CHAPTER III

RESEARCH METHOD

In this chapter, the researcher presents some points related to this research including research design, subject of study, validity and reality, research instrument, normality, homogeneity testing, data collecting method and data analysis.

A. Research Design

This research employed the principles of Experimental research. According to Creswell (2008) stated that researchers can use experimental research if they want to establish possible cause and effect between the independent and dependent variables. So, the researcher can have concluded that this research is an experimental research because this research aims at looking at the influence of the independent variable (relationship between one thing or one variable) toward the dependent variable (other thing or variable) in population.

In this research, the independent variable is the variable that can affect the other variable, it means here is effectiveness of Peer Tutoring strategy. Meanwhile, the dependent variable is, consequence of an independent variable or effect of independent variable, it means here is improving students' reading achievement that can affected by using Peer Tutoring strategy.

The design in this research was a quasi-experimental design as a kind of research design that involved the collection of the data and used two variables. They were variable X and Y, which are; variable X was giving the treatment (experimental

group) and variable Y was the students' reading comprehension of descriptive text (control group). The researcher is attempting to demonstrate that variable X influence or causes variable Y to do something. The purpose researcher was chosen this design, because to finding out the different effect of control class and experimental class by using a treatment (Peer Tutoring Strategy) in teaching learning process. So, it is clear that the research was done during class hours. Moreover, the reason the researcher was chosen this design because it was not possible for researcher to select students randomly to be respondents of the research sample. In this research, according to Donald T. Campbell and Julian Stanley (1963: 13) the types of this research can be designed as follows:

Table 1 Test Quasi-Experimental Design

Test Quasi-Experimental Design			
Group	**Pre-test**	**Treatment**	**Post-test**
Experimental (D class)	Y1	X	Y2
Control (B class)	Y3	-	Y4

Explanation:

Y1: Students' reading score of experimental class (Multimedia class) on pre-test

Y3: Students' reading score of controlled class (TKJ class) on pre-test

X : using PTS treatment

-    : Non using PTS or using conventional strategy in this class.

Y2: Students' reading score of experimental class (Multimedia class) on post test

Y4: Students' reading score of controlled class (TKJ class) on post-test.

Based on the table above, there are two groups. The first group is the experimental group, it will receive a treatment (X) while the second group is the control group, and it not receive treatment. Both experimental and control group will receive pretest to obtain the first data about students' reading score in reading the text before the treatment will be given. The experimental group is given treatment of teaching them by using PTS (X) while the control group is being taught without using PTS or using conventional teaching. At below, there are three steps to carry out of the experimental research in SMK NU Tulungagung, it was conducted on 23rd November 2017 until 25th November 2017 can follow:

1. Organizing a pretest with a purpose measuring reading comprehension in tenth grade in SMK NU Tulungagung.

2. Applying the experimental teaching reading comprehension by using Peer Tutoring Strategy (PTS) strategy as the strategy to the subject (students of tenth grade in SMK NU Tulungagung).

3. Organizing a posttest with a purpose measuring reading comprehension in tenth grade in SMK NU Tulungagung.

This are procedures of introductory research:

1. Introduction steps of the research

a. At first, researcher meet vice master of curriculum of SMK NU Tulungagung and the English teacher. The researcher asks the vice master about time of research, sample and population as the subject of the research and then discuss about the instrument that used by the researcher. Researcher used Quasi- Experimental research to measures different variables in this school, so vice master selecting two class for the research (X Multimedia and X TKJ).

b. In the next step, researcher arranged lesson plan and make the instrument to measure the effectiveness of Peer Tutoring Strategy.

c. Next, conducting validity and reliability of the test

d. In the last, Analyzing the result of test to know validity and reliability of instrument.

2. The Implementation step of the research:

a. Pretest

Pretest was given to the students before doing treatment. Pretest is very important to know student's ability of the reading comprehension before doing treatment. In this research, the researcher gives a test to the student consisting of 20 multiple choices and 5 True- False Statements.

b. Treatment

1. The researcher gives some text about descriptive text for students.

2. After the students read the text, researcher asked to find the difficult word in the text.

3. The researcher asks the students to pairs with the stronger and the weaker students. They are doing the activities with their partner in the class and researcher choose 2 students as tutor for the other (their partner or tutee). Because, they have good score on the pre-test from the other.

4. The weaker (tutee) students will listen to tutor (stronger) student about the explanations of the text.

5. After they read together, they are completed the reading comprehension task with their partner. Next, the students discuss about the assigned of the reading comprehension task.

6. If they are finish with their activities, the tutor and tutees provide positive feedback to each other and the researcher monitoring their last activities.

From the research above, the tutor should be aware about the material today of the other. The researcher monitoring tutors and tutee about how they do of the role from each other.

c. Post test

Posttest was given to the students after giving the treatment. The purpose of doing the posttest is to known reading score after researcher giving the treatment. The researcher to distinguish reading score which each the more effective score among before giving treatment (Peer Tutoring Strategy) and after giving treatment (Peer Tutoring Strategy).

B. Population , sample and sampling

According to Fraenkel and Wallen (1993: 79) a population is the group to which the results of the study are intended to apply. It is defined as all members of any well-define classof people, events, or objects. The population of this research are all of the tenth grade students at SMK NU Tulungagung was 109, which consist of 4 classes and the researcher choose X Multimedia class consist of 18 students, which 8 male and 10 female of students. While in X TKJ class, in this class consist of 23 students which they are include 11 male and 12 female students. The researcher chooses this class because according to the recommended of English teacher in this school. Both classes consist of heterogenous students (high, middle, and low achievement) and these classes are equal in the level achievement of English. So, both of the class are already represent all of students of the tenth grade in this school.

Sample

In selecting the sample, it must be representative to a population, because to ensure the conclusions are credible to measure. According to Ary et. al (2010:148) sample is a portion of a population.

Selection of the sample is very important step in conducting a research study. In here, sample is part of population which will to be analyzed. Meanwhile, sampling is

the process of selecting a number of individuals for a research, this is like a sample of the research.

In this research, the researcher chooses two class from the tenth grade of SMK NU Tulungagung, precisely X Multimedia class consist of 18 students, 8 males and 10 females as experiment group and X TKJ class consist of 23 students, 11 males and 12 females as control group. The researcher takes those classes as her sample because it was recommendation of the English teacher in this school, because he was assumed both classes have average achievement of the tenth grade. So, those classes represent all of students of the tenth grade at SMK NU Tulungagung.

Sampling

Sampling is the process or technique of selecting an appropriate sample. According to Johnson and Christensen (2000: 156), sampling is the process of drawing a sample from a population. In this research, the researcher used *purposive sampling technique*. Purposive sampling technique is a sampling technique in which researcher entrusted on his or her own judgment when choosing members of population to participate in the research. In this research, the researcher used *purposive sampling*, because the samples have sufficient competence on English competence based on recommendation of the English teacher of SMK NU Tulungagung.

C. Formulation of Hypothesis

The hypothesis of this research is :

a. Null Hypothesis (Ho)

The null hypothesis states that there is no significant difference on the students' reading comprehension ability between being taught by using and without using Peer Tutoring Strategy. If the significant level is bigger than significant value, the alternative hypothesis (Ha) is accepted and (Ho) null hypothesis is rejected. It means, from the statement there is different score on the students reading achievement before and after being taught by Peer Tutoring Strategy (PTS), or the different is significant.

b. Alternative Hypothesis

The alternative hypothesis states that there is significant difference on the students' reading comprehension ability between being taught by using and without using Peer Tutoring Strategy. If the significant level is smaller than significant value, the (Ho) null hypothesis is accepted and the alternative hypothesis (Ha) is rejected. It means, from the statement there is not different score on the students reading achievement before and after being taught by Peer Tutoring Strategy (PTS), or the different is not significant.

D. Research instrument

In this research, the researcher used reading comprehension test as an instrument to get the data. Instrument is a tool or device used for a particular task (Oxford: 231). Instrument is significant things in research. With instrument, researcher can get the data. In this research, researcher uses test as the instrument and the test consists of

objective test because the subjects of this research are those staying at intermmediate level. According Hogan (2007) introduced quantitative evaluation students work, which allowed for an objective assessment of students' knowledge. From the Hogan statement objective testing focused attention on specific facts in evidence rather than on philosophical or theological speculations. From those english book and syllabus, researcher developed the test that consists of two kind of test that is pretest and posttest. In this researcher, the researcher used multiple choice in pre-test and post-test, because multiple choice questions have been shown to be more reliable in testing knowledge than the traditional essay questions and multiple choice question could be used to validate continuing educations and professional development from reading skill (Premadasa, 1993).

According to Brown (2004: 3), a test is a method of measuring a person's ability, knowledge, or performance in a given domain. The test is instrument used to measure the students' reading skill. In here the researcher carries out pre-test was given before doing an experimental research study or before teaching by using Peer Tutoring Strategy (PTS) and Posttest was given after doing the treatment or after teaching by Peer Tutoring Strategy (PTS). The instrument as follow:

Pre-Test

The researcher was to given the pretest to students of experimental research to measure students' reading comprehension before treatment process. The test will give to know the basic competence for students and to know earlier knowledge before they

get treatment and then to know how far the students know about the subject that will be taught. Post-test was given to the students at the first meeting on November, 24th 2017. The score be analyzed to determine the students score between pretest and posttest. This test about answer the question which consist of 20 multiple choices and 5 True-False form. In the multiple choice question, researcher use several text such as: The Hobbit, My Pet, Paris and Yogyakarta. That's all taken from internet. In multiple choice test, every items have four choices, there was A, B, C, and D. The time allocation for the test was exactly 60 minutes. There were 18 students as respondents or subject of this research.

Post-test

The posttest conducted to measure to students' reading comprehension of experimental group and control group after treatment process. This test will give to know the students' reading comprehension before and after they get treatment. Post-test was given to the students at the second meeting on November 25th 2017. In the posttest students were evaluate individually like in the pretest. The researcher gives same question like in pretest, but researcher modified some question in the post test. Especially, some text in multiple choice has change. There were 18 students as respondents or subject of this research.

E. Validity and Reliability Testing

Research is always dependent upon measurement and every measuring instrument should go through a process validity and reliability test. In this research, the test of reading comprehension has constructed the criteria of validity and reliability test.

Validity

The basic for judgments of content validity is test content. Validity is most complex criterion of an effective test and the most important principle of language testing. It is the extent to which inferences made from assessment result are appropriate, meaningful and useful in term of the purpose of the assessment. Based on definition above, validity refer to quality of instrument. Validity is always specific to the particular purpose for which the instrument is being used. Validity refers to the precise measurements of the test. Validity is defined as the extent to which the instrument measures what it supposes to measure. It means that a valid test of subject would measure the subject itself. For instance, the valid of reading test would measure reading.

In this research, the researcher used content validity and face validity.

1. Content validity

Content validity is the content about what we say the test is about. This kind of validity depends on careful analysis of the language being tested. The test should be so constructed as to contain representative sample. The relevancy of the objective of the test and the content of the test items are show the content validity of the test. So content validity that the test was designed based on the KI and KD in curriculum K 13 nowadays. This has been repaired based on advice from expert that validated the instrument. The researcher made instrument (test) based on course objectives on the syllabus of tenth grade of SMK NU Tulungagung. Therefore, this instrument is

valid in the term of content validity. The details of content validity in the research can

be showed as follow:

Table 2 Content Validity

Learning Objective	Type of test	Test Item	Pre-Test	Post-Test
Menganalisis fungsi sosial, struktur teks dan unsur kebahasaan pada teks deskriptif sederhana tentang orang, tempat wisata dan bangunan bersejarah terkenal sesuai dengan konteks penggunaannya	Multiple choice and True/False statement	Objective test	1,3,6,8,9,10,12,13,14,15,	1, 2, 3, 4, 7, 8, 12, 13, 14,15
Menangkap makna dalam teks deskriptif lisan dan tulis sederhana.	Multiple choice and True/False statement	Objective test	2,4,5,7,11,16, 17,18, 19, 20, 21, 22, 23, 24, 25	5, 6, 9, 10, 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25

2.Face Validity

Face validity regarded as the most basic of the content validity. According to

Gary Groth-Marnat (2009), face validity is talk about the judgement by instrument is

use. The researcher using face validity to know about the score in reading

comprehension after given the treatment (Peer Tutoring Strategy). For the form of

instrument or test in this research is objectives test, because objectives test is palatable to this class, especially in tenth grade of this vocational school.

Reliability

Reliability is the consistency of the measurement, or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. According to Frankle (1990) states that reliability refers to the consistency of scores obtained. How the consistency of each individual student from one administration to the other and the administration of set of items to the other set. This quality is essential in any kind of measurement. Reliability is necessary characteristic of any good test for it to be valid at all. A test must be reliable as a measuring instrument. In this study, researcher used pre-test to the instrument, where the researcher investigated the test with same respondent in a different time there were X Multimedia class and the class consist of 18 students which 8 males and 10 female of students. For calculating the reliability of multiple choice and matching test form the researcher used KR-21 (Kuder Richardson) formula (*see appendix 10*).

KR – 21 Formula

$$r_i = \frac{K}{(k-1)} \left(1 - \frac{M(k-M)}{k.st^2}\right)$$

Keterangan :
r_i: reliabilitas instrument
k: jumlah item dalam instrument
M: mean skor total

st²: varians total

$$= \frac{21}{20}\left(1 - \frac{14 \times 7}{621{,}5}\right)$$

Reliabilities = 1.05 x 0.844897 = **0.887142**

According to Triton in Sujianto (2009:97) the value of Cronbach's alpha can be follow:

Table 3 Cronbach's Alpha

Cronbach's Alpha	Interpretation
0,00-0,20	Less Reliable
0,21-0,40	Rather Reliable
0,41-0,60	Enough Reliable
0,61-0,80	Reliable
0,81-1,00	Very Reliable

Based on the result of validity of the pre-test (*see appendix 7*)**,** the researcher revised some items in the instrument (test), especially 1,2,14,19 because the researcher also revises some texts in the instrument. After revising, that showed the score of Cronbach's Alpha was 0.887142, it means that the instruments are very reliable for the test and can be seen at KR-21 formula.

F. **Normality and Homogeneity Testing**

1.Normality

Normality distribution test is a test to measure whether our data has a normal distribution or not. That is important to get the normality data because showed the

sample data represent to population when it is come from a normal distribution. So it can be used with the paramedic statistic. To know the normality, the researcher used *Kolmogorov-Smirnov* test with SPSS 16.0 by the value of significance 0.05. So that Ho (Null Hypothesis) is accepted and the Ha (alternative Hypothesis) is rejected. Testing of data normality is conducted by the rules as follows:

a. If the value of significant level is bigger, so the distribution of the data is normal.

b. If the value of significant level is smaller, so the distribution of the data is not normal. The result of the normality test computed by SPSS 16.0 can be seen as follow on the table 4 at below:

Table 4 Test of Normality
Tests of Normality

	factor	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Reading achievement	experiment	.168	18	.196	.922	18	.142
	control	.178	23	.056	.931	23	.114

a. Lilliefors Significance Correction

Based on the table 4 above, it showed that the test gives to experiment class (X Multimedia class), that consist of 18 students in X Multimedia class at SMK NU Tulungagung. From the table 5 above it also showed that the value of Asymp.Sig (2-tailed) it was 0.142 and then the significant value in control class that consist of 23 students in X TKJ class at SMK NU Tulungagung it was 0.114. It also that the score of significant value more than of significant level (0.05). So, based on the data above,

it can be concluded that the result null hypothesis (Ho) was accepted and alternative hypothesis (Ha) was rejected and the result of the normality has normal distribution.

2.Homogeneity

Homogeneity testing is conducted to know the whether they gotten data has a homogeneous variance or not. For computation of homogeneity testing using one way anova by SPSS version 16 and the result of the homogeneity can be seen on the table 5 at below:

Table 5 Homogeneity Independent Sample Test

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	M Dff	Std. Error Dff	95% Cnfdence Interval of the Dff Low	Up
score	Equal variances assumed	.189	.667	4.765	39	.000	13.024	2.733	7.496	18.552
	Equal variances not assumed			4.728	35.498	.000	13.024	2.755	7.435	18.614

Based on the table 5 above that showed the score of Sig.(2-tailed) was 0.000 and with the result that it can be concluded that sig. value > sig. level and there was 0.000 > 0.005. So, from the table 6 above it can be conclude that Ho (null hypothesis) was

rejected and Ha (alternative hypothesis) was accepted. It means that there is significant between experiment class and control class.

G. Data Collecting Method

In this research, researcher used test for the instrument to collected data. Here, the test consists of pre-test and post-test. There were 25 questions for the pre-test and post-test. The purpose of pre-test is to know students reading ability before get the treatment (Peer Tutoring Strategy) and pre-test was given to the students in the beginning of the research. Meanwhile, the purpose of post-test is to know the result (score) of the experiment or after the treatment has been given and the post-test was given to the students at the end of the research. Both of pre-test and post-test given to students have the same material about descriptive text, while some of the text is different and in the different time to experiment the test (instrument). The procedure to collecting data are as follows:

1. Pre-test

The pretest was done before treatment intended to obtain students' reading comprehension in descriptive text of tenth grade at SMK NU Tulungagung. Items used for pre-test consisted of 20 multiple choices and 5 True/False Statement.

2. Post-test

The posttest was given at the end of research. The items used for posttest consisted of 20 multiple choices and 5 True/False statement. The purpose of the post-test is to know about the differences after during treatment (Peer Tutoring strategy).

H. Data analysis

Data analysis is a process to identify the topics related with the research According Hogan (2007) introduced quantitative evaluation students work, which allowed for an objective assessment of students' knowledge. It means that the technique of quantitative data analysis is the process of the data is form by number. In this research, after the data of pretest and posttest collected, the result of the data to be analyzed by using SPSS especially using t-test to know the effectiveness between two variables. The researcher took two meeting it started from November, 24th 2017 until November, 25th 2017. Before the researcher gave treatment, in the first meeting the researcher conducted pre-test. The researcher gave pre-test to know students' reading ability before the researcher give treatment. And the researcher give post-test to the students' after the researcher finished gave treatment. The means score of reading comprehension before (pre-test) being taught using Peer Tutoring Strategy is bad or the score is not enough, because the score mean is 76,33 (see table 7) and after (post-test) taught using Peer Tutoring Strategy is good, because the mean score after taught is 82,28 (see Table 9). It showing that there is the difference score between the

mean of pre-test and the mean of post-test. In this research, the mean of post-test is higher than the mean score of pre-test in experiment class who were taught by Peer Tutoring Strategy for teaching reading comprehension, especially in this research descriptive text for the materials. From the result, indicate that the student's score mean after taught by using Peer Tutoring Strategy is effective than taught without Peer Tutoring Strategy. In other words, peer tutoring strategy can be used as an alternative strategy to teach reading comprehension to the students at vocational level.