

CHAPTER III

RESEARCH METHOD

This chapter discusses the research method used in this. It covers the presentation of the research design, research variable, data collection technique, population and sample, research instrument, research procedures, validity and reliability testing, and data analysis.

A. Research Design

In conducting the research the writer applied the quantitative research design as the research method. Quantitative method is a method that correlates with statistical analysis of the data, which is typically in numeric form (Creswell, 2012). Afterwards, because this study examines the effect of peer review in students' motivation and writing ability, the quasi-experimental design was applied with the matching-only posttest control and experiment group designs. Essentially, the writer assigns intact groups of the experimental and control treatments, and conducts the experimental treatment activities with the experimental group only in which using peer review technique as the treatment activity, and then administers a post-test to assess the differences between two groups (Creswell, 2012).

B. Research Variables

Arikunto (2006) stated that the variable is the object of study, or what is the point of a study. Moreover, variable is a characteristic of an individual or organization that can be measured by the researchers and also varies which has different value among different individuals of organizations (Creswell, 2012). A common and useful way to think about the variables is to classify them as independent or dependent. Independent variables are those that the researcher chooses to study in order to assess their possible effect(s) on one or more other variables (Fraenkel, 2012). Those are presumed to affect other variables called dependent variables. In other words, dependent variables are those that depend on or are influenced by the independent variables. According to the explanation above, this study also classified the variables into independent and dependent variables.

1. Independent variable chosen is peer review technique. Peer review technique becomes the treatment or manipulated variable.
2. Dependent variables are students' writing motivation and writing ability. They become the outcome from independent variable.

C. Population and sampling

1. Population

Ary, et al (2008) defined population as all members of any well-defined class of people, events or objects. Furthermore, Creswell (2012) defined population as a group of individuals with same characteristics that

can be identified by the researcher. Considering that reason, the population of this research is the entire eighth grades in SMPN 1 Tanggunggunung. They are in academic year 2018/2019. The eighth grades students of SMPN N 1 Tanggunggunung are taken as the population since it is done the fact that in curriculum 2013 recount text is taught.

The entire eighth grades students are divided into seven classes. The seven classes are class VIII A up to G. Each of class consists of 30 – 32 students. The total of students at eighth grade in SMPN 1 Tanggunggunung is 220 students. It is considered homogeneous because all the populations are not based on ranking. It can be seen from the table:

Table 3.1
The students of eight grades in SMP N 1 Tanggunggunung

No.	Class	Students
1	VIII A	32
2	VIII B	32
3	VIII C	31
4	VIII D	32
5	VIII E	32
6	VIII F	31
7	VIII G	30
Total		220

2. Sampling

To obtain the sample of this study, the researcher chooses a control and experimental class based on the available classes of the eight grade students of SMP N 1 Tanggunggunung. All the classes of eighth grades have the same chance to be the subject of this study. The researcher chooses the classes that will be the control and experimental group by using clustered random sampling. Charles (1993) stated that Cluster sampling technique involves the random selection of groups that already exist. To make sure that the groups are chosen randomly, the researcher uses lottery to choose the experimental and control group. As a result, class D becomes the control class and class G becomes the experimental class. The distribution of sample is presented in table 3.2.

Table 3.2
Samples of the research

No.	Classes	Students
1	VIII D (The control group)	32
2	VIII G (The experimental group)	30

D. Research Instruments

In this study, the researcher used some instruments for gaining the data. The instruments were questionnaire and test. The first instrument was questionnaire which to know the level of students' motivation which deals with students' in learning writing English. It is covering intrinsic, extrinsic of motivation, task value, control of beliefs and self-efficacy for learning and

performance that developed from Academic Writing Motivation Questionnaire (2012) as mentioned below in table 3.3:

Table 3.3
Indicators of questionnaire items

Components	Indicators	Number of items
Intrinsic Goal Orientation	- To concerns the degree of the student perceives herself to be participating in a task for reasons such as challenge, curiosity, and mastery	1, 2, 13, 14, 18
Extrinsic Goal Orientation	- To concerns the degree of the student perceives herself to be participating in a task for reasons such as grades, rewards, performance, evaluation by others, and competition	8, 11, 16, 20
Task Value	- To know students' perceptions of the course material in terms of interest, importance, and utility	3, 4, 15, 17
Control of Learning Beliefs	- To know students' beliefs that their efforts to learn will result in positive outcomes	5, 10, `12, 19
Self-Efficacy for	- To know the expectancy	6, 14

Learning and Performance	<p>for success that refers to performance expectations, and relates specifically to task performance</p> <ul style="list-style-type: none"> - To know the students' Self-efficacy that is a self-appraisal of one's ability to master a task 	
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The questionnaire was given to both control and experimental group students after performing the posttest. This purpose was to collect the information of students' motivation with or without the use of the peer review technique in teaching writing recount text. There are twenty items of motivational statements that are developed and adapted from Academic writing motivation questionnaire (see appendix 1 and 2). Each items has five alternative answers that are Strongly Disagree, its score = 1, Disagree, its score= 2, Uncertain, its score= 3, Agree, its score= 4 and Strongly Agree, its score = 5.

The second instrument was a test which administered after the students get the treatment. This posttest is to measure students' writing ability after having manipulated. Furthermore, the researcher asked the students to write simple short paragraph about 100 words and the topic is their unforgettable experience (see appendix 3). The students' writing is scored by using scoring system proposed by Tribble (1996) that consisting of five components: content, organization, vocabulary, grammar, and mechanics (see appendix 4). The test

conducts 40 minutes for writing test. The following are the criteria for scoring writing:

Table 3.4
Writing scoring rubric

Area	Score	Descriptor
Task Fulfillment/ Content	20-17	Excellent to very good:
	16-12	Good to average:
	11-8	Fair to poor:
	7-5	Very poor:
	4-0	Inadequate:
Organization	20-17	Excellent to very good:
	16-12	Good to average:
	11-8	Fair to poor:
	7-5	Very poor:
Vocabulary	20-17	Excellent to very good:
	16-12	Good to average:
	11-8	Fair to poor:
	7-5	Very poor:
	4-0	Inadequate:
Language	30-24	Excellent to very good:
	23-18	Good to average:
	17-10	Fair to poor:
	9-6	Very poor:
	5-0	Inadequate:
Mechanics	10-8	Excellent to very good:
	7-5	Good to average:
	4-2	Fair to poor:
	1-0	Very poor:

Besides, in this research inter-rater was used to score the result of the test. The scoring has been done by the researcher herself and the English teacher in the school. The scores of two raters were summed up and then divided into two. The final score = Content + Organization + Vocabulary + Language + Mechanics

Example:

Content	: 20
Organization	: 20
Vocabulary	: 20
Language	: 30
Mechanics	: 10
Total	: 100

E. Data Collection Technique

Technique of data collection of this research can be described as follows:

1. Questionnaire

Questionnaire is a written instrument consisting of questions to be answered or statements to be responded by respondents (Latief, 2016). There are twenty items in the questionnaire that will be answered by the students. Here the researcher gave the questionnaire to the students to know the level of motivation of the students' after getting writing material with and without peer review technique in teaching writing. The

questionnaire is given to both control and experimental group in the last meeting.

2. Test

The posttest was given to the students. It is given after the treatment. The purpose of this test is to know how far the effect of peer reviews technique in the students' writing ability. In the posttest, the students also are asked to write simple short paragraph of recount text based on the provided topics and 40 minutes for time allocation.

F. Research Procedures

The procedures of this study were gained by several steps that can be described as follow:

1. Preparing the lesson plan

The lesson plan was designed to be implemented during treatment session. The material included in designing the lesson plan is recount text in which it is organized for five meetings (see appendix 5). The last meeting is allocated to conduct the post-test, while the other four meetings are allocated to train and implement the treatment by using peer review technique.

2. Trying out the research instrument by conducting the pilot test

The pilot test was conducted before the post test in order to examine whether the questionnaire and writing test as the instruments are valid or not. The pilot test was given to other class of eighth grade students

in similar level which are not included in both experimental and control group. The other class of eight grade students who involved in this pilot test was assumed that they have already learned recount text.

3. Conducting the treatment

After knowing the instruments that used in the study are valid, the researcher did the next step that is conducting the treatment in experimental group only. Creswell (2012) stated that in experimental class, the researcher physically manipulates with more condition so that the students get something different in experimental group than in control group. The treatment was the implementation of peer review technique in teaching writing recount text. Peer review guide and peer review sheet were given to all students in experimental group to help them in reviewing their peer (see appendix 6 and 7). The time allocation for each meeting consists of two hours instruction in which one hour instruction is forty minutes. The planning of time schedule of the research can be seen in the table below:

Table 3.5
Research Schedule

Date	Experimental group	Control group
March 6 th , 2019	Writing text 1	Writing text 1
March 9 th , 2019	Peer review training and peer review 1	Writing text 1
March 13 th , 2019	Revised draft 1 and peer review 2	Writing text 2

March 16 th , 2019	Final draft	Writing text 2
March 19 th , 2019	Posttest and questionnaire	

4. Conducting post test

Posttest was held after all treatments are conducted. Creswell (2012) stated that posttest is a measure on some attribute or characteristic that is assessed for participants in an experimental after a treatment. The next step was conducting the posttest which aimed to measure the students' ability in writing skill after receiving the peer review technique. This posttest was given to both control and experimental groups. This posttest aims to measure the differenced of students' score between the control and experimental group.

5. Administering questionnaire.

In questionnaire, the subjects respond to the questions by writing or, more commonly, by marking an answer sheet and it can be given to large number of people at the same time (Fraenkel, 2012). In this study, the subjects were asked to mark on the answer sheet based on what they feel. This questionnaire was distributed for both control and experimental group. This goal was to know whether teaching with or without using peer review technique in writing recount text influences their motivation level or not.

G. Validity and Reliability and Readability

The quantitative research always depends on measurement. These measurements are validity and reliability through the instruments of the research. The instruments of this study are writing test and administering questionnaire. In this study, the writing test was used to measure the students' ability in writing recount text after they were taught by peer review technique. Moreover, the other instrument in this study was administering questionnaire. This purpose of questionnaire is to know whether the technique that was given gave significance effect to their motivation level or not.

1. Validity, reliability and readability of test

a. Validity of test

According to Arthur, the validity test is conducted to check whether the test measures what is intended to be measured (Arthur, 2003). It means that by using validity test we will know whether test that we are done is valid or not. Then, Best and Kahn (1995) say that a test is valid if it is measures what it claims to measure. In the case point, the content and construct validity were used to measure whether the test has good validity or not.

1) Content Validity

Best and Kahn (1995) say that content validity refers to the degree to which the test actually measures, or is specifically related to, the traits for which it was design, content validity is based upon the careful examination of course textbooks, syllabi, objectives, and the judgments

of subject matter specialists (Best and Kahn, 1995). So, the material that was taught must be appropriate with the curriculum. Based on the English syllabus, recount text was taught in the second semester of the eighth grade in junior high school (see appendix 8). It can be concluded that this instrument has good content validity.

2) Construct Validity

Best and Kahn state that construct validity is the degree which scores on a test can be accounted for by the explanatory constructs of a sound theory. Consequently, construct validity should focus to what will be measured, that is recount text writing ability.

In this research, to provide construct validity evidence the researcher was conducted a writing test. This test was composed to measure the students' recount text writing ability based on some criteria of recount text writing's scoring rubrics. They consist of content, organization, vocabulary, language and mechanic. The instrument was consulted to the English teacher of SMPN 1 Tanggunggunung to make sure whether the instrument has been valid or not (see appendix 9). As a result, this study supported with strong construct validity evidence.

b. Reliability of test

Johnson and Christensen (2008) stated that reliability refers to the consistency or stability of the test scores. Wiersma and Jurs (2009) state that reliability is the consistency of instrument in measuring whether it measure. Moreover, Brown (2004) said that the test should yield similar result. It meant

that if the instrument had a consistency result in second chance or more, the instrument was reliable.

In this research, the reliability of instrument of writing test was done by inter-rater reliability. To obtain inter-rater reliability, researcher used reliability coefficient among two raters. Inter-rater reliability is the degree of agreement between two or more raters or scorers (Creswell, 2012). To get the result of inter-rater reliability of the writing test, the researcher used SPSS 16.00 for Windows by using the Cornbach's Alpha formula. Kouame (2010) presented the description value of reliability coefficient in table 3.6.

Table 3.6
The value of reliability coefficient

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

In this research, the inter rater reliability counted level of the reliability based on the scores of writing test in tryout class that were

gotten by two raters simultaneously (see appendix 10). They were English teacher and researcher. The result of Alpha can be seen in table 3.7.

Table 3.7
Reliability Statistic of Test

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.944	.945	2

Based on the table above, the result of Cronbach's Alpha is 0.944. It means that the inter rater reliability has excellent internal consistency of reliability. It could be inferred that the test was reliable.

3. Readability of writing test

Kouame (2010) said that readability tests are indicators that measure how easy the direction and instruction can be read and understood. Thus, the readability was conducted in order to know the clarity of the direction and the clarity of the instruction and readability test were conducted before the treatment which was given by the researcher.

In this study, the researcher asked form the expert, he is the lecturer of IAIN Tulungagung. He noticed that the instrument was quite readable and understandable by the readers or test takers. It meant that the instrument was readable (see appendix 12).

3. Validity and Reliability of Questionnaire

Questionnaire is one of the most widely used tools to collect data in research. The main objective of the questionnaire is to obtain relevant information in most valid and reliable manner. Thus, the accuracy and consistency of questionnaire forms a significant aspect of research methodology which is known as validity and reliability. In this study, the researcher uses SPSS software to test the validity and reliability of the questionnaire.

a. Validity

This test of validity is conducted to know the level of significant. If the $\text{sig} < 0.5$, it means that the instrument is valid. Then, if the $\text{sig} > 0.5$, it means that the instrument is not valid. Based on the computation, the significant value of each item of questionnaire is smaller than 0.5. It can be concluded that all the items of questionnaire were valid. The detail result in SPSS can be seen in appendix 13.

b. Reliability

This test is conducted to compare Cronbach's Alpha value. The minimum of Cronbach's Alpha value is 0.6. It can be conclude, if Cronbach's Alpha value is greater than 0.6, it is reliable. While

Cronbrach's Alpha value is smaller than 0.6, it is not reliable. The following are the steps of testing reliability by using SPSS. The following is the result of Cronbach's Alpha of questionnaire:

Table 3.8
Reliability Statistics

Cronbach's Alpha	N of Items
.766	20

Based on the calculation above, the result of Cornbach's Alpha is 0.766. It means that the Alpha $>$ 0.6. Therefore, it can be concluded that the questionnaire is reliable.

H. Data Analysis

After collecting the data, the data was analyzed by using t-test and MANOVA to reveal the hypotheses. A t-test compares the means of the data sets to determine if there is a statistically significant difference (Stanley, 2015). The data sets are independent of one another and not related, therefore, this is sometimes referred to as the independent-sample t-test. In this study t-test was used to compare the test scores of students who got peer review technique with the test scores of student that do not use peer review technique. The t-test was to answer the first and second the hypotheses.

Moreover, Multivariate analysis of variance (MANOVA) is a procedure for comparing multivariate sample means. As a multivariate procedure, it is

used when there are two or more dependent variables (Warne, 2014). The researcher used MANOVA to reveal the third hypothesis whether there is significant effect of peer review in students' writing motivation and students' writing ability simultaneously.

1. Fulfillment of the Assumptions

Parametric statistical significance tests, such as analysis of variance and least squares regression, are widely used by researchers in many disciplines, including, statistics parametric tests to produce accurate results, the assumptions underlying them such as normality and homogeneity test must be satisfied (Hurn, 2008).

a. Test of Normality

The Normality was used to know whether the data in experimental and control class had the normal distribution or not. In this research statistical computation by using SPSS (*Statistical Package for Social Science*) version 16.0 of windows computer program was used for normality. The tests of normality employed were Kolmogorov–Smirnov and Shapiro Wilk.

The hypotheses formulas are:

H_0 : The data are normally distributed.

H_a : The data are not normally distributed.

Criteria of acceptance are formulated as follows:

H_0 is accepted if $Sig > \alpha = 0.05$

H_a is accepted if $Sig < \alpha = 0.05$

b. Test of Homogeneity

After the researcher gets the conclusion of normality test, the homogeneity test was done in order to know whether the data was homogenous or not. In this research statistical computation by using SPSS (*Statistical Package for Social Science*) version 16.0 of windows computer program was used for homogeneity.

The hypotheses for the homogeneity tests are:

H_0 = the variance of the data is homogenous

H_a = the variance of the data is not homogenous

Criteria of acceptance or rejection of homogeneity tests are as follows:

H_0 is accepted if $Sig > \alpha = 0.05$

H_a is accepted if $Sig < \alpha = 0.05$

2. Independent sample t-test

After knowing that the data was normal and homogeneous, the data would be analyzed by using independent sample t-test in order to know the significance of the treatment effect. The researcher used SPSS 16.0 of windows computer program to process the data.

The hypotheses formulas are:

- H_a
1. There is significant effect of peer review in students' writing motivation.
 2. There is significant effect of peer review in students' writing ability.

- H_0
1. There is not significant effect of peer review in students' writing motivation.
 2. There is not significant effect of peer review in students' writing ability.

Criteria of acceptance of the hypothesis tests are as follows:

H_a is accepted if $\text{Sig} < \alpha = 0.05$

H_0 is accepted if $\text{Sig} > \alpha = 0.05$

3. MANOVA (Multivariate analysis of variance)

There are some prerequisite tests before conducting MANOVA.

There are homogeneity of variance and homogeneity of variances and covariance.

a. Homogeneity of variance

Homogeneity of variances assumes that the dependent variables exhibit equal levels of variance across the range of predictor variables (Tabachnick and Fidell, 1996). Homoscedasticity can be examined graphically or by means of a number of statistical tests. In this study, homogeneity of variance was carryout by using SPSS 16.0. It can be seen from Levene's test with the criteria of significant > 0.05 .

- 1) Significance or probability value < 0.05 , the H_0 is rejected, it means the data has different variant or not homogeneous.

- 2) Significance or probability value ≥ 0.05 , the H_0 is accepted, it means the data has the same variant or homogeneous.

b. Homogeneity of Variances and Covariance

In multivariate designs, with multiple dependent measures, the homogeneity of variances assumption described earlier also applies. However, since there are multiple dependent variables, it is also required that their intercorrelations (covariances) are homogeneous across the cells of the design. There are various specific tests of this assumption. In this study, homogeneity of variance and covariance was carryout by using SPSS 16.0. It can be seen from Box's M test with the criteria:

- 1) Significance or probability value < 0.05 , the H_0 is rejected, it means the data has different matrix variant or not homogeneous.
- 2) Significance or probability value ≥ 0.05 , the H_0 is accepted, it means the data has the same matrix variant or homogeneous.

c. Test of hypothesis

After conducting the prerequisites tests, the data would be analyzed by using MANOVA in order to know the significance of the treatment effect simultaneously. The researcher used *SPSS (Statistical Package for Social Science)* 16.0 of windows computer program to process the data.

The hypotheses formulas are:

H_a 3. There is significant effect of peer review in students' writing motivation and students' writing ability simultaneously.

H_o 3. There is not significant effect of peer review in students' writing motivation and students' writing ability simultaneously.

Criteria of acceptance of the hypothesis tests are as follows:

H_a is accepted if $\text{Sig} < \alpha = 0.05$

H_o is accepted if $\text{Sig} > \alpha = 0.05$