CHAPTER III

RESEARCH METHOD

This chapter described about the research method that used in conducting the research. In this case the researcher divided the research method into six parts there are research design, procedures of implementing, population and sample, research instrument, validity and reliability, data collection method, and data analysis.

A. Research Design

There are several techniques used in conducting the research which quite and enable to the researcher get the valid data and solve the problem in this study. According Homby (1995:996) research was carefully and accurately on investigation, especially in order to discover new facts or information such as scientific historical research. It meant that a study is done carefully and accurately on investigation of an event, problem, and phenomenon about scientific to find out new information. In conducting this research needed a plan some step he or she will take. Consequently, the design of the research should be suitable for the research condition. For these reason, a researcher had to follow the research design, if he or she wanted their research would be successful.

The data of this research in the form of quantitative research. Ary (2002: 22) stated that quantitative research used objective measurement and statistical analysis of numeric data to understand and explain phenomena. In quantitative

research there are experimental and non experimental research design. Experimental research involved a study of the effect of the systematic manipulation of one variable on another variable and non experimental research, the researcher identified variable and may look for relationship among them, but did not manipulate the variable (Ary 2007:24)

The design of this research was conducted a quasi-experimental research. This study classified as quasi experimental research design because considering the research of the problems and the purposes of the research. The research was conducted with two group, pre-test and post-test design, which used two group as experimental group and control group. Only the student the students in experimental group were taught by using PALS during the reading process as the treatment of the study. The data were occupied from pre-test and post-test score. The design of experimental and control class follow:

Table 3.1 Quasi-Experimental Design

Group	Pre-test	Treatment	Post-test
Experimental group	Y1	X	Y2
Control group	Z2	-	Z2

Y1= Pre-test before being given treatment for experimental group

Y2=Post-test after being given treatment for experimental group

Z1=Pre-test for control group

Z2=Post-test for control group

X = Treatment for experimental group; reading comprehension through peer-assisted learning strategy

Based on the table above, there were two groups. The first group was the experimental group, it received a treatment (X) while the second group was the control group, and it different treatment. Both experimental and control group received pretest to obtain the first data about students' comprehension in reading descriptive text before the treatment was given. The experimental group was given treatment of using PALS while the control group was using conventional teaching. Finally, both of the group were given post-test to obtain the second data about students' comprehension in reading descriptive text.

B. Population and Sample

1. Population

   According Sugiyono (2011:80) population not only people, but also all the quantity of object or subject that would be learnt, but also involved the whole of characteristics of the subject or object.

   In this research, the population was all at the seventh grade of SMPN 1 Ngantru Tulungagung in academic year 2017/2018. There were ten classes. The total number was 320 students.

2. Sampling Technique

In a research, there were two types of sampling; probability sampling and non-probability sampling. Probability sampling was the elements in the population that have the same opportunity to be sample. Whereas non-probability sampling is the technique in taking ample that did not use the base of opportunity but it is determined by the researcher based on the need (Sudjana & Ibrahim, 2007:85)

In this research, the researcher used purposive sampling. Purposive sampling is one of types in non-probability sampling. According to Sudjana & Ibrahim (2007: 85) purposive sampling was the technique that was used if the researcher had certain consideration in determining the sample that is appropriate with the purpose of research.

The researcher had taken two classes of ten classes from the seventh grade students of SMPN 1 Ngantru Tulungagung on academic year 2017/2018 exactly VII B class and VII E class. Both classes consist of heterogeneous students (high, middle, and low achievemet) ad these classes were selected based on consideration such as, those classes are equal in level of English.

3. Sample

Sample was part of reached population that has the same characteristic with the population (Sudjana & Ibrahim, 2007:85).

In this research used the sample of two classes that were chosen as the sample by using purposive sampling technique in choosing the class.

C. Variable

A variable is concept that stands for variation within a class of object. Variable can be classified in several ways. The most important classification is on the basis of their use within the research under the consideration, when they are classified as independent variables or dependent variables (Ary et al, 2007:37).

In this research, the independent was the use of peer-assisted learning strategy in teaching descriptive text and the dependent variable was students' reading comprehension.

D. Research Instrument

The instrument used to collect the data. According to Arikunto (2006:160) the instrument is the tool which was used by the researcher in the time of the research.

In this research, the researcher used a test reading as an instrument to get the data. The researcher used the objectives tests that are divided to pre-test and post-test.

1. Pre-test

   The researcher gave the pre-test to students of experimental and control group to measure students' reading comprehension before treatment process. The test was given to know the basic competence

for students and to know earlier knowledge before they get treatment. The score was analyzed to determine the student's score between pre-test and post-test. The researcher gave the multiple choice test about descriptive text. The instrument of pre-test can be seen in appendix 1.

Pre-test was conducted before the treatment. The control group was conducted on 23 March 2018 that was joined by 32 students and the experimental group was on 19 March 2018 that was joined by 30 students.

2. Post-test

The post-test was conducted to measure the students' reading comprehension of experimental group and control group after treatment process, this test was given to know the students' reading comprehension before and after they get treatment. The researcher gave the multiple choice test about descriptive text. The instrument of post-test can be seen in appendix 2.

Post-test was conducted after the treatment. The control group was conducted on 20 April 2018 that was joined by 32 students and the experimental group was on 18 April 2018 that was joined by 30 students.

E. **Validity and Reliability Testing**

1. Validity

Validity was defined as the degree of which evidence and theory support the interpretations of test score entailed proposed used of test

(Ary et.al, 2006:225). In other words, test validity used to developing and evaluating measuring instruments. Valid was the instrument can be used to measure what should be measured (Sugiyono, 2014:121). There were four types of validity; content validity, criterion validity, construct validity, face validity. In this research, the researcher analyzed the test from content validity and face validity.

a. Content Validity

Content validity was instrument organized as test, validity testing can be done with compare the instrument and teaching materials (Sugiyono, 2014:129). In this study the test had content validity because his test was based on the course objectives in the syllabus of first grade SMPN 1 Ngantru Tulungagung. This content validity could be showed as follows:

Table 3.2 Content Validity

No	Indicator	Number of pre-test	Number of post-test
1.	Definition, purpose, main idea, generic structure,	1, 8, 2, 3, 14, 7, 13, 15, 18,	1, 16, 3, 2, 4, 10, 12, 15, 18
2.	Specific and unique characteristics in descriptive text	5, 10, 11, 16	5, 6, 9, 13, 14, 19
3.	The dominant tenses	4,9	7

	in descriptive text		
4.	Inferring the meaning of the text, identifying synonym	12,17, 6, 19	11, 8, 17
5.	Arrange paragraph in a descriptive text	20	20

b. Face Validity

Face validity was sometimes used in describing tests. Basically, face validity refered to the degree to which a test visible to measure what it purpose to measure (Gay, 1992:156). In this study the researcher wanted to know the students' score in reading after given treatment. Therefore the tests were in the form of objectives test.

2. Reliability

Lodico et al (2006:87), reliability refered to the consistency of score, that is an instrument's ability to produce "approximately" the same score for individual over repeated testing or across different raters.

The computation of this reliability used IBM SPSS Statistics 20 with reliability analysis. The criteria of reliability's degree could be see on Table below, whereas the reliability's result could be seen in appendix 3.

According to Triton in Sujianto (2009: 97) the value of cronbach's alpha could be interpreted as follow:

Table 3.3 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

In this research, the researcher tried to the empirical reliability by using IBM Statistic SPSS 20 after trying out the instrument (pre-test and post-test). In trying out instrument, the Cronbach's Alpha score for pre-test was 0. 946 and the Cronbach's Alpha score for post-test was 0.903. Related with testing stated by Sujianto, the result of computation of both groups was categorized into very reliable.

F. **Normality and Homogeneity Testing**

1. Normality Testing

Normality testing is conducted to know whether the gotten data was normal or not. In this research, normality test was done toward the

result (students' score) of pre-test in reading descriptive text. To know the normality, the researcher used One-Sample Kolmogorov-Smirnov formula by using SPSS program 20 version. Normality test was done by using rule of Asymp. Sig (2 tailed) or p. If Asymp. Sig (2 tailed) or p> 0,05 so the test distribution is normal.

In this research, normality testing was done toward the students' score in pre-test, not only for the control group but also for experimental group.

Table 3.4 Normality Test of Experimental Group

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		30
Normal Parameters[a,b]	Mean	0E-7
	Std. Deviation	5.90209407
Most Extreme Differences	Absolute	.116
	Positive	.116
	Negative	-.109
Kolmogorov-Smirnov Z		.636
Asymp. Sig. (2-tailed)		.813

a. Test distribution is Normal.

b. Calculated from data.

Table 3.5 Normality Test of Control Group

One-Sample Kolmogorov-Smirnov Test

	Unstandardized Residual

N		32
Normal Parameters[a,b]	Mean	0E-7
	Std. Deviation	5.92087973
	Absolute	.152
Most Extreme Differences	Positive	.110
	Negative	-.152
Kolmogorov-Smirnov Z		.860
Asymp. Sig. (2-tailed)		.451

a. Test distribution is Normal.

b. Calculated from data.

Based on the result of computation by using IBM SPSS Statistic program 20 version, it could be concluded that the test distribution of two groups were normal.

2. Homogeneity Testing

Homogeneity testing was used to know whether the gotten is homogeneous or not. In this research, homogeneity test was done toward the result (students' score) of pre-test in reading descriptive text. To know the homogeneity, the researcher used Test of Homogeneity testing was done after doing the distribution score of group involved. The variance could be said homogeneous if the significance of the result was more than 0.05. According to Prayitno (2009, p. 89), the assumption of ANOVA testing was the data groups' variance that was homogeneous. The criteria of testing, if the significance was smaller than 0.05 (sig. <0.05) that the data was not homogeneous; on the contrary, if the significance was bigger than 0.05 (sig. >0.05) that the data was homogenous.

Table 3.6 Homogeneous of Test

ANOVA

X

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	140.417	4	35.104	1.061	.396
Within Groups	827.083	25	33.083		
Total	967.500	29			

From the result above, the test was homogeneous because significant is 0.765, it meant that significant is more than 0.05 (0.765>0.05). The homogeneity testing of variance in post-test of control group and experimental group for reading descriptive text in this research showed that the data had homogeneous variance, so it was qualified to be analyzed.

G. Data and Data Source

1. Data

   According to Arikunto (2010:172) data were written facts or notes gotten by researcher that would be organized in research activity. Data could be in the form of fact or number.

   In a research, the role of data was very important since it was used to answer the problems. In this research, the data was students' reading score that gotten from reading test. The data was from control and experimental group.

2. Data Source

Data source could be defined as the subject in whom the data was taken (Arikunto, 2010:172). There were two kinds of data sources; primary data source and secondary data source. Primary data source was data taken directly from the field, while secondary data source was data not taken directly from the field.

In this case, the researcher used primary data source, since the data was students' reading comprehension score that were taken from the test administered directly by the researcher towards the experimental group and control group.

H. Data Collecting Method

Data collecting method was needed to obtain the research data. Data collecting is systematic and standardized procedure to obtain the necessary data (Tanzeh, 2009: 57). Data collecting method in this research was testing.

According to Arikunto (2019: 127) that test was a series questions, or others which were used to measure the skill, knowledge, intelligent, ability or talent that have by individual or group. Thus, a test was a method to gain the data by giving some questions to respondent.

There are two kinds of the test, they were:

1. Subjective test

   Commonly, the form of this test was essay. Essay test was the kind of the learning progress test that need the answer descriptively.

2. Objective test

Objective test was the test that in the examination can be done objectively. This case is meant to solve some weakness of the essay test or subjective test.

In this research, the researcher used the objective test that was multiple choices in collecting the data. The test was used to collect the students' comprehension on reading descriptive text. The test was given not only for the experimental group, but also for the control group.

In this research, the researcher used pre-test and pro-test.

a. Pre-test

The researcher gave the pre-test to students to answer the correct answer of the multiple choices test of reading test on descriptive text without using PALS.

b. Post-test

Post-test was given by the researcher after all treatments were conducted. Post-test was given in order to measure the improvement of the students' comprehension of reading descriptive text after they learn reading descriptive text by using PALS in experimental group and without using PALS in the control group.

The stages in collecting data of the research were explained as follows.

1. Before Experimental Stage

Before experimental stage, the researcher decided the samples of the experimental class and control class. After deciding the samples, the researcher gave pre-test for those classes. Pre-test was given to know the students' comprehension in reading descriptive text before they learn reading descriptive text by using treatment. The experimental and control group was in the same starting point.

2. Experimental Stage

After two group had been given the pre-test, the next stage they were given a treatment. For the experimental group was taught by using PALS and for the control group was taught by using conventional method. The treatment was done by involving strategy PALS, the students and the researcher.

There were some stages in implementing the treatment:

a. Control Group

In the teaching and learning of reading descriptive text in control group was done by using conventional method (without using strategy). The position of the control group was as the comparator class, so the learning activity was done as usual, without using strategy. The detailed activity in experimental stage of control group can be seen in lesson plan in appendix 4.

b. Experimental Group

In the teaching and learning of the reading descriptive text, the experimental group was taught by using PALS. The researcher explained to students about the strategy in comprehending thing, place or person after explaining the descriptive text. Then students tried to use strategy in comprehending the descriptive text. For detailed activities in experimental group could be seen in lesson plan in appendix 5.

3. After Experimental Stage

In this stage was the last stage in conducting the research. After each group was given the treatment, they were give post-test with the similar materials in pre-test. The post-test was given to know the significant differences of the students' reading comprehension in reading descriptive text after given the treatment (teaching and learning reading descriptive test by using PALS). In this stage the researcher also compared the result of the test (pre-test and post-test), whether ever increasing, same or down.

Table 3.7 The Schedule of Conducting The Research

No	Group	Class	Date	Activity
1.	Control	VII B	23 March 2018	Pre-test
2.	Experimental	VII E	19 March 2018	Pre-test
3.	Control	VII B	24 March 2018	Conventional teaching

4.	Experimental	VII E	21 March 2018	Treatment 1
5.	Control	VII B	30 March 2018	Conventional teaching
6.	Experimental	VII E	26 March 2018	Treatment 2
7.	Control	VII B	31 March 2018	Conventional teaching
8.	Experimental	VII E	28 March 2018	Treatment 3
9.	Control	VII B	20 April 2018	Post-test
10.	Experimental	VII E	18 April 2018	Post-test

I. Data Analysis

Data analysis was a continuation process from process of data processing to know how the interpretation data, then data analysis of the result that has been on the level of result of data processing (Prasetyo & Jannah, 2005:184).

In this research, the researcher used Independent sample T test at IBM SPSS Statistic 20 for windows to know the significant difference of achievement of students' reading comprehension between they were taught by using PALS and those are taught without PALS. Indeed, according to Priyanto (2009: 77) the method in further analysis of the data as follows:

1. If the significant level score is bigger than significant value, the alternative hypothesis (Ha) is accepted. It means that there is

different score of the seventh grade students of SMPN 1 Ngantru Tulungagung before and after being taught by using PALS. The difference is significant

2. If significant level is smaller than significant value, the Null hypothesis (Ho) is rejected. It means that there is no different score to the seventh grade students of SMPN 1 Ngantru Tulungagung before and after being taught by using PALS. The difference is not significant.