

CHAPTER III

RESEARCH METHOD

In this chapter describes research method. It discusses the method used in conducting the research. It covers research design, variable of the research, population, sample, and sampling, research instrument, validity and reliability testing, normality and homogeneity testing, data collecting method, and data analysis

A. Research Design

This study was quantitative research. Quantitative study has classified in two kinds: experimental and non experimental. According to Ary, Lucy, and Chris (2010:26), experimental research is a study of the effect of the systematic manipulation of one variable(s) on another variable. The manipulated variable is called independent variable. It means that experimental research is a research design that is manipulated how group of participant are treated and measured and how the treatment gives an effect of that variable. The researcher would give the treatment to know the effectiveness of independent variable. The researcher would compare two sessions exam score. If the final score or after giving a treatment higher than before giving a treatment. It can be called that the strategy was effective. Besides, non experimental is a study which identify the variables and find out the relationship among them and does not manipulate the variables.

In this study the researcher used experimental research because the purpose of this study is to know the effective of one variable to another

variable. Experimental design has classified into three kinds: pre-experimental, quasi-experimental and true-experimental. The pre-experimental research design was used in this research. Pre-experimental is a research design which has no control of extraneous variables. In the one group pre-test and post-test dependent variables. In the one group pre-test and post-test design, a single group measured or observed not only after being exposed to a treatment concisely but also before. Pre-experimental involves three steps: administering a pretest measuring the depedent variable, applying the experimental treatment X to the subjects, and administering a post-test again measuring the dependent variable. The result of treatment is comparing the pre-test and post-test scores. The pre-test and post-test are given to get the scores of students before and after being taught by using Generating Interaction between Schemata and Text (GIST) strategy. Then, both scores were computed by using t-test to know if there is significant influence of teaching reading hortatory exposition text using Generating Interaction between Schemata and Text (GIST) strategy. The design of this research can be seen at the table below:

Table 3.1 Design 1: One group pre-test post-test design

Pretest	Independent	Posttest
Y ₁	X	Y ₂

Explanation :

X : GIST strategy based on reading treatment

Y₁ : Students' achievement on reading comprehension before taught by using
GIST Strategy based on reading

Y_2 : Students' achievement on reading comprehension after taught by using GIST Strategy based on reading

The procedures of experimental research used one group pre-test post-test design:

1. Administering a pre-test before applying the strategy with a purpose of measuring reading achievement of eleventh grade of MAN Tulungagung 1
2. Administering the experimental treatment teaching reading by using GIST strategy to the subjects (eleventh grade of MAN Tulungagung 1)
3. Administering a post-test after applying the strategy with a purpose of measuring reading achievement of eleventh grade of MAN Tulungagung 1

The result of treatment by comparing the pre-test and post-test scores to know the effectiveness of GIST strategy on students' reading comprehension at second grade of MAN Tulungagung.

B. Variable of The Research

Variable is the characteristics of something investigated of a research which can be measured and observed from one individual to another from time to time. Variable in a study is divided into independent variable and dependent variable.

1. Independent Variable (X)

Independent variable is the one that influences or affects the dependent variable through treatment. According to Cresswell (2012:116), independent variable is an attribute or characteristic that influences an outcome through the intervening variable. In this research, independent variable is the use of

Generating Interaction Between Schemata and Text (GIST) strategy on reading hortatory exposition text. This strategy was developed to help students learn to write organized and concise summaries of their reading. In this strategy, the students work collaboratively to decide upon the important information included in a specified selection of text and use it to write a summary statement in 15 words or less. Then, they make summarize from the words which have been listed. It can be called ‘the gist’ words. Here is the description of treatment and the application of it:

After the researcher conducts the pre – test and gains the data, researcher gives the treatment by using GIST (Generating Interaction Between Schemata and Text). The researcher conducts treatment for three times with the different topics. In the first treatment which conducts on Friday, 22nd February 2019 in the class XI MIA U2. The topic of the first treatment is “ Watch Your Kids While Watching TV“. In the first strategy, the students read one paragraph by one paragraph until they read whole passage. Then, they identify the important infomations or keywords and list in the GIST work-sheet. Next, they make summary by using the keywords which have been listed in the GIST work-sheet. Students will understand easily when they are able to make a summary by using their own sentence.

In the second treatment, researcher conducts on Friday, 8th March 2019 in the class XI MIA U2. The topic of the second treatment is “ Tourism Benefit on Local People “. The strategy has been same as the first treatment but it has different topic. In the last treatment, researcher conducts on

Friday, 15th March 2019 in the class XI MIA U2. The topic of the last treatment is “More Dust Bins is Needed”. The strategy has been same as the first and second treatment. After the researcher guide the students in using GIST strategy. The researcher gives the exercises. Each text consist of five questions. So, after the students do the reading activity by using GIST strategy, then they answer the questions. To know the students’ comprehend about the text. After they had done those treatments, they was doing the exercise in each treatment. The exercise consist of five questions in multiple choice form.

2. Dependent Variable (Y)

Dependent variable is the one that influenced or affected by the independent variable. According to Cresswell (2012:115). Dependent variable is an attribute or characteristics that is dependent on or influenced by the independent variable. Dependent variables can be measured using continous scores. In this research, dependent variable is the reading comprehension on hortatory exposition text.

C. Population, Sample and Sampling

1. Population

Population is the whole of subject as the target of study. According to Cresswell (2012:142), population is a group of individuals who have the same characteristics. The population of this study was the classes of the eleventh year students of MAN Tulungagung 1. Target population is a group with some common defining characteristic that the researcher can identify. The target

population of this study was all second grade students of MAN Tulungagung 1 which consist of twelve classes with the total of all students in second grade are 368 students.

2. Sample

Sample is a part of population that being observed and measured. Cresswell (2012:142), sample is a subgroup of the target population that the researcher plans to study for generalizing about the target population. The sample in this research is the students in eleventh MIA U2 which consist of 30 students. In fact, the researcher only use a class because of the teacher who teaches in this school only teaches two classes at the second grade. They are XI MIA U1 and XI MIA U2. Alike with her magister thesis, she also conducts her research at the second grade. So, she take XI MIA U1 class as her magister thesis research and the one class namely XI MIA U2 has been given to me as my research for experimental class one group pre-test and post-test.

3. Sampling

Sampling is the way of taking sample. Fraenkel and Wallen (2006:107), sampling is the process of selecting the individuals who will participate in this research. The purpose of sampling is to obtain the information about a population. In this research, the researcher chooses the students by using purposive sampling. Purposive sampling is a type of non-probability sampling where the researcher consciously selects particulars element of subject based on a certain purpose by considering limited time, energy and cost. According to Ary *et al* (2010:156) “purposive sampling also

referred to as judgement sampling, sample elements judged to be typical, or representative are chosen from the population". So, it means to get a more specific data sample should has a good qualification. In the class XI MIA U2 has this criterion. Besides, the teacher gave me a suggestion to choose this class because the time to conduct the research is limited and this class more cooperative than others. Also, the students are easily directed. Then, the characteristic of students is homogeneous in reading, not too good and not too bad in one side in English. It has been proved by their scores which recorded by the teacher.

D. Research Instrument

Instrument is a tools for collecting the data. According to Fraenkel and Wallen (2012:111), instrument is a devise such as: pencil and paper-test or a questionnaire that the researcher uses to collect the data. The instrument of this research was reading comprehension test. Multiple choice questions were used in this research as a tool for testing in order to know student's reading comprehension on hortatory exposition text. Multiple choice has been used in the most language examination. According to Brown, the advantages of multiple choice are easy to administer and score. Certainly, general aspects of many reading tests may be suspect, for instance, does the usual brief extract for reading comprehension. The extract also should be related to its level of difficulty. There were some specifications commonly used in measuring reading comprehension introduced by Brown: the main idea, expression/ idiom/phrases in content, inference, grammatical feature, detail,

supporting idea, vocabulary in content. It has such wide applicability and so many uses. Many standardized tests use multiple choice items exclusively. In this reading comprehension test made based on the syllabus and the curriculum. In this research, the researcher applied pre-test and post-test. The pre-test was given before doing an experimental research or before teaching by using Generating Interaction between Schemata and Text (GIST) strategy. Meanwhile, the post-test was given after doing the treatment or after teaching by using Generating Interaction between Schemata and Text (GIST) strategy.

The data was collected by administering the test. To find out the data, the researcher conducted pre-test which consist of 25 items in multiple choice form about hortatory exposition text. After gaining the pre-test, the researcher gives the treatment by teaching Generating Interaction between Schemata and Text (GIST) strategy. At the last the researcher gained the post-test. It was given after the researcher applying the treatment. It is done to know the final score and to know the difference achievement before and after getting a treatment. The test of post-test consist of 25 items in multiple choice form about hortatory exposition text.

E. Reading Test

1. Validity

Validity is the most important characteristics in measuring and developing the instruments. Validity can be indicated as the instrument's accuracy. According to Fraenkel and Wallen (2006:150), validity is the most important idea to consider when preparing or selecting an instrument for used.

Ary *et al* (2010:225), validity is the most important consideration in developing and evaluating measuring instruments. Also, validity was defined as the extent to which an instrument measured what is claimed to measure. In this research, to measure whether the test has a good validity or not, the content validity, construct validity, and face validity were used in this research.

1. Content Validity

Content validity is validity in the terms of the content about what we say the test is about. According to Best and Kahn (1995:219), content validity refers to the degree to which the test actually measures or specifically related to the traits for a design, content, validity based on the textbooks, syllabus, and the judgement of subject matter specialists. To get content validity the test must be based on the learning material at the syllabus for the second semester of eleventh grade of senior high school is about hortatory exposition text. In this research, the researcher gives a written test to measure students' comprehension on reading hortatory exposition text. The researcher made this test based on the syllabus of the eleventh grade of MAN Tulungagung 1.

Table: 3.2 Content Validity

No.	Competence Indicator	Test Item Pre-Test	Test Item Post-Test
1.	Students are able to determine the information of the text (literal comprehension)	3, 5, 10, 11, 14, 24, 25	2, 5, 6, 10, 11, 15, 18, 24, 25
2.	Students are able to determine the main idea	1, 4, 6, 8, 15, 17, 20	1, 4, 8, 12, 14, 16, 20, 23
3.	Students are able to determine the purpose of the text (inferential comprehension)	2, 7, 12, 21	3, 9, 17, 21,
4.	Students are able to determine the reference of the text	9, 13, 16, 18, 19, 22, 23	7, 13, 19, 22
5.	Total	25	25

2. Construct Validity

Construct validity is used to determine how well a test measures what is supposed to measure. It usually verified by comparing the test to other tests that measure similar qualities. According to Best and Kahn (1995:219), construct validity is the degree to which scores on test can be accounted for by explanatory construct of sound. It can be linned that construct validity is indicating the measurement which was used based on theoretical concept. Related to the multiple choice test item and reading comprehension, Heaton (1995:117) states that multiple choice test offers a useful way of testing reading comprehension.

3. Face Validity

Face validity refers to the degree to which an assessment or test subjectively appears to measure the variable or construct that it is supposed to measure. According to Ary *et al* (2010:228), face validity refers to the extent to which examinees believe the instrument is measuring what it is supposed to measure. It means that the instruction must be clear and understandable for the students. The test in this research was design to measure students' comprehension on hortatory exposition text. Thus, to achieve face validity, the researcher provided instruction on the paper test. In this study, the face validity was done through validator by the expert. The purpose of the face validity was to check some aspects that were consideration in the test, they were:

- 1) To check the instruction must be clear and understandable for the students
- 2) The test was suitable with syllabus and their level
- 3) Time Allocation must be given clearly

2. Reliability

Reliability is a consistency of the measurement's test. According to Brown (2003:20), reliable test is a consistent and dependable. A test is reliable to the extent that scores made by an individual remain nearly the same in repeated measurements. That is, individuals will have the same or nearly the same scores. If the test reliable enough, the result would be consistent and the scores in the first and second test will remain equal.

The researcher have been tried out the instrument first before administering pre-test in the experimental class. It consists of 25 questions based on the text. Every items have five choices they are A, B, C, D, E. The purpose is to know the reliability of the instrument. The try out of the instruments was conducted at the class XI MIA U1 on Thursday, 7th February 2019 in MAN 1 Tulungagung. The participant consist of 30 students for trying out the items of intruments with the time allocation is 60 minutes. To know the reliability of this instruments the researcher used SPSS (*Statistical Package for Social Science*) version 16. The criteria for reliability test were :

0.800 – 1.000 = Very high

0.600 – 0.800 = High

0.400 – 0.600 = Medium

0.200 – 0.400 = Low

0.00 – 0.200 = Very low

Table 3.3 The Result of Reability Testing

Reliability Statistics

Cronbach's Alpha	N of Items
.856	30

From the table 3.3 the result of reability testing was 0.856. It means that trying out pre-test instrument was very high reliable. Based on the criteria of

reliability, the level of reliability pre-test instrument was very high reliable. So, it can be used as the research.

F. Normality and Homogeneity Testing

Normality test was used to know whether the data was distributed normally or not. Perry said on his book (2005:248), normal distribution is a symmetrical, bell-shaped distribution of data that has specific properties and is used as a reference point for comparing the shapes of data. After the normality test, homogeneity test was conducted in this research to determine whether the data obtained from the sample were homogeneous or not. To know the data is normal or not, the researcher used *Kolmogrov-Smirnov Test* with SPSS.

The criteria of acceptance of the hypotheses for normality test were:

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

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

The hypotheses for the normality test were:

Ho : The data are normally distributed.

Ha : The data are not normally distributed.

The result can be seen in the table below:

Table 3.4 Normality Test

		pre_test	post_test
N		30	30
Normal Parameters ^{a,b}	Mean	16,67	21,43
	Std. Deviation	1,918	1,633
Most Extreme Differences	Absolute	,169	,136
	Positive	,169	,110
	Negative	-,157	-,136
Kolmogorov-Smirnov Z		,927	,743
Asymp. Sig. (2-tailed)		,356	,639

a. Test distribution is Normal.

b. Calculated from data.

Based on the table 3.4, it can be seen that the Pvalue (Sig.) was 0.356 for pre-test and 0.639 for post test. Because the Pvalue (Sig.) of experimental class $> \alpha = 0.05$. So, H_0 is accepted and H_a is rejected. It means that the data of experimental class was distributed normally for pre – test and post - test.

After the normality test, homogeneity test was conducted in this research. Homogeneity test was conducted to determine wheter the data obtained from the sample were homogeneous or not. The criteria for acceptance of the homogeneity test were:

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

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

The hypotheses for the homogeneity test were:

H_0 = the variances of the data are homogenous

H_a = the variances of the data are not homogenous

Table 3.5 Homogeneity Test**Test of Homogeneity of Variances**

pre_test		post_test	
Levene Statistic	df1	df2	Sig.
1,432	1	58	,236

Based on the result of homogeneity testing was 0.236, it could be seen that the Pvalue (*Sig.*) = 0.236 > $\alpha = 0.05$. It showed that H_0 was accepted because of the Pvalue (*Sig.*) > $\alpha = 0.05$. It means that the variances of data was homogeneous.

G. Data Collecting Method

Data collecting method is a way how the needed data are collected. The researcher collects the data from the scores pre-test and post-test. The researcher gives the pre-test to know student's reading ability on hortatory exposition text. The researcher gives the pre-test to know student's reading ability on hortatory exposition text without using Generating Interaction between Schemata and Text (GIST) strategy. After the researcher get score from pre-test, the researcher apply GIST strategy treatment in doing reading hortatory exposition. Then, the researcher gives post-test to the students. The result of pre-test and post-test then researcher compares by using SPSS to know the affectivity.

The technique which used in collecting data can be shown as follow:

1. Pre – test

According to Creswell (2012:297), pre-test provides a measure on some attribute or characteristic that you assess for participants in an experiment before they receive a treatment. The researcher distributed the pre-test in the experiment class. It was conducted on Friday, 15th February 2019 in eleventh class of MIA U2. Pre-test was distributed before taught by using GIST strategy. Pre-test is administered to measure students' reading comprehension on hortatory exposition before treatment. In the pre - test students were asked to answer the multiple choice questions. The questions consist of 25 items. Every items have five choices that is A, B, C, D, E. The researcher has provided the answer sheet, then students put their own answer on the answer sheet. The researcher provides time allocation is 60 minutes. The assessment of the test is if true get 1 score and false get 0 score. So, it must based on the key answer. Students will get 25 score if all their test are correct.

2. Post – test

In the last technique which must be conducted by researcher is post-test. According to Creswell (2012:297), post-test is a measure on some attribute or characteristic that is assessed for participants in an experiment after a treatment. The post-test was conducted after doing the treatment. The researcher conducts the post test on Friday, 22nd March 2019. The post-test aims to measure the students' comprehension after they get GIST strategy in understanding hortatory exposition text. It is done to know the final score and to know the student difference achievement before and after they get treatment. In the post-test students were asked to answer the reading comprehension test

in the multiple choice form about hortatory exposition test. The post-test consist of 25 questions where in each questions have five choices that is A, B, C, D, E. With time allocation is 60 minutes. The researcher conducts the post-test in the experiment class that is XI MIA U2. The subject of this research is 30 students. If all the tests are correct, the score is 25.

H. Data Analysis

In data analysis, the writer gained the quantitative data. The quantitative data of this research were processed by using statistical method. This technique was used to find the significant different on the students' achievement before and after being taught by Generating Interaction between Schema and Text (GIST) strategy. To know the significant difference of the reading comprehension between taught by using GIST strategy and taught without GIST strategy was used paired sample t-test at SPSS 16.0 for windows. Firstly, the researcher input the data in SPSS statistics to know the frequency of pre-test and post-test score. Next, by using this application the researcher know the mean, median, mode and standard deviation. Then, from the compare of data the researcher know the pair samples statistics and finally the researcher find pair sample correlation from two tails and degree freedom. After the researcher knows the result of significant level from SPSS statistics, the researcher can give the conclusion about is it effectiveness or not in using the treatment GIST strategy in reading hortatory exposition text. This strategy is used to find the significant difference on the students reading hortatory exposition text using GIST strategy.

The paired sample t-test is a statistical procedure used to compare two means that are from the same individual, object, or related units. The researcher used paired sample t-test to know the significant difference effect before and after taught by using GIST (Generating Interaction Between Schemata and Text) strategy on students' reading comprehension in hortatory exposition text.

The data is in the form of scores, they are processed statistically by using SPSS 16.0 program. To prove the null hypothesis is rejected or accepted, the researcher used paired sample of t-test formula. The data analysis drawn as follow:

1. Formulating the hypothesis, the hypotheses are in the form of Alternative Hypothesis (H_a) and Null Hypothesis (H_0).
2. Determining the value of T_{count} , it can be seen on the output of SPSS analysis.
3. Determining the value of T_{table} . The value of T_{table} can be seen from in significance level $0.05 : 2 = 0.025$ (two tailed test) with degree of freedom (df) is $n-1$.
4. Determining the significance value based on the output of SPSS analysis. In this case, the value of significance should be lower than 5% significance level (< 0.05)
5. Determining hypothesis testing. The alternative hypothesis is accepted if the significant value is smaller than significant level.