CHAPTER III

RESEARCH METHOD

This chapter discuses research design, population, sampling and sample, description of treatment, research variable, research instrument, data collection method, and data analysis technique.

A. Research Design

Research is careful study on investigation, especially in order to discover new facts or information, such as scientific, historical research (Homby, 1995:996). It means that a study is done carefully and accurately on investigation of an event, problem or phenomenon about scientific to find out new information.

One of important things that should be considered in conducting research is research design. Research design in commonly defined as the way of thinking and doing preparation to complete and achieve the goal of research (Burn and Grove, 2005). Research method refers to the general strategy followed ingathering and analysis the data necessary for answering the question. In this study the research design used was quasi experimental with quantitative approach. This research was intended to investigate the effectiveness of flepped classroom on students' writing ability in narrative text of the eleventh grade student at SMPN 2 Sumbergempol.

In this study, the researcher useda Quasi-Experimentalas the design of the research to see the effectiveness of flipped classroom strategy on students'

writing ability. As stated by Mujis (2004:200), “quasi-experimental research is especially suited to looking at the effects of an educational invention, such as a school improvement program, a project to improve a specific element. The researcher determined to select two intacts group. The first group giventreatment, was called experimental group and the other group that was not given a treatment was called control group . The data were collected from pre-test and post-test in order to know whether the usage of Flipped Classroomeffective in improving students’writing ability. The table below shows the design of the research.

Table 3.1:

Quasi-experimental research design

Group	**Y1**	**X**	**Y2**
Experimental class (VIII D)	Pre-test	Flipped Classroom Treatment	Post-test
Control class (VIII E)	Pre-test	-	Post-test

Based on the Table 3.1, the procedures of using two groups pre-test post-test design were:

1. Administering a pre-test to both classes (VIII D and VIII E) to measure the score of writing of the students at second grade in SMPN 2 Sumbergempol.
2. Applying the experimental treatment for VIII D class to teach descriptive text by using Flipped Classroom and applying a conventional method for VIII E class second grade at SMPN 2 Sumbergempol.
3. Administering a post-test in both classess (VIII D and VIII E) to measure the score of writing ability of the students at second grade in SMPN 2 Sumbergempol.

Procedure of teaching descriptive text by using Flipped Classroom

1. Outside the classroom.

Researcher shared a video teaching about descriptive text explanation through the researcher whatsapp group that the researcher has been made. Students were able to download the video through their laptop or smartphone. Students watched the video at home or wherever place that the students comfort to study in. They can also study individually or peers. During watching the video, students took some notes from the video and wrote a problem that they faced when they learn from the video. Students gave some exercise through the video.

2. Inside the classroom

Teacher asked what they had learned from the video and corrected the answer that the student had to answer in the video with the class. Teacher asked them whether there was something that they did not understand by the video. Teacher gave students a descriptive text. Teacher divided the students into 4 groups

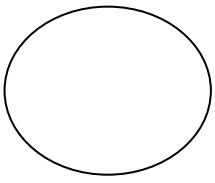
contain of 4 or 5 students. In group, students identified and explored the descriptive text of the paragraph to get the main idea from the first paragraph. Using their own words, students wrote important information from the text. This activity continued until the end of paragraph. Teacher and students discussed the content of the text. Teacher can point one of the groups to share their notes about the text. Teacher controlled and provided the right answer while checking the answer. Teacher evaluated the learning process.

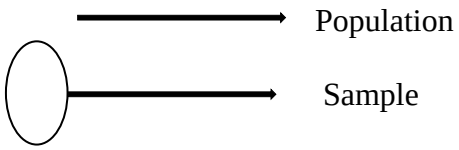
B. Population, Sampling, and Sample

1. Population

Population is generally a large collection of individuals or subjects that was the main focus of a scientific. It concluded of all individuals that have similar characteristics. Gay (2006) stated that population is a certain group of things (people, objects, events, etc) chosen by the researcher whose study on the research that can be generalized to the group that has a population at least one characteristic that distinguishes it from the other group. According to Scott and Johnston (2009: 29) population is the universe of people to which the study could be generalized, and a sample is the subset of people from the population who will participate in the current study.

The illustration of population and sample





The population of this research was students' in the second grade of Junior High School at SMPN 2 Sumbergempol which has around 450students'. The school has sevensecondgrade classes. They were VIII A, VIII B, VIII C, VIII D VIII E, VIII F, and VIII G, in academic years of 2019/2020 and each class was consist with different number of students'.

2. Sampling

Sampling is a technique to take sample from group of population. Sampling an important characteristic of inferential, and statistics is the process of going from the part to whole (Ary et al, 2010:148). In this study, the researcher did not use all populations to be sampled. Therefore, purposive sampling used to take samples.Purposive sampling technique is a type of non probability sampling where the researcher consciously selects subjects for addition in a study so as to make sure that the elements will have certain characteristics pertinent to the study. In purposive sampling, which also referred to as judgment sampling, sample elements judge to a typical or representative are chosen from the population (Ary, 2010:156). It was technique to determined sample with a particular consideration. Purposive sampling used based on a certain consideration and the main consideration was the chosen classess had homogeneous

writing ability. In other words, the students in those classess had average proficiency in writing.

3. Sample

According to Ary et al (2010:148) sample is the small group that is observed. Cresswell (2012 :142) state that "A sample is a subgroup of the target population". Fraenkel and Wallen (2006:92) also give explanation that sample is the group on which information is obtained.

Based on the description above, the researcher defined that sample was a small group taken from population with a certain media that was researched by researcher.

For the study was quasi experimental, the sample was choosen by applying purposive sampling. Applying this method, two classes were chosen by using a certain criterion in which the choosed classes must be normal or in average. Based on the criterion the sample of this research was the students' of VIII D as a control group and VIII E as a experimental group in which total of VIII D class was 31 students' and VIII E was 32 students'. So, the total sample was 63 students'.

Table 3.2:The Research Sample by Class

No.	Class	The Number of Students
1	VIII D	32
2	VIII E	31

The sample above was divided into two groups. The first group was class VIII D as the control group and the second group was class VIII E as the experimental group. The experimental group was given the Flipped Classroom in their writing ability. The researcher made lesson plans and some activities for every meeting based on curriculum. The control group was given the same materials but without using flipped classroom method in their writing ability.

Table 3.3:The Distribution of the Treatment

Group	Class	Treatment	Number of Students
Experimental	VIII E	flipped classroom	31
Control	VIII D	Conventional	32

C. Research Variable

A variable is a construct or a characteristic that can take on differentvalues or scores (Ary et al., 2010:37). There are two kinds of variable in this research. They are independent variable and dependent variable.

1. Independent Variable

Ary et al. (2010:266) state that the independent variable is manipulated (changed) by the experimenter. It means that the independent variable can give effect to dependent variable. The independent variable in this research is flipped classroomStrategy which is symbolized by "X".

2. Dependent Variable

According to Ary et al. (2010:266), the variable on which the effects of the changes are observed is called the dependent variable, which is observed but not manipulated by the experimenter. So, the dependent variable is an outcome from the effect of the independent variable. The dependent variable in this research is studentswriting descriptive text ability which is symbolized by "Y".

D. Research Instrument

Research instrument is tool of collecting data. Instrument is a tool used to measured natural phenomena or social will be observed (Sugiyono 2015:148). The instrument of this research is test. Arikunto (2006:127) states that test is a series, question, exercise or other means which used to measure the skill, knowledge, intelligent, ability or talent that have by individual or group. Thus a test is a method to gain the data by giving some questions to the

respondent. The test was developed from K13 and syllabus which was used by SMPN 2 SumbergempolTulungagung and seeing the standard competence. After knowing the standard competence, researcher developed some indicators that must be reached by the students. From those indicators, researcher developed the test that consists of two kind test; pretest and post test.

In this research, the researcher used test as an instrument. Test is one way to measure the students' ability. According to Djaali (2000, as cited in Ismawati, 2003: 82) test is a tool that is used to measure knowledge or object mastery in a set of content or certain material. The researcher gave a writing test to get the score on students' writing ability after being given a different treatment.

E. Validity and Reliability Testing

Validity and reliability testing are the important part since the test is used as an instrument to collect the data. The validity and reliability were used to ensure that the test was suitable to use.

1. Validity

The most complex criterion of an effective test and the most important principle of language testing is validity. According to Ary et al (2010: 225) validity is the most important consideration in developing and evaluating measuring instruments. Validitywas defined as the extent to which an instrument measured what it claimes to measure. The focus of recent views of validity is not on the instrument itself but on the interpretation and meaning of the scores derived from the instrument. In this research, the researcher used some validity testing as follows:

a. Content Validity

Content validity is a test where the test can measure a certain objectives that appropriate with the material or the content of learning that is given (Arikunto, 2006: 82). It means that the content of test must appropriate with the material that exist in the curriculum. Moreover, the instrument in this research fulfilled the requirement of having content validity since the test was designed based on the standard and basic competence in K13.

Table 3.4 Standard Competence and Basic Competence in K13 Curriculum

Standard Competence	Basic Competence
1.4 Responding the meaning and creating an oral and written text, by using text structure correctly, language element accurately, thanking and fluently.	4.7.2 Making a simple descriptive text about people, animals and things in oral and written that attention with the social function, text structure, and language element as right and based on the context.

Based on the matrix above, it can be seen that descriptive text was one of the text that must be mastered by the eleventh grades students of Junior High School in K13 curriculum. So, the content of the test in this study used descriptive text, since it was suitable for seventh grades.

b. Construct Validity

A test is said to have construct validity if every question in the test measures every thinking aspect (Arikunto, 2006: 83). Construct validity deals with the relationship between a test and a particular view of language and language learning. The word construct refers to any underlying ability which is hypothesized in a theory of language ability. So, this construct validity refers to the theory of language learning. Here, the researcher used construct validity in administering writing test and the technique of scoring students' writing ability based on four categories of writing descriptive text that adopted from the internet, they were: topic, proof of description, relevance of supporting

facts and details, and language feature. Then, the researcher modified the aspect of the scoring rubic.

Table 3.5 Scoring Rubric of Writing

Component of Writing	Score	Criteria
Content	4	Relevant to the topic and easy to understand
	3	Mostly relevant to topics, but lacks detail
	2	Relevant to the topic but not quite easy to understand
	1	Quite relevant to the topic butnot quite easy to understand
Organization	4	Most of the sentences are related to main idea
	3	Some sentences are related to the main idea
	2	Few sentences related to the main idea
	1	The sentences are unrelated to each other
	4	There is almost no error in the use of sentence

Language Use	3	There are a few errors in the use of sentence
	2	There are many errors in the use of sentence
	1	Almost all sentences contain errors
Vocabulary	4	Effective word choice, word form mastery, and many vocabulary variations
	3	Occasional errors of word form, few vocabulary variations, but meaning not obscured
	2	Limited range, frequent errors of word form, almost no vocabulary variations, meaning confused or obscured
	1	Litle knowledge of English vocabulary, word form, not enough to evaluate
Mechanic	4	Fewerrors of spelling, capitalization and punctuation
	3	Occasional errors of spelling, capitalization and punctuation
	2	Frequent errors of spelling,

		capitalization and punctuation
	1	Dominated by errors of spelling,capitalization and punctuation

(Adapted from Jacobs et al. (1981) in Weigle (2002:116))

Score: The number gottenx 100 =
The maximal score

Table 3.6 Criteria Students' Score

No.	Grade	Level	Range of Score
1.	A	Excellent	81-100
2.	B	Good	61-80
3.	C	Fair	41-60
4.	D	Poor	0-40

c. Face validity

Face validity is a term sometimes used in connection with a test's content. Face validity refers to the extent to which examinees believe the instrument is measuring what it is supposed to measure (Ary et al, 2010: 228). The test in this study was designed to measure students' writing ability in descriptive text. In this test, there were some aspects to be considered from this test to make a good test based on the face validity. They were:

1) The instruction was clear for the students, so the students were able to understand what they should to do in the test.

2) The students of eleventh grades were instructed to write a descriptive text. Thus, the researcher gave topics that were suitable with their level. In this test, the researcher used guided topic.

3) The consideration of time allocation was suitable. So, the students could finish their writing well. In this test, the researcher gave the time allotment about 40 minutes.

2. Reliability

Reliability is the stability of the test score. Muijs (2004:71) says reliability is a second element that determines the quality of measurement instruments. Ary et al (2010:236) defines reliability as the degree of consistency with which an instrument measures whatever it is measuring. Thus, it can be said that a reliable test is consistent and dependable.

To know how far the reliability of the instrument, the researcher made test to be tried out to students before giving pretest and posttest. In this research, the writer uses inter rater reliability where the result of the test was scored by two scorers or two raters to get reliability coefficient. Then, the two sets of scores gotten from the two raters are calculated to get the correlation coefficient. Finally, SPSS 16.0 for windows program is used to compute the reliability of instruments. Here the result of try out test

Table 3.7 and 3.8The Statistical Correlation of *Person Product Moment* from IBM SPSS Statistical 16.0

Table 3.7 Reliability of Pretest

Correlations

		rater1	rater2
rater1	Pearson Correlation	1	.854**
	Sig. (2-tailed)		.000
	N	36	36
rater2	Pearson Correlation	.854**	1
	Sig. (2-tailed)	.000	
	N	36	36

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

Table 3.8 Reliability of Posttest

Correlations

		rater1	rater2
rater1	Pearson Correlation	1	.821**
	Sig. (2-tailed)		.000
	N	36	36
rater2	Pearson Correlation	.821**	1
	Sig. (2-tailed)	.000	
	N	36	36

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

Table 3.7 shows that Pearson Correlation of both rater 1 and 2 were 0.854. Meanwhile, table 3.8 shows that Pearson Correlation of both rater 1 and 2 were 0.821. In this case, if the Pearson Correlation was closer to +1, it can be said has strong correlation. Based on the both of table above, the result is closer to +1, so the data has strong reliability. It can be concluded that it is reliable.

F. Normality and Homogeneity Testing

1. Normality

Normality test uses to know whether that the data is in normal distribution or not. The main reason of conducting normality testing in a research is to know that the population or data involved in the research is in normal distribution. The normality test can be found by using *One-Sample Kolmogorov-Smirnov* formula and computed using SPSS 16.0. The distribution of data is normal if Asymp.Sig> 0.05. But if Asymp.Sig< 005, the distribution of data is not normal.

2. Homogeneity

Homogeneity testing is conducted to know whether the sample data has a homogeneous variance or not. The computation of homogeneity testing by using *SPSS Statistics 16.00* is *Test of homogeneity of Variance* by the value of significance = 0.05. There is also certainty in taking decision or homogeneity testing, as follow : The value of significance is higher than 0.05, it means that the data of sample has same variance.

G. Data Collecting Method

To get the data, the researcher proceeded with test. According to Arikunto (2010:193) test is sequence of questions or practice which used to measure skill, intelligence knowledge, ability or potency of someone or a group. In this research the data collection method is administering test that

consist of pre test and post test. The procedure of administering test was clarified as follow:

1. Pre-test

   Pre-test refers to a measure or test given to the subject prior to the experimental treatment. This aims to know the basic competence and their earlier knowledge before they get the treatment in writing descriptive text. At the first meeting, the researcher gave pre-test to the students. It was done on Monday, August 18th 2019. The pre-test is writing in form of descriptive text with the theme "Favorite Thing" that decided by the researcher. It was conducted to know the students' score in writing.

2. Treatment

   The treatment was conducted after the administration of the pretest. The treatment consists of 4 meetings. The purpose of treatment is to help students' in writing descriptive text. The treatment was taught by using Flipped Classroom Strategy to the students'.

3. Post-test

   The post test is given to the students after conducting the treatment of using Flipped Classroom to increase students' reading comprehension. Similarly to pre test the post test also writing in form of descriptive text with the theme "Favorite Thing" that decided by the researcher. It was conducted to know the students' score in writing.

H. Data Analysis

Data analysis is the way data analyzed by the researcher. The reseacrcher divided the test result into two groups, they were the result from the experimental group and the test result of the control group. Data obtained from the posttest from both of Experiment class and Control class would be analyzed statistically using *Independent-Sample T- Test* through SPSS 16.0 for windows. The researcher used t-test to know the significant value was higher or smaller than 0,05. The technique of data analysis used by the researcher belonged to quantitative data anaysis.

I. Hypothesis Testing

The hypothesis of this study is as follows:

1. If the significant value is smaller than significance level (0.05), the alternative hypothesis (H_a) is accepted and the Null Hypothesis (H_o) is rejected. It means that there is no different score between use Flipped Classroom and do not use Flipped Classroom students' achievement in writing.
2. If the significance value is bigger than significance level (0.05), null hypothesis (H_o) is accepted and the alternative hypothesis (H_a) is rejected. It means that there is different score between use Flipped Classroom and do not use Flipped Classroom students' achievement in writing.