CHAPTER III
RESEARCH METHODOLOGY

This chapter describes the method which is used in this study and the subject being concerned. It includes research design, variable, population and sample, research instruments, data collection and data analysis.

3.1. Research Design

This study used quantitative research design and also used experimental design to test the theory whether it gives a significant influence or not. But not only that Experimental research was also divided into two models, namely true experiment and quasi experiment. In this study. The researcher used quasi experimental, it was because quasi experimental was one of the appropriate research designs that made it possible to adjust school schedules and rules (Cohen, Manion, & Morrison, 2007). Quasi-experimental design is a research design that has several aspects of a randomized experimental design, for example pre and post tests as a measure and comparison of groups controlled by treatment.

There are three variables in this study, the first is using collaborative writing strategy, the second is using Edmodo and the third is the application of student writing skills. The dependent variable is writing skill while the independent variable is online collaborative writing and Edmodo. There will be two groups in this study, the first experimental group that will be given treatment using Online Collaborative Writing Through Edmodo and then the control group that uses only Collaborative Writing.

More details will be shown as in the table below :

Group	Pre-test	Treatment	Post-test
Experimental	√	√	√
Control	√	-	√

Table (1) Design of Experimental Research

Criteria:

√ : With the treatment of Collaborative writing through Edmodo

\- : Collaborative Writing

3.2. Population and Sample

3.2.1. Population

The population of this study is 10th grade student from MA Masyhudiyah academic year 2019/2020. There are 2 classes with 56 students as a whole subject. They are divided into 2 groups, the first group is experimental group and the second group is control group.

No.	Class	Number
1.	X IPA 1	28 Students
2.	X IPA 2	28 Students
Total		56 Students

Table (2) Student's Number

3.2.2. Sample

Sample is part of the population. In this study, the researcher using a cluster sampling technique. Two classes of 10th grade students from MA Masyhudiyah were taken as the sample of this study. There are X-MIPA 1 and X-MIPA 2, and in each class consists of 28 students. So, the total numbers of students are 56 students.

3.3. Data Collection

In this study the researcher collects the data by using writing test. This data is very important and needed in supporting this study. Before treatment students are given a pre-test to find out their writing level before being given treatment. After treatment students will be given a post-test to find out the effect of Collaborative Writing through Edmodo on Students Writing Skill. And after that the researcher analyzed the result of pre-test and post-test of two groups by using sample test in SPSS 16.0 program

3.3.1. Instrument

Research instrument has an important role in implementing research and also a tool which is used by researchers to collect data. The objective of this research is to investigate the effect of Online Collaborative Writing through Edmodo on students' writing skill. In this research, researchers used the test as an instrument.

3.3.1.1. Test

There are two tests that are used by the researcher. Those are pre-test and post-test, a pre-test will be given to students before treatment. This is to get data entry for students in writing skills. While post-tests are given after treatment, which aims to determine whether the Online Collaborative Writing through Edmodo strategy can have a good effect on students' writing or not.

3.3.1.1.1. Pre-test

The student will be given a pre-test. The benefit of implementing a pre-test is to find out the initial abilities of students about the lessons to be delivered. This is to get data entry for students in writing skills. The contents of the items are based on the standard of competency in the syllabus (K13) in 10th grade students at the MA Masyhudiyah. On a pre-test the researcher asks the students to write a descriptive text about tourism place or historical place.

3.3.1.1.2 Post-test

The procedure in the post test is almost the same as the procedure of the pre test, the difference is the post-test is done after giving all treatments. This is done to find out whether the results of the treatment are successful or not. The items and topic of the post test are the same as the items and topic given to the pretest.

3.3.2. The Validity of Test

Checking the validity of the item is needed to check the item is valid or not. This validity is done before the pre test and post test is given to students. According to Winterstein (2008) that the instrument can be said to be valid if the item is in accordance with the purpose of the research and proven if the item must be measured what is measured. One of the validities is the content validity, where the content validity itself aims to measure and know the significance of the variables. And the content validity is not always in the form of numbers but can be determined through the objectives in the curriculum, syllabus, and textbook guidelines.

In this study, the validity of the test was based on core competencies and basic competencies of MA Masyhudiyah Gresik. Moreover the researcher also gave a test based on the syllabus and the curriculum used was the K13 curriculum. Here is the detail :

No.	Core Competence	Standard Competence	Test	
			Pre-test	Post-test
1	4. Mengolah, menalar, dan menyaji dalam ranah konkret dan ranah abstrak terkait dengan pengembangan dari yang	4.4 Teks *Deskriptif* 4.4.2 menyusun teks *deskriptif* lisan dan tulis, pendek dan sederhana terkait tempat wisata, dan bangunan bersejarah	Please write a descriptive text based on the criteria below : 1. The Descriptive text must consist at least 150 words 2. The Descriptive text must pay attention to	Please write a descriptive text based on the criteria below : 1. The Descriptive text must consist at least 150 words 2. The Descriptive text must pay attention

	dipelajarinya di sekolah secara mandiri, dan mampu menggunakan metoda sesuai kaidah keilmuan	terkenal, dengan memperhatikan tujuan, struktur teks, dan unsur kebahasaan, secara benar dan sesuai dengan konteks.	Descriptive generic structure: - *Identification* : Identifies phenomenon place or thing that will be described - *Description* : Describes about parts, qualities and characteristics. 3. Choose one of topics and sub-topics below : <u>Tourism place</u> : Wisata Bahari Lamongan,Mount Bromo, Kuta Beach <u>History Place</u> : Giri Kedaton, Sepuluh Nopember Museum, Monas (National Monument).	to Descriptive generic structure: - *Identification* : Identifies phenomenon place or thing that will be described - *Description* : Describes about parts, qualities and characteristics. 3. Choose one of topics and sub-topics below : <u>Tourism place</u> : Surabaya Zoo, Maharani Cave, Coban Rondo Waterfall <u>History Place</u> : The tomb of Sunan Giri, Surabaya Submarine Monument, Prambanan Temple.

Table (3) Spesification in Pre-test and Post-test Achievement on Writing Descriptive Text of Tenth Grade at MA Masyhudiyah

3.3.3. Reliability of Test

Reliability refers to when the rubric is consistent and trusty in measurement (Brown, 2001) To measure the reliability in writing, the researcher used rubrics adopted from Jacob (1981:90) and all aspects in scoring rubric from Jacob had covered some aspects of students writing skill.

3.3.4. The Procedures of Collecting Data

There are several procedures for collecting data applied by the researcher;

1. The first step the researcher asked for permission to the headmaster of MA Masyhudiyah where the study will be conducted.
2. The researcher asks about the class, such as the number of classes and the number of students with English teachers who taught English in the class that become the class of research.
3. Then the researcher chooses the subject that will be divided the subjects into 2 groups, namely the experimental group and the control group, for Experimental group will be taught using Online Collaborative Writing through Edmodo, while the control group will be taught using only collaborative writing strategy.
4. The researcher prepares to give pre-test for two groups and result from pre-test will be the first data in this research
5. The researcher gave treatment to the experimental group which requires 6 meetings consist of (2 meetings for test and 4 meetings for treatments).
6. The researcher will give a post-test to find out whether the treatment has a positive effect on students' writing or not.
7. And the last, the researcher will analyze the data from pre-test and post-test using SPSS 16.0 program

No	Meetings	Topic	Total of Students	
			Experiment	Control
1.	1st Meeting	Pre Test	56	
2	2nd Meeting	Descriptive Text "Tourism Object"	28	28
3	3rd Meeting	Descriptive Text "Tourism Object"	28	28
4.	4th Meeting	Descriptive Text "Historical Places"	28	28

5.	5th Meeting	Descriptive Text "Historical Places"	28	28
6.	6th Meeting	Post Test	28	28

Table (4) The schedule of meeting

3.3.5. Scoring Guide

In this study using scoring technique based on the standard criteria in writing compositions. According to Hughes (2003:100-102) and Starkey (2004:14) there are five aspects of writing that is very important to measure students writing and the aspects are : Organization, content, grammar/language use, vocabulary and mechanics. The researcher adopt the assessment rubric from Jacob (1981:90). It can be seen in the following table :

Aspect	Level	Score	Criteria
Content 30%	Excellent – Very Good	30-27	Relevant to the topic, give the detail information, and match the purpose of the text.
	Good – Average	26-22	Mostly relevant to the topic, lacks of detail.
	Fair – Poor	21-17	Inaedaquate development of the topic, almost match to the purpose of the text.
	Very poor	16-13	Does not relate to the topic and does not match the purpose.

Organization 20%	Excellent – Very Good	20-18	Fluent expression, ideas clearly stated, well organized, logical sequencing cohesive.
	Good – Average	17-14	Loosely organized, limited support, logical but incomplete sequencing.
	Fair – Poor	13-10	Non-fluent, ideas confused or unconnected, lacks logical development and sequencing.
	Very poor	9-7	Does not communicate, no organization, not enough to evaluate.
Vocabulary 20%	Excellent – Very Good	20-18	Use effective word/word choice/word usage, word form mastery.
	Good – Average	17-14	Occasional errors of word form, choice/word usage but meaning not obscured.
	Fair – Poor	13-10	Frequent errors of word form, choice, usage and meaning obscured/confused.
	Very poor	9-7	Essentially translation, little knowledge of English, not enough to evaluate.
Language Use 25%	Excellent – Very Good	25-22	Few errors of agreement, tense, and word order.
	Good – Average	21-18	Several errors of agreement, tense, and word order.

	Fair – Poor	17-11	Frequent errors and meaning obscured.
	Very poor	10-5	Dominated by error, does not communicate, not enough to evaluate.
Mechanics 5%	Excellent – Very Good	5	Exemplary mechanism, may have minor errors in punctuation, capitalization, and spelling, need little or no editing.
	Good – Average	4	Adequate mechanism, have some errors in punctuation, capitalization, and spelling, need editing but does not impede readability.
	Fair – Poor	3	Limited mechanism, consistent errors of punctuation, capitalization, and spelling, impede readability.
	Very poor	2	Inadequate mechanism, serious and consistent errors in punctuation, capitalization, and spelling impedes understanding/communication.

Score Conversion :

Content + Organization + Vocabulary + Language Use + Mechanics =

..... + ... + ... + ... + ... = ...

3.4. Data Analysis

After the process of collecting data the researcher must analyze the data. To obtain the data, the researcher analyzes the data with quantitative data and using the SPSS 16.0 program. The researcher analyzed quantitative data to determine the tendency of students' writing scores. The instruments to be analyzed are the pre-test and post-test. The researcher will test an independent sample t-test to analyze the data to find out the results of the first and second hypotheses. Through data analysis the researcher found significant differences between the experimental group by applying Online Collaborative Writing through Edmodo and the control group using Collaborative Writing.

3.4.1. Normality Distribution Test

The researcher used the normality distribution test because she wanted to know the data between the experimental group and control group towards writing skills in a normal distribution or not. In analyzing the researcher used Kolmogorov-Smirnov test in SPSS 16.0 program. The procedure for analyzing a normal distribution is select Analysis, select Descriptive Statistics, then Browse, enter the variable score into the Dependency List, group variables to the Factors List, click Plots, and give the Normality plot with the test, click Continue, then click OK.

3.4.2. Homogeneity Test of Variance

The homogeneity test is used to determine whether the two groups has the same variant or not. The researcher also used homogeneity tests to find out the differences between the experimental group and the control group for students' writing skills. In homogeneity tests the researchers used Levene's test of homogeneity test in SPSS 15.0 version. The test of Levene's test defined as follow:

$$W = \frac{(N-k\ \sum_{i}^{k}=1\ N_1\ (Z_I-\ Z)^2}{(k-1)\sum_{I}^{K}=1\ \sum_{J}^{N_I}-1\ (Z_{IJ}-\ Z_1)^2}$$

The symbols define as follow :

W = The result of the test

K = The number of different groups which the sample belong

N = The total number of sample in all groups

N_I = The number of sample in i group

Y_{IJ} = The value of the sample from the J^{th} case from i^{th} group

The significance of W is tested against F (α, K-1, N-K) where F is the quintile of the test distribution, with K-1 and N-K degrees of freedom, and α is the level of significance chosen (usually 0.05 or 0.01). To obtain the data researcher tested using SPSS. The first step is to enter the pre test scores of the two groups using the data display, the second select memu analysis, select comparison means then click independent sample t-test. The last procedure is to interpret the output of the homogeneity test, the researcher sees (sig.) In the Levene test column for knowing whether the quality of the variance in the score group is homogeneity or not.. If the sig > α (0,05), two population of variance were homogeneous or equal but if sig. < α (0,05) two populations of variance were not homogeneous or not equal..

3.4.3. Hypothesis Testing

Independents T-test was used to find out the differences between the use of Collaborative Writing through Edmodo on students' writing skills. The steps of t-test calculation are: First, the hypothesis test of the research and the setting alpha (alpha) level at 0.05 (two-tailed test) The hypothesis could be formulated as follow:

H_0 : There is no significant effect of using Online Collaborative Writing through Edmodo on students writing skill between Experimental and control group

H^1 : There is significant effect of of using Online Collaborative Writing through Edmodo on students writing skill between Experimental and control group

The second step is to find the t-test using the Independent sample t-test and compare the probability with the level of significance to test the hypothesis. After all scores are calculated using SPSS, then to see the output of the Independent-Sample T-test and interpret the output, if sig, (2-tailed) > α (0,05),it means that the researcher should accept the H0, but if the sig. (2-tailed) < α (0,05), the researcher can be rejected the H0, it means that H1 is accepted

To find out the comparison of two means between the pre test score and the post test score of the two experimental and control groups by calculating the T-test. In analyzing the data the researcher used an independent t-test. And the formula for the t-test is:

$$t = \frac{(x_1 - x_2) - (\mu_1 - \mu_2)}{S_{X1} - X_2}$$

Where :

t : t-test

x_1 : Average group 1

x_2 : Average group 2

S : Standard error of two groups

$\mu_1 - \mu_2$: Always a default 0

Pooled variance : the variance average of the two samples, which may be a large sample for more weight:

$$SX_1\text{-}X_2 = \sqrt{\frac{S^2 \quad pooled}{n_1} + \frac{S^2 \quad pooled}{n_2}}$$

Where :

Sx_1-x_2 : Standard error of two groups

S^2 pooled : Variants of two groups

n_1 : Number of sample group 1

n_2 : Number of sample group 2

The steps in calculating the t-test are enter the post test data in the SPSS program between the experimental group and the control group then click analysis then Compare means, after that click the independent sample t-test and enter the score variable into the test variable column, and group variable, and click define group, select group 1 (experimental group) and group 2 (control group), then click OK.