CHAPTER III

RESEARCH METHOD

In this chapter, the researcher discuss about the research design, the subject of the research, research instrument, validity and reliability testing, data collecting method, research procedure, and data analysis.

A. Research Design

In conducting this research, the researcher used quantitative research approach. Quantitative research is research method that studying phenomena by collecting numeric data, then analyzed it by using statistic program. According to Perry (2005:75) stated that quantitative mainly comes from pshycology field and emphasis by statistic to make generalization from samples to populations for collecting data.

This research was classified as a quasi-experimental study. There was one group as an experimental group and the other as the control group. Wiersma and Jurs (2009: 165) state that a quasi-experimental study uses the intact groups as the research subjects. Two intact groups that had been chosen were given a different treatment. The experimental group is given a special treatment and the control group is not (Bell, 1999:15). In this research, the treatment was given to the experimental group. The teacher applied peer feedback in the teaching learning process, especially in writing class.

Table 3.1: Design of the Study

Class	Pre-test	Treatment	Post-test
E	Y_1	X	Y_2
C	Y_1	-	Y_2

E : Experiment

C : Control

Y_1 : Students' Pre-test Score

Y_2 : Students' Post-test Score

X : Treatment

Related to the design above, it could be obtained some information. The pre-test and post-test were conducted in both experimental and control group. The pre-test was conducted before giving the treatment, the use of peer feedback on the teaching of the writing skill. The treatment was only implemented in the experimental group. The post-test was conducted at the end of the research. The post-test's result determined the significant difference in writing skill between the students who were taught by using peer feedback and without using peer feedback.

B. The Subject of Research

1. Population

McMillan, (1996:85) states that a population is a group of elements or cases, whether individuals, objects, or events, that conform to specific criteria and to which we intend to generalize the results of the research**.** For a research that requires a large population for the

source of the data, the first step is to define the target population. Target population in educational research usually is defined as all the members of real or hypothetical set of people, events, or objects to which educational researchers wish to generalize the result of the research (Borg *et al* 1989:216).

The population of this research was the eleventh grade students of MAN 1 Tulungagung in the academic year of 2017/2018 which consisted of ten classes. All the members of population comprised of 339 students who had the same chance to be the sample members. From the population, it was taken 2 classes, those were XI IIS 1 and XI IIS 2.

2. Sample

Charles (1995:96) define a sample as a small group of people selected to represent the much larger entire population from which it is drawn. By studying the samples, it is hoped to draw valid conclusions about the larger group. A sample is generally selected for study because the population is too large to be studied for this study in its entirety. The sample should be representative of the general population.

The researcher selected two of ten classes from the eleventh grade students of MAN 1 Tulungagung based on the recommendation from the English teacher. Therefore, the researcher chose XI IIS 1 and XI IIS 2 classes as the subjects of the research. One class was the experimental group and the other one was the control group. One class that was XI IIS 1 class was the experimental group and XI IIS 2 class was the

control group. XI IIS 1 class was as the experimental group consists of 35 students and XI IIS 2 class was as the control group consists of 32 students.

Table 3.2: The Number of Research Sample

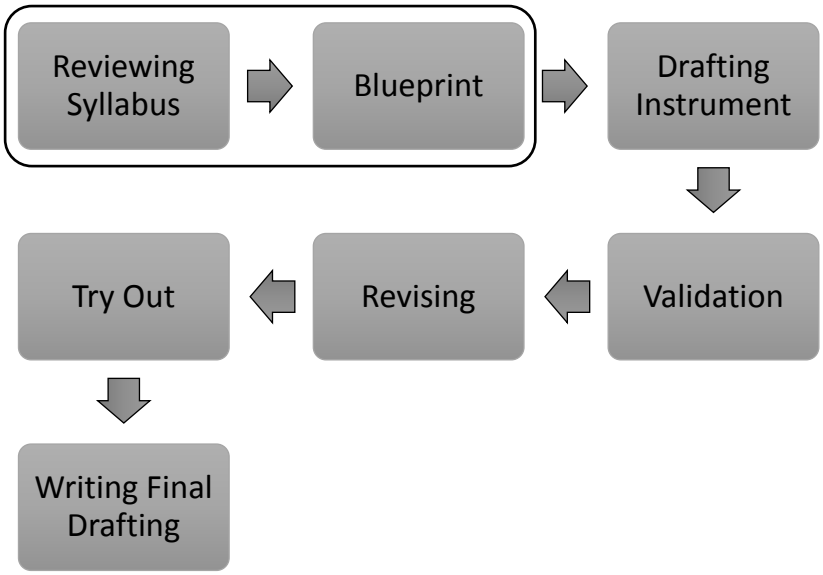
No	Class	Number of Students		Total
		Male	Female	
1	XI IIS 1 (experimental group)	**9**	**26**	**35**
2	XI IIS 2 (control group)	**12**	**20**	**32**

C. Research Instrument

Instrument has important function in this research. Frankel (2005: 112) states: "Instrument is the device the researcher uses to collect data". According to Subagiyo (2007:53) actually there are two kinds of instruments; test instrument to measure students' achievement and non-test instrument used to measure attitude. In this research the researcher used test in order to measure the students' achievement. According to Nitko (1989:32), "Test is a systematic procedure for observing persons and describing them with either a numerical scale or a category system".

In term of developing appropriate research instrument, the researcher described the steps to carry out the instrument from reviewing material in syllabus to writing the final drafting. The process of instrumentation is presented as follow in figure 3.1 below:

Figure 3.1: Process of Instrumentation



Process of instrumentation to develop research instrument composed of seven stages, those are: reviewing syllabus, developing blueprint, drafting instrument, validation, revising, try out, and writing final drafting. The process of instrumentation for writing test describe below.

a. Reviewing Syllabus

The researcher reviewed the syllabus of eleventh grade students related to material which being the object of research. In this research, writing analytical exposition text was used as type of the text.

b. Developing Blueprint

Developing blueprint was carried out after the researcher reviewing the syllabus, so that the items of instrument will be correlated with the content of the material

c. Drafting Instrument

In this stage, the researcher arranged the items of instrument and adjusted with students' writing skill. It purposed as device to collect the data and make sure students skill. The instrument used was writing essay test and divided into two kinds of test, those are pre-test and post-test.

d. Validation

Validation did by the researcher to consider some aspects of blueprint and items of instrument. It has a purpose to make a good test based on the expert to measure face validity. In this research, the researcher decided to choose the English Teacher of MAN 1 Tulungagung as the expert for validating the blueprint and instrument.

e. Revising

At the revising stages, the researcher rearranged the aspect of blueprint and instruction for the test items based on the comment and suggestion from the expert validation.

f. Try Out

Try out has purpose to measure validity and reliability of instrument before it was applied in the research class. The try out was held before pre-test and post-test which applied in another class was not involved as the research class. In this research, the researcher decided to take ten students as the sample of try out that

they were instructed to make a text based on the topic by the researcher. The students were given 60 minutes to finish writing.

g. Writing Final Drafting

In this last stage, the researcher drafted the complete research instrument as the final step. That was intended to the result of reliability test showed that the research instrument has been appropriate and can be used as device to collect data.

This research used a writing test as the instrument to collect data. The result was used to describe the significance and differences writing skill of learners who were taught by using peer feedback and who were taught without using it. There were two tests: a pre-test (before the treatment) and a post-test (after the treatment). (See Appendix 1 for detailed research instruments for pre-test and post-test).

The pre-test and post-test were used to measure students' skills in writing of both experimental and control groups. Before the researcher implemented the instruments to the sample of the research, the validity and reliability of the instruments of pre-test and post-test should be calculated.

The researcher designed the different topic of instruments for the pre-test and the posttest. Both tests were developed based on the materials of students' writing skills, which referred to the Main Competence and Basic Competences of the School-based Curriculum of Senior High School of the eleventh grade in English subject.

D. Validity and Reliability Testing

To know whether the test is good or not, there are two important characteristics that should to be considered, those are validity and reliability. The validity and the reliability of the instruments are explained below:

1. Validity

An instrument was considered valid if it was able to test what should be tested. It could explain the data from the variables which were accurately researched. Wiersma and Jurs (2009: 356) say that a valid instrument refers to the extent to which an instrument measures what is supposed to measure. There were three kinds of validity applied in this research. They were content validity, construct validity, and face validity.

a. Content Validity

The writing ability test employed content validity. According to Wiersma and Jurs (2009: 355), content validity is the process of how the test establishes the representativeness of the items in a certain domain of the skills, tasks, knowledge, and other aspects that are being measured. In the content validity, the coverage of task becomes the evidence. A test will have content validity if it represents sample of language skills, structures and other aspects being tested. Besides, the test should include a proper sample of the structure or content which is relevant with the purpose of the test. Therefore, the test was developed in reference to the Main

Competence and Basic Competency for eleventh grade students of Senior High School. The basic competence and indicators are presented in Table 3.3.

Table 3.3: Basic Competence and Indicators of the Eleventh Grade Students of Senior High School for English Subject.

Basic Competence	Indicators
4.4 Analytical Exposition Text *4.4.1* Expressing the meaning and rhetorical steps within simple text in the form of analytical exposition using written language accurately, fluently, and appropriately in daily context life. (*Mengungkapkan makna dan langkah retorika dalam teks eksposisi analits sederhana secara akurat, lancar, berterima dan yang menggunakan ragam bahasa tulis yang sesuai dalam konteks kehidupan sehari-hari.* *4.4.2 Create analytical exposition text related to the actual issues by knowing social function, text structure, and language use correctly within the context. (Menyusun teks eksposisi analitis tulis, terkait isu aktual, dengan memperhatikan terkait fungsi sosial, struktur teks, dan unsur kebahasaan, secara benar dan sesuai konteks).*	1. The students are able to make a simple essay based on generic structure of analytical exposition text; thesis, arguments, reiteration. 2. The students are able to use varied vocabulary. 3. The students are able to use appropriate language pattern of analytical exposition; simple past tense, conjunctions, etc.,

b. Construct Validity

Wiersma and Jurs (2009: 358) state that construct validity refers to theoretical construct or trait being measured, but not to the technical construction of the test. This validity was used to examine whether the test had a consistent representation with theories underlying the material was given or not. To fulfill the construct validity, the researcher constructed the instrument based

on the blue print of the writing skill consisting of some specific indicators. To score students' writing test, the researcher used scoring rubric adopted from Jacob *et al.'s* (1981). (See on Appendix 2 for the detailed writing scoring rubric.)

c. Face Validity

A test is said to have face validity if it measures what is supposed to measure. Face validity is hardly a scientific concept that is very important. A test which wasn't has face validity may not be accepted by test takers, teachers, education, authorities or employers. In this test, there were some aspects that were considered from this test to make a good test based on the validity.

1) The instruction must be clear for the students, what they should do in the test.
2) In this test, the students of second grade are instructed to tell activity in the pictures in the form of recount text. Thus, the degree of difficulty of the test must be suitable with their level.
3) The consideration of time allocation must be clearly. The researcher gave limited time about three minutes for each student.

In this research, the researcher has made a blueprint of the writing skill test that was used as a concept in making test. Afterward, the researcher asked the expert to give comment or

revision suggested based on the blueprint given as a part of face validity stage. For detailed blueprint and expert validation form of blueprint for this research can be seen in Appendix 3.

2. Reliability

Reliability is an essential characteristic of a good test. A reliable test is consistent and dependable. A test was considered reliable if the same test was given to the same subjects or matched subjects in two different occasions. The test should yield similar result (Brown, 2004: 20). Wiersma and Jurs (2009: 355) state that reliability is the consistency of the instrument in measuring whatever it measures. It means that if the instrument had a consistent result in the second chances or more, the instrument was reliable.

The formula that was used to measure the reliability was Pearson Product Moment Correlation Formula (Tuckman, 1998: 275). It was employed by Bivarriate Correlation of SPSS 16.00.

In this research, the reliability of this instrument of the writing ability was done by using *inter-rater* reliability. According to Creswell (2008), inter-rater reliability involves two or more individuals of the observed behavior. Inter-rater reliability is achieved when two scorers or two raters do the scoring. Then, the two sets of scores gotten from the two raters are calculated to get the correlation coefficient. For getting the reliability value, the researcher had conducted try out test to 10 students in the same grade of Senior High School. (See Appendix 4

for the detailed score of try out test). The researchers recorded their scores of the behavior and then compared them to see if their scores were similar or different. To get the result of inter-rater reliability of the writing test, the researcher used SPSS 16.00 for Windows by using the Pearson formula.

The result of reliability of try out test was 0.937 between rater 1 and rater 2. The following table represent the result:

Table 3.4: Reliability Test

		RATER1	RATER2
RATER1	Pearson Correlation	1	.937
	Sig. (2-tailed)		.000
	N	10	10
RATER2	Pearson Correlation	.937	1
	Sig. (2-tailed)	.000	
	N	10	10

Based on the result of inter-rater test that indicated on 0.937, it could be inferred that the test was reliable. It was in the level of *very high*. Wiersma and Jurs (2009: 335) state that the reliability coefficient rates on value 0 to 1.0. Basically, value 0 meant there was no "true" component in the observed score. In contrast, if the reliability was 1.0, it meant that there was no error; the observed score was true. The rate of value in the instrument reliability is presented in the following table:

Table 3.5: The Value of the Reliability Coefficient (Suharto, 2006: 84)

Reliability Coefficient	Reliability Category
0.800 up to 1.000	Very high
0.600 up to 0.799	High
0.400 up to 0.599	Fair
0.200 up to 0.399	Low
0.000 up to 0.199	Very low

E. Data Collecting Method

In this study, the data were collected by using a test. The detail of the data collection techniques could be explained as follows.

a. The pre-test

The pre-test was administered at the beginning of the study before the students were given a treatment. It was held on January 9th 2018. It was used to identify the achievement of writing an analytical exposition text. The test was given to the experimental and control class, namely XI IIS 1 and XI IIS 2 class. In this test, the students were asked to make a text related to analytical exposition.

The researcher provided 60 minutes for the students to write analytical exposition text based on the topic given. The pretest is aimed at measuring the students' preliminary knowledge of analytical exposition text and their achievement.

b. The post-test

The post-test was administered after all treatments were done. It was held on January 20th 2018. It was conducted to know the students'

skill of experimental and control class after the treatment. The students from both of the experimental and control class were given the same test. The students were asked to write a text related to analytical exposition based on the topic given to the students in 60 minutes.

The post-test was given in order to measure the improvement of the students' understanding on writing analytical exposition text after they learn writing analytical exposition text by using peer feedback in experimental class and without using peer feedback in the control class. The result was analyzed to see how effective the use of peer feedback as a technique for developing students' writing skill of analytical exposition text. The result of the post-test should be compared with the result of the pre-test to find out the information in this study as stated in the objective of this study.

The implementation of the research was done with the cooperation of the principal and the English teacher at MAN 1 Tulungagung. The observation was conducted in five meetings including pre-test and post-test. Each meeting had 90 minutes duration. Table 3.6 presents the schedule of the implementation and the goals of each treatment.

Table 3.6: The Schedule of the Implementation of the Treatment

Time	Material	Activities	Goals
Tuesday, January 9th 2018	Analytical Exposition Text	**Pre-test of Experimental Class** Topic: Global Warming	To measure students' writing skill before the treatment
Saturday, January 13th 2018	Analytical Exposition Text	**Pre-test of Control Class** Topic: Global Warming	To measure students' writing skill before the treatment
Monday, January 15th 2018	Analytical Exposition Text	**1st Treatment** Topic: Air Pollution	The students identify a text related to the topic
Wednesday, January 17th 2018	Analytical Exposition Text	**2nd Treatment** Topic: Water Pollution	The students identify a text related to the topic
Friday, January 19th 2018	Analytical Exposition Text	**3rd Treatment** Topic: Recycling Plastic	The students identify a text related to the topic
Saturday, January 20th 2018	Analytical Exposition Text	**Post-test of Both Classes** Topic: Reforestation	To measure students' writing skill after the treatment

F. Research Procedures

The procedures of the research are as follow:

1. Introduction step of research
    a. Developing of lesson plan. (See Appendix 5 for the detailed activity in lesson plan).
    b. Developing research instrument and test to measure the effectiveness of peer feedback technique.
    c. Conducting validity and reliability of test.
    d. Analyzing the result of test to know validity and reliability of instrument which is used as research instrument.

2. The implementation step of research

   a. Pretest

      Pretest was given to the students before doing treatment. The purpose of doing pretest is to get writing score of the student's before doing treatment. In pretest, the researcher asked students to make analytical exposition text with relevant topic related to actual issues. The pretest topic was Global Warming.

   b. Training

      Training in peer feedback practices began by students working on their own papers with a reflective note to the teacher explaining what he or she was trying to do in a paper or what was learned. Initially, teacher asked the students to make two until three paragraphs, then students can be given a short list of attributes to look for in their papers. This involved the subject of task from the modeling stage, such as topic sentences, transition paragraphs, problem-solution patterns.

      Afterward, the list submitted with the draft, then the student begins to change their draft with their peer and vice versa then they started to read their peer work. Next, teacher introduced students to correction symbol or giving sign, like circle, underline, or cross when they found error or mistake on their peer writing. Asking students to write their reflections to increase their understandings during the writing process, encouraging revision and editing texts.

c. Treatment

1) The researcher asked the students to make analytical exposition text with relevant topic related to actual issues. The treatment' topic was divided into three topics. In each meeting, students got different topic for writing their analytical exposition text. The topics were air pollution, water pollution, and recycling plastic.
2) The researcher divided students into some groups consisting of two students for each to conduct peer feedback technique.
3) The students changed his/her own text to their friend and vice versa.
4) The students read their friend' text and edit the text based on some criteria including: content, organization, vocabulary, language use and mechanics. They give sign to the text, like circle or underline, and give mark for inappropriate word or sentence.
5) The students filled the peer feedback checklist instrument by giving tick (√) or cross (X) depend on the criteria accomplished. (See Appendix 6 for the detailed evidence of peer feedback checklist).
6) The students delivered students conference between the couple to give feedback and suggestion about his/her friend' text.

7) The students gave the text back to their friend for getting revision.

d. Posttest

Posttest was administered to the students after giving the treatment. The purpose of doing posttest is to get speaking score of the student's after doing treatment.

In posttest, the researcher also asked students to make analytical exposition text. The posttest topic was changed from the pretest topic because the researcher aimed to know the ability of students coped the difference topic, however it was still linear with previous topic related to the actual issues. The topic of posttest was Reforestation.

3. The last step of research

a. Processed the data of pretest and posttest

b. Analyzed the result of data

c. Generated conclusion of the research based on the data tabulation

G. Data Analysis

The data analysis was aimed at describing the result of the mean and standard deviation score, test of Normality and test of Homogeneity. The descriptions are presented as follow:

a. Mean and Standard Deviation

Hatch and Farhady (1982: 55) state that the mean is the commonly used measure because the mean took all scores into

account. The mean was same as average of score. Hatch and Farhady (1982: 57) state that standard deviation is used to measure variability. The larger the standard deviation, the more variability from the central point in the distribution and the smaller the standard deviation, the closer the distribution is to the central point.

b. Test of Normality

This test was aimed at finding whether the distribution of the responses in the population met the normal distribution requirement or not. It was gained from the scores of pre-test and post-test. There were two types of testing which can be used to test the normality, those were Kolmogorov-Smirnov or Shapiro-Wilk. The appropriate test can be utilized based on the number of sample used in the research. Dahlan (2010) state that if the research sample are more than 50, the normality test uses Kolmogorov-Smirnov and while the research sample are less than 50, it can be used Shapiro-Wilk.

Hence, to determine the level of significance, the researcher used One Sample Kolmogorov-Smirnov in the significance level: 0.05. from SPSS version 16.0 of Windows computer program because this research used 67 students as the research sample.

Based on the result testing of normality used SPSS 16.0 program, researcher found normality pre-test and post-test as below:

Table 3.7: The Test of Normality Pre-test

	KELAS	Kolmogorov-Smirnov[a]		
		Statistic	df	Sig.
SCORE	XI IIS 1 (E)	.100	35	.200*
	XI IIS 2 (C)	.081	32	.200*

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance

Table 3.8: The Test of Normality Post-test

	KELAS	Kolmogorov-Smirnov[a]		
		Statistic	df	Sig.
SCORE	XI IIS 1 (E)	.139	35	.086
	XI IIS 2 (C)	.128	32	.199

a. Lilliefors Significance Correction

Based on the tables above, it resulted the normality between pre-test and post-test. In the pre-test, it found that the significance of experimental variable is 0.200 and control variable is also 0.200. Then in the post-test, it found that the significance of experimental variable is 0.086 and control variable is 0.199. From those data, all the significance variable whether pre-test and post-test indicated that the result is more than 0.05. So, it can be concluded that the

data is normally distributed. Therefore, the data is qualified to be analyzed.

c. Test of Homogeneity

This test was used to analyze whether the sample variance was homogeneous or not. In this study, the test of homogeneity was done by using SPSS version of Windows computer program. The test was considered homogeneous if the level of significance was more than 0.05.

Based on the result of homogeneity used SPSS 16.0 program, researcher found homogeneity pre-test and post-test as below:

Table 3.9: The Test of Homogeneity of Variances for Pre-test

PRE-TEST SCORE

Levene Statistic	df1	df2	Sig.
1.297	1	65	.259

Table 3.10: The Test of Homogeneity of Variances for Post-test

POST-TEST SCORE

Levene Statistic	df1	df2	Sig.
.046	1	65	.831

From the result above, it indicated that the significant of pre-test is 0.259 and the significant of post-test is 0.831. Accordingly, the homogeneity testing of variance in pre-test and post-test score whether experimental group and control group for writing analytical exposition text in this research showed that the data had homogeneous variance, so it is qualified to be analyzed.