was developed consist of theme, time allocation, and several instructions to do the test. Students given a worksheet by researcher, the worksheet consist of the element mentioned before, and there are three kinds of theme, where the students should choose one of them and they create a descriptive text. Theme of the test was different both in pre-test or post-test, it was done to avoid students writing in the same words. The time allocation given to make students discipline in conducting the test, and the several instructions of the test were students asked to complete their identity including name and class and the following instruction students asked to create the descriptive text based on the topic given.

The result of the test assessed by the researcher using scoring rubric guideline. The scoring rubric including some criterion those are content, organization, grammar, vocabulary and mechanics as mentioned in the

previous chapter. Before the test given to the students, the researcher asked the expert to give the validation to the test. After got the valid data the researcher conducted the try-out of the test to the students of 7th grade of Fathul Hidayah Junior High School. The scores from those try-outs calculated to know the reliability of the test using SPSS 16.0. Then, the researcher used the test to conduct the pre-test and post-test to both experimental and control group after knowing the validity of the test.

E. Data Collecting Method

Method of collecting data was the way to obtain the data in the research. Meanwhile, the data of this research collected by administering test. The researcher used pre-test and post-test to collect the data. It helps researcher to get data about the process of improving students' ability in this research. The technique of collecting data explained below:

1. Pre-test

Pre-test is the test that administered to both experimental and control group before they get the treatment. This test was functioning to know how far students' writing descriptive text and to get the score before treatment. The form of the pre-test was in the form of worksheet consist imperative sentence to create descriptive text.

2. Post-test

The post-test administered after the treatment, the test given for both experimental and control groups. It used to measure the students achievement after got the treatment. The test conducted at the end of the

meeting of teaching learning process. The procedures of giving pre-test and post-test were equal. The test was in the form of worksheet consist of imperative sentence to create descriptive text. After the researcher got the scores of the test, the researcher calculated and compared the score of both pre-test and post-test.

Furthermore, to scores students' result of writing on pre-test and post-test, the researcher used scoring rubric guideline adopted from Brown (2007)

Table 3.2 Scoring Rubric Adopted from Brown (2007)

Criteria	Ratting	Description	Weighting
Content (C) 30% Topic Detail	4 Excellent	The topic is complete and clear and the details are relating to the topic	**3x**
	3 Good	The topic is complete and clear but the details are almost relating to the topic	
	2 Average	The topic is complete and clear but the details are not relating to the topic	
	1 Poor	The topic is not clear and the details are not releting to the topic	
Organization (O) 20% Identification Description	4 Excellent	Identification is complete and descriptions are arranged with proper connectives	**2x**
	3 Good	Identification is almost complete and descriptions are arranged with almost proper connectives	
	2 Average	Identification is not complete and descriptions are arranged with few misuse of connectives	
	1 Poor	Identification is not complete and descriptions are arranged with misuse of connectives	
Grammar (G) 20%	4 Excellent	Very few gramatical or agreement inaccuracies	**2x**
	3 Good	Few grammatical or agreement or agreement inaccuracies but there	

		is no effect on meaning	
	2 Average	Numerous grammatical or agreement inaccuracies	
	1 Poor	Frequent grammatical or agreement inaccuracies	
Vocabulary (V) 15%	4 Excellent	Good choice of words and words form	**1.5x**
	3 Good	Almost good choice of words and words form	
	2 Average	Limited range confusing words and words form	
	1 Poor	Very poor knowledge of words, word form and not understandable	
Mechanics (M) 15% Spelling, Punctuation and Capitalization	4 Excellent	It used correct spelling, punctuation and capitalization	**1.5x**
	3 Good	It has occasional errors of spelling, punctuation and capitalization	
	2 Average	It has frequent errors of spelling, punctuation and capitalization	
	1 Poor	It is dominated by errors spelling, punctuation and capitalization	

$$\text{SCORE} = \frac{3C + 2O + 2G + 1{,}5\,V + 1{,}5M}{40} \times 100$$

F. Treatments

Treatment is an instructional used by the researcher in asking students to create descriptive text using Four Squares Writing Method. The researcher gave the treatments for the students. The treatment includes the process of implementing Four Squares Writing Method adopted from Gould (1999) which had been modified by the researcher. The procedure of treatments could see on the table 3.3 below:

Table 3.3 The Procedure of Treatments

No.	Aspect	Teacher's Activity	Student's Activity
1.	Pre- Activity	- The teacher gave greeting to the students	- The students responded the greeting
		- The teacher checked the students' attendance list	- The students responded to the teacher calling
		- The teacher gave stimulus to the students by giving questions related to the material	- The students answered the teacher's question
2.	Main Activity	- The teacher asked the students to paid attention, observe and understand the materials about definition, social function, generic structure, language feature of descriptive text - The teacher gave an example of descriptive text by using power point media	- The students followed teacher's instruction
		- The teacher asked the students about their understanding and difficulties of the material was given	- The students delivered their difficulties in understanding the material

		- The teacher explained more about the material that students felt difficult to understand	- The students paid attention to the teacher's explanation
		- The teacher explained about the procedure to use Four Squares Writing Method	- The students paid attention to the teacher's explanation
		- The teacher gave the example of the steps in implementing Four Squares Writing Method and asked the students to follow the instruction	- The students followed the teacher's instruction
		- The teacher asked the students to prepare a piece of paper and complete their identity	- The students prepared the paper and complete their identity
		- The teacher asked the students to draw four squares on their paper	- The students draw four squares on the paper
		- The teacher asked the students to write the topic described in the center of the square	- The students follow the teacher instruction
		- The teacher asked the students to write the supporting ideas on the 1, 2, 3 squares	- The students write the supporting ideas based on their thought
		- The teacher asked the	- The students write

		students to write the conclusion paragraph of their writing on the fourth square	the conclusion paragraph of their writing
		- The teacher asked the students to present their work in front of the class	- The students presented their work in front of the class
3.	Closing Activity	- The teacher gave the feedback in generally about the students' writing project and giving the evaluation about the activities they have been done	- The students paid attention to teacher's explanation
		- The teacher gave the conclusion and closed the learning process	- The students responded for the teacher

In this research, the treatments given three times to the experimental class. The first treatment conducted on Sunday, April 25th2021 and the second was on Wednesday, April 28th2021 and the third treatment was on Sunday, May 2nd 2021. The treatments taught the students to build ideas before start to write by using squares.

G. Validity and Reliability Testing

In the research instrument, the research explained that the test is a process of measuring students' ability. It means the test given should be valid

and reliable. The way to know whether the test is good or not, the researcher used validity and reliability testing.

1. Validity

The most important principles of language testing is validity. Brown (2003) stated validity is the extent to which inferences made from assessment results are appropriate, meaningful, and useful in terms of purpose of the assessment. It means that the test could be valid when it measures what supposed to measure. The researcher used several validities testing to ensure that the test has a good validity. Those explained below:

a. Content Validity

Content validity is the test that can measure a certain objective that appropriate to the material of learning given Arikunto (2006:82). Therefore, the content of the test should appropriate with the material that mentioned in curriculum and syllabus. The instrument of this research developed based on the core competence and basic competence of K13 curriculum of English for Junior High School in order that completing the requirement and having content validity.

Table 3.4 Core Competence and Basic Competence in 2013 Curriculum of English for Junior High School at 7th Grade

Core Competence	Basic Competence
4. Experimenting, processing, presenting in concrete aspects (applying, synthesizing,	4.7.2 Arranging descriptive text oral and written, in the form of short and simple about people,

arranging, modifying and composing) and in abstract aspects (writing, reading, counting, drawing, and creating) based on what have been learned in school and other sources from the same perspective.	animals, and objects, taking into account social functions, structures of texts and linguistic elements that are true in context.

Based on the table above, it seen that descriptive text was one of the texts that should mastered by 7th grade students of Junior High School in K13 curriculum. Therefore, this test consists of descriptive text since it was match for seventh grade students.

b. Construct Validity

Brown (2003) stated that construct validity is any theory, hypothesis or model that attempts to explain observed phenomena in our universe or perceptions. The construct defined will lead to what tasks the instruments requires students to do and will results in correct data, which has strong validity. Based on those explanations, the researcher developed the test based on the material, which is suitable for students at seventh grade of Fathul Hidayah Junior High School Pangean Lamongan. In this research, the researcher used writing test to measure students writing ability in descriptive text. so, the researcher asked students to do the test in the form of creating descriptive text. So that the instrument fulfilled the construct validity of writing test and valid in terms of construct validity.

c. Face Validity

Face validity is a term used in connection with the content of the test. According to Ary et al (2010:228) stated that face validity refers to the extent to which examiners believe the instrument is measuring what is supposed to measure. It means the instruction of the test should be clear and understandable for the students. In this research, the test designed to measure students' achievement in writing text. Therefore, to achieve face validity the researcher provided the instruction on the paper test. The purpose of face validity which used in this research was to check some aspects that are consideration in the test, those are:

1) To check that the instruction must be clear and understandable by the students.
2) The test matched to the syllabus and level.
3) The time allocation given was clearly.

2. Reliability

A good test have to be valid and reliable. According to Creswell (2012), reliability means that scores from an instrument are stable and consistence. If the researcher gave the same test to the students or matched students in two occasions, the test should be yield similar result. The way to achieve the reliability in a test was the researcher apply rater reliability. There are two kinds of rater reliability; the first was inter-rater reliability

in which two raters or scorers do the scoring, and the second known as intra-rater reliability in which a rater or a scorer does the scoring twice.

In this test, the researcher used inter-rater reliability, where the researcher involved two raters do in scoring the students' writing ability. The two scorers in this research were the researcher and an English teacher. After got the score of the try out from both of raters, the researcher calculated the score of try out using SPSS 16.0 application to know the reliability. There are five classes of the instrument reliability, those explained below:

Table 3.5 Classes of Reliability Cronbach's Alpha

Interpretation Based on Triton

Cronbach's Alpha	Interpretation
0.00-0.20	Less reliable
0.21-0.40	Rather reliable
0.41-0.60	Quite reliable
0.61-0.80	Reliable
0.81-1.00	Very reliable

The result of the reliability testing of the research displayed on the table below:

Table 3.6 Reliability Testing of Pre-test and Post-Test

a. Reliability of pre-test

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.634	.639	5

b. Reliability of post-test

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.676	.680	5

Based on the calculation in SPSS 16.0. The result of the reliability value of pre-test was 0.634. According to Cronbach's Alpha scale on the table 3.5 above, its value was reliable because the reliability value tested got the result between 0.61-0.81. Furthermore, the reliability value in post-test was 0.676. Refers to Cronbach's Alpha scale, the value was reliable because the gain of reliability value tested between 0.61-0.81. Reference to those explanations above, the researcher conclude that the instrument of pre-test and post-test was reliable and could was administered by the researcher.

H. Normality and Homogeneity Testing

1. Normality Testing

Normality testing is required to find out whether the data is in normal distribution or not. Normality testing can be done through Shapiro-Wilk and Kolmogorov-Smirnov tests. The appropriate test can used according to the number of samples used in the research. According to Dahlan (2010) stated that if the samples size larger than 50, the normality test uses Kolmogorov-Smirnov and if the samples size less than 50 the normality test uses Shapiro-Wilk.

According to Chojimah (2020) the hypotheses of normality testing are:

a. H_0 : the data are normally distributed

b. H_a : the data are not normally distributed

.In this research, the data normally distributed if H_0 (Null hypothesis) accepted and not normally distributed if H_a (Alternative hypothesis) was accepted. Those, accordance to the explanation above. Moreover, H_0 accepted if the significance value more than 0.05 and H_0 rejected if the significance value less than 0.05.

The researcher have tested the normality of pre-test and post-test by using SPSS 16.0 calculation. The result of those explained below:

Table 3.7 Normality Testing of Experimental Group and Control Group

a. Normality testing of Experimental group

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
GROUP	Statistic	df	Sig.	Statistic	df	Sig.
Pre	.123	22	.200*	.954	22	.373
Post	.095	22	.200*	.965	22	.603

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

b. Normality testing of Control group

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
GROUP	Statistic	df	Sig.	Statistic	df	Sig.
Pre	.157	20	.200*	.945	20	.302
Post	.145	20	.200*	.951	20	.379

a. Lilliefors Significance Correction

*. This is a lower bound of the true significa

The explanation data above showed that the significance of experimental normality testing for pre-test was 0.373, and the normality testing for the post-test of was 0.603. While, the control normality testing for pre-test was 0.302, for the post-test was 0.379.

Based on those explanations, all the significance variables showed that the result higher than 0.05. Therefore, the researcher concluded that the data of this research was normally distributed and the data can analyzed by the researcher.

2. Homogeneity Testing

Homogeneity testing used to know the variance of the two samples from same population is homogeneous or not. The researcher used homogeneity of variances test by using SPSS 16.0 to know the homogeneity of variance score of the samples. The value of significance (α) = 0.05. According to Stanislaus (2009), the basic decisions making in homogeneity testing were explained below:

a. If the significance value >0.05 then the data distribution is homogeneous

b. If the significance value <0.05 then the data distribution is not homogeneous.

Table 3.8 Homogeneity Testing of Pre-test and Post-test of Experimental Group and Control Group

a. Homogeneity Testing of Pre-test of Experimental and Control Group

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Pre	Based on Mean	.303	1	40	.585
	Based on Median	.192	1	40	.664
	Based on Median and with adjusted df	.192	1	36.811	.664
	Based on trimmed mean	.249	1	40	.620

b. Homogeneity Testing of Post-Test of Experimental and Control Group

Test of Homogeneity of Variance

	Levene Statistic	df1	df2	Sig.

Post	Based on Mean	1.284	1	40	.264
	Based on Median	1.142	1	40	.292
	Based on Median and with adjusted df	1.142	1	38.590	.292
	Based on trimmed mean	1.267	1	40	.267

As showed on the table above, the significance value of pre-test and post-test of experimental and control group were 0.585 and 0.264 which means those values were higher than 0,05. Therefore, it said that the null hypothesis was accepted or the instrument of the test was homogeneous.

I. Hypothesis Testing

Hypothesis testing conducted after the data has collected and analyzed. The function of hypothesis testing is to know whether the hypothesis of the research rejected or accepted. There were two kinds of hypothesis testing in this research those are:

1. Null Hypothesis (H_0): There is no significant different score between students writing ability in descriptive text taught by using Four Square Writing Method. Null Hypothesis (Ho) will be accepted and Alternative Hypothesis will be rejected if $P_{value} > 0.05$. It means, there is no significant different score of students writing descriptive text taught by using Four Square Writing Method.
2. Alternative Hypothesis (Ha): There is significant different score in writing descriptive text taught by using Four Square Writing Method. Null

hypothesis will be rejected if $P_{value} \leq 0.05$. It means, there is significant different score of students writing descriptive text taught by using Four Square Wiring Method.

J. Method of Data Analysis

The data collected in research must be analyzed. In quantitative research design, the data usually in the form of numbers. Then the researcher analyzes those data using various statistical procedures. The analysis of numerical data in quantitative research provides evidence that support or fails to support the hypothesis of the research. In this research, the researcher used a quantitative data analysis technique by using statistical method. This method used to find out the significant difference score in writing descriptive text between students taught with and without using Four Squares Writing Method. The researcher used statistical instrument (SPSS) to analyze the data, in this case, the statistical test used named parametric test because the data collected is interval and normally distributed. The parametric test used at this research was t-test for independent samples at SPSS 16.0. The data collected from administering pre-test and post-test for both experimental group and control group.