CHAPTER III

RESEARCH METHODOLOGY

In this chapter, the researcher describes the research method. It consists of research method, research design, population and sample, variable, research instrument, validity and reliability testing, normality testing, data collection method, and data analysis.

A. Research Design

Research designs are plans and procedures for research that span the decisions from broad assumption to detailed method of data collection and analysis. (Creswell: 2009) This research used quantitative approach and the design employed was experimental research. Because experiments are controlled, they are the best of the quantitative designs to use to establish probable cause and effect.

The present research used quasi experimental as the research design. The quasi experimental design was used because this method does not require random sampling (Jackson, 2008:318). This research method provide the students with pre test, treatment, and post test to find out the effect of talking chips on students writing achievement. Since there was no random sampling, the sample in this research was considered as nonequivalent sample which consisted of experimental and control group (Jackson, 2008:323).

The researcher took two groups or two classes and used pretest and posttest to see the result of the treatment. This research method provided the students with pre test, treatment, and post test to find out the effect of talking chips on students writing achievement. Since there was no random sampling, the sample in this research was considered as nonequivalent sample which consisted of experimental and control group (Jackson, 2008:323). The design of this research can be seen at the table below:

Table 3.1. Two Groups Pretest-Posttest Design

Group		Pre test	Independent variable	Post test
(11 MIA UI)	E	Y1	X	Y2
(11 MIA U2)	C	Y1	-	Y2

Y1 was pretest and it was given before the teaching or treatment was applied. The purpose of the pretest was to measure the students' writing ability before they got treatment X. X was considered as the treatment, namely the teaching by using media of talking chips. Y2 was known as Posttest. Which the researcher conducted after the treatment in experimental group to know the achievement of the students or the subject in the experimental and also given to control group. Using this form of research, the influence of experimental treatment could be seen by analyzing or comparing the results of the pretest and posttest.

In addition, two classes were taken as the sample classes: those labeled as the experimental group and control group. The first group

(11 MIA U1) as the experimental group was given a pre-test (X1). Treated by using talking chips (T), and then provided a post-test (X2). The second group (11 MIA U2) as the control group was given a pre-test (X1) and then provided a post-test (X2).

In this study, the researcher measures the effectiveness of talking chips in teaching writing by experimental research. The impact was assessed by providing a specific treatment. The effectiveness would be identified after knowing the significant difference between the students who were taught before using talking chips and after using talking chips.

B. Population and Sample

1. Population

The population of the study was the classes of the eleventh year students of MAN 1 Tulungagung in the school year of 2017/2018. Arikunto (1998: 115) states that the whole subject research was called population of research. A population was a set (or collection) of all elements possessing one or more attribute of interest. For a research that requires a large population for the source of the data, the first step was to define the target population. Target population in educational research usually was 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 target population of this study was all second grade students of MAN 1

Tulungagung which consist of nine classes which the total of all second grade students are 339.

2. Sample

Sampling was a way that the researcher selects the number of individuals as a sample which represents the population. According Charles (1995:96) a sample was a small group of people selected to represent the much larger entire population from which it was drawn. So, sample was a group of unit selected from large group or population. In this study the reseacher took 55 samples. The reseacher took two classes that are 11 MIA U 1 that consist 27 students as experimental group and 11 MIA U 2 that consist 28 students as control group. The reason of the reseacher took both of that classes because of the recommendation from English teacher in MAN 1 Tulungagung.

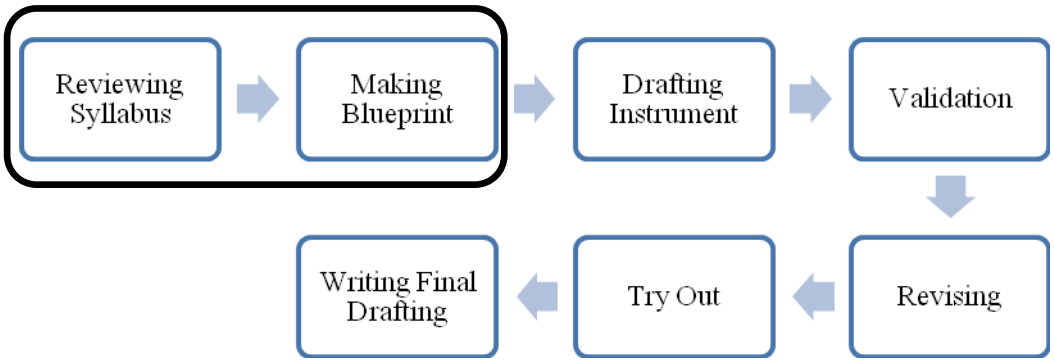
The sample was taken in term of purposive sampling technique. Purposive sampling was a research sample done by taking some subjects based on a certain purpose by considering limited time, energy and cost so that a researcher does not have to take a great number of sample that was out of the range (Sugiyono, 2009:133-136). According to Ary *et al*, (2010:156) "purposive sampling also referred to as judgment sampling. Sample elements judged to be typical, or representative, are chosen from the population", so to get the result of representative of the research, the

researcher only chose those who were knowledgeable. It means that the sample has knowledge about writing especially in analytical exposition.

C. Research Instrument

Arikunto (1998: 130) states that test was question which was used to measure the skills, knowledge, intelligence, achievement aptitude, and another capability of someone or a group of people. The instrument used in this research was writing test. Process of instrumentation was done by the researcher as 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. The syllabus can be seen in appendix 1.

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. The blueprint can be seen appendix 2.

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. The instrument can be seen in appendix 3.

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. The suggestion from expert on the indicators of blueprint and on the instruction of instrument which must be understandable. The expert validation can be seen in appendix 4.

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. The score of try out can be seen in appendix 5.

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.

Writing test as the instrument to collect data and the result was used to describe the significance and ddifferences writing skill of learners who were taught by using talking chips and who were taught without talking chips. There were two test which used by the reseracher: a pre-test (before treatment) and post-test (after treatment)

The researcher did pre-test on January 6th 2018. The purpose was to know the students ability in writing analytical exposition and to know how many ideas that they can be wrote, before they given the treatment. The procedure of pre-test was the same with the try out in which the student in the experimental group and control group had to write an analytical exposition text with the topic similar to the try out test. The time allocation for each group has same time, it was 60 minutes.

The post-test was carried out after providing some treatments by using talking chips in the learning process,. it was hold on January 20th 2018. The post-test was done to measure the students' achievement in writing analytical exposition text after they were taught by using talking chips. About time allocation of post-test same with pre-test, it was 60 minutes. But the difference was on the topic which used. In assessing students' writing skill the researcher used scoring rubric adopted from Jacob et al (1981) see in Appendix 6.

D. Validity and Reliability of Instrument Result

The try out item should be tested to measure its validity and reliability before conducting pre-test and post-test (Brown, 1988). To know whether the test was good or not, there are two important characteristics that should to be considered:

1. Validity

The validity of a test concerns whether it was measuring what we think and say it was measuring (Allison, 2002:85). In other word, test validity defined as the extented to which instrument measures, it was supposed to measure and nothing else. An instrument or a test can be called valid if it at least consists of the content and construct validity. So in this study, the researcher used content validity, construct validity and face validity to know the validity of test.

a. Content Validity

Content validity means there was correspondence between curriculum objectives and the objectives being tested. It means that test said to have content validity if its objectives are same with the curriculum objectives. The researcher developed the test by referring to the syllabus that contained standard competence and basic competence. In this case, the researcher also checked the curriculum set to know what students must be able to do in certain level,

especially in second grade of senior high school, and the researcher found that in the first semester they have to able write an analytical exposition. the table of specification of the test can be seein in the following table:

Table 3.2 Table of Specification the Test

Material	**Standard competence**	**Form of Test**
Analytical exposition text	Psychomotor of Analytical Exposition Text in Writing	
Basic competence	**Indicators**	
1.1 Arrange analytical exposition text related topical issue with pay attention on social function, generic structure, and language features, corectly and appropriate with context.	1.1 Students are able to identify types of text 1.2 Students are able to understand the clear topic 1.3 Students are able to make peta concept about topic is chosen 1.4 Students are able to make out line analytical text based on brainstroming 1.5 Students are able to sketch out the generic structure 1.6 Students are able to construct the text 1.7 Students are able to mend the text 1.8 Students are able to adapt certain lesson or supported information from the text 1.9 Students are able to make a short essay about analytical exposition text	1. Write an analytical exposition text about global warming (at least 200 words and 3 argument paragraphs)! 2. The text must consist of the generic structure a. Thesis b. Argument paragraph c. Reiteration 3. Use language features of analytical exposition a. Use link arguments, such as first, secondly, etc b. Use casual conjunction, such as from fact above in addition, futhermore, however, and therefore

b. Construct validity

Construct validity refers to the meaningfulness and appropriateness of the interpretations that we make on the basis of test score (Bachman and Palmer. 1996:21). The construct validity was test which capable for measuring certain specific characteristic in accordance with a theory of language behavior and learning (Heaton, 1975: 159). By using construct validition it refers to the process of determining whether a test was actually measuring what it was intended to measure (Weigle,2009:49). For writing test, it should measure the knowledge of sub abilities of writing such as content, organization, vocabulary, language use and mechanic. The sub-abilities only can be measured if the form of test in the form of written test. Therefore, it can be said that these test has construct validity because the product of test was in the written form.

c. Face validity

Face validity becomes one of the validity types that can be established. Validity was measurement that showed the validity level of the instrument (Arikunto; 1998: 160). Face validity was hardly a scientific concept that very

important**.** A test which does not have face validity may not be accepted by test takers, teachers, education, authorities or employers**.** In this test, there were some aspects that should be considered from this test to make a good test based on the expert validation.

2. Reliability

A good test must be valid and reliable. Reliability means the stability of test scores; a test cannot measure anything well unless it measures consistently (Harris, 1969:14). One of the ways to achieve the reliability in a test was that a researcher may apply *rater reliability*, There are two kinds of rater reliability; the first was *inter- rater reliability* in which two raters or scorers do the scoring, while the second was known as *intra-rater reliability* in which a rater or a scorer does the scoring twice.

In this test the researchers used inter rater reliability where the researcher involved two raters in scoring the students' writing ability. Rater reliability concerns to the stability or consistency with which test performances are evaluated. The rater here was a seventh semester student of English Students Department at IAIN Tulungagung. The researcher decided to chose the rater, because she has the ability to understand each point in the scoring rubric. After getting the score of try-out from both of the raters, the researcher callculated the score of pre-test

using SPSS 16.00 program to know the reliability coefficient. The result of reliability testing can be seen from the table:

Table. 3.3 Reliability of Try-out

		RATER1	RATER2
RATER1	Pearson Correlation	1	.942**
	Sig. (2-tailed)		.000
	N	10	10
RATER2	Pearson Correlation	.942**	1
	Sig. (2-tailed)	.000	
	N	10	10

**. Correlation is significant at the 0.01 level (2-tailed).

From the table above, it showed that the result of reability test for the questions by using *pearson product moment* in SPSS 16.00 was 0.942. It means that the instrument was reliable, because the isntrument called reliable if the significant close to 1.

E. Normality and Homogeneity Testing

1. Normality Test

The purpose of normality test was to know whether the data distributed normally or not. There are two ways to test the normality in a research, those are using *Kolmogorv Smirnov test* and *Shapiro Wilk test*. In this research, the researcher used *Shapiro Wilk test*, according Garson (2010:21) states *Shapiro Wilk* is recommended for small and medium samples up to n = 2000 and samples of this research are 55, it means less

than 2000 (55<2000). The normality test which was used by the researcher was based on the kind of experiment which was done. If the research test which determine the specific qualifications about the population parameter which be a sample, the analysis that has to be used was parametric statistic analysis method. Whereas, if the research without determine the specific qualification about the population parameter which be a sample, so the analysis use parametric statistic analysis method. The considerations of testing normality are:

1. The data has normal distribution, if the significance > 0,05
2. The data doesn't have normal distribution, if significance < 0,05

After get the score of pre-test and post-test the reseracher callculated the score using SPSS 16.00 program. And below was the result of normality pre-test and post-test:

Table. 3.4 Tests of Normality Pre-test

		Shapiro-Wilk		
	CLASS	Statistic	Df	Sig.
Result of test	MIA U1 (E)	.959	27	.342
	MIA U2 (C)	.941	28	.116

In the table above, it was found out said that the significance value of the pre-test in the experimental group was 0.342 and in the control group was 0.116. Both of then were above 0.05. This means that the distribution of data in both classes was normal.

Table. 3.5 Tests of Normality Post-test

		Shapiro-Wilk		
	CLASS	Statistic	df	Sig.
Result of test	MIA U1 (E)	.948	27	.189
	MIA U2 (C)	.961	28	.362

If in the normality post-test in the experimental group was 0.189 and in the control was 0.362, same with in normality pre-test all of the significance in the post-test > 0,05. So it can be concluded that the research data in the post-test has normal distributed. However different with pre-test, in the post-test significance of control group was higher than experimental group.

2. Homogeneity Test

Arikunto (2010:98) states "Homogeneity was a measurement which can be used to determine data variation. There were so many ways which can be used to measure the homogeneity of a sample, such as by using explore analysis test and analysis test one way ANOVA. In this case the researcher used one way ANOVA, especially levene, because in this research used two variables. The considerations of testing homogenity are:

1. The data are homogeny, if the significance > 0,05
2. The data are not homogeny, if significance < 0,05

After get the score of pre-test and post-test the reseracher callculated the score using SPSS 16.00 program. And below was the result of homogenity pre-test and post-test:

Table. 3.6 Test of Homogeneity of Pre-test Variances

Pre-test Result

Levene Statistic	df1	df2	Sig.
.497	1	53	.484

Based on the result of testing homogeneity above, the significant of group on writing analytical exposition using learning process talking chips was 0.484 on pre-test. It means that the significant of group higher than significant level 0.05. So homogeneity of in pre-test variances, Ho was not rejected which it said that the data were homogeny.

Table. 3.7 Test of Homogeneity of Post-test Variances

Post-test Result

Levene Statistic	df1	df2	Sig.
2.289	1	53	.136

Based on tables above, it showed that the significant of group on writing analytical exposition using learning process talking chips was 0,136 on post-test. It means that the significant of group more than 0.05. So, it can be conclude that Ho was not rejected and the data of group on

writing analytical exposition using learning process talking chips in post-test has the same variant.

F. Data Collecting Method

In collecting data instrument was needed to obtain the research data. In this research, the researcher administered tests. Administering a test or testing was one of the ways in collecting data from the subjects, especially when the main purpose was to obtained the score of the subjects. Test was a method of measuring a persons' ability knowledge, or performance in a given domain (Ary, Jacobs, & Sorensen, 2010:316). To collect the data, the researcher applied pre-test to know measure students' ability in writing analytical exposition prior to receiving the treatment. In the pre-test the researcher administered test in which the time allocation of the test was 60 minutes. The pretest hold on January 6th, 2018 in experimental class (11 MIA U 1) and class control (11 MIA U 2).

After administering pre-test, the researcher calculate the pre-test score to know the students' achievement before receiving treatments. And then the researcher provided treatment by teaching using talking chips in the experimental group and without using talking chips in the control group. In the last meeting the researcher administered post-test after given third treatments or teaching using talking chips in the experimental group. The post test was administered with main aim to know if there was any difference of the students' achievement in writing analytical exposition

after receiving the treatment. In the post-test, the researcher also written test with time allocation was 60 minutes. The post test was held on January 20th, 2018 in experimental group (11 MIA U 1) and control group (11 MIA U 2).

G. Procedure of The Research

Treatment was conducted in the experimental group after administering the pre-test. In here treatment did third. The chips used in this treatment was the color paper with button shape and each botton divide into four like pizza. So the students had four piece of color papers which it means that each student had four oppotunities to speak up or give opinion and each student in one group has different color , if the students wanted to give opinion they have to put the piece of chips on the center of table.

The topic for writing was selected based on selection of English teacher. The suggestion of the teacher in order to minimize the unappropriate topics by the students. The researcher decided to choose topic about environtment on tests and treatments. The procedure of treatments was done by the researcher as bellow:

1. First treatment, hold on January 12th 2018. The topic in first treatment was impact of deforestation, if about the procedure of treatment as follow:

a. The researcher explained about the analytical exposition it such as explanation, purpose, generic structure and language use of analytical exposition text.
b. Next, The researcher explained about talking chips technique involves the explanation and the procedure.
c. Then, the students divided into 6 groups and each group consist of 4-5 students, after the students sat on their own group the researcher gave the guide line which consist of the topic and the steps what they have to do, outline and the chips.
d. After they got the chips, the researcher gave 40 minutes to students to discussion which each student had maximum 2 minutes every gave an opinion.
e. During discussion they have to wrote the points that given by their friends and wrote it in the outline.
f. After discussion time was up, the researcher asked the representative of each groups to present the result of discussion.
g. And then, the researcher gave 30 minutes to student made an analytical exposition test based on their outline.
h. In the last 10 minutes the researcher give evaluation about the some mistakes which the students did during the discussion using talking chips.

2. Second treatment, hold on January 13th 2018. The topic of writing was impact of air pollution, the treatment was done as follow:
    a. Before the researcher did the treatment, the researcher did evaluation about the mistakes in the text which the students have made in the first treatment.
    b. Then, the students were divided into 6 groups and each group consisted of 4-5 students. After the students sat on their own group, the researcher gave the guide line which consist of the topic and the steps what they had to do, outline and the chips.
    c. After they got the chips, the researcher gave 40 minutes to students to make discussion in which each student had maximum 2 minutes each to give an opinion.
    d. During the discussion they had to write the points given by their friends and wrote it in the outline.
    e. After discussion time was up, the researcher asked the representative of each groups to present the result of discussion.
    f. And then, the researcher gave 30 minutes to student made an analytical exposition test based on their outline.
    g. In the last 10 minutes the researcher gave reflection and suggestion during discussion.

3. The last treatment was done on 19th 2018. The topic chosen was the danger of plastic bags. If about the procedure and time allocation of treatment same with second treatment. But the difference only on topic which unfamiliar than topics in the first and second treatment.

H. Data Analysis

In this research, the technique of data analysis used quantitative data analysis. The researcher conducted test in the control group and in the experimental group before and after taught by using talking chips technique. And then, after all data were gathered**,** the researcher used the statistical calculation of T-test in SPSS 16.0 program. T-test was used in order to find out the differences of the score of students writing achievement after using talking chips. If the difference was significant, it means that using talking chips to teach writing analytical exposition text was effective.