CHAPTER III

RESEARCH METHOD

This chapter presents (a) research design, (b) population of sample / subject of the study, (c) research instrument, (d) variable, (e) procedure of treatment, (f) validity and reability testing, (g) normality and homoginity of testing, (h) data collection method and data analysis.

A. Research Design

The students whish taught by using a methods is the students of the first grade in SMAN 1 BANTUR. This research used quasi-experimental study, using comparison or control group to investigate research question (without random assignment) (Alison Mackey and Susan M. Gass, 2005:146), which aims to know whether Semantic Mapping was effective on studdents' reading skill of narrative text. The design of quasi-experimental according to Creswell (2008) was as the following table.

Table 3.1

Pre- and Post-test Design

Control Group	Pre-test	To be taught By using traditional method	Post-test
Experimental Group	Pre-test	To be taught by Experimental Treatment	Post-test

Based on the table above, the writer took two classes, the experimental class and control class. Before giving treatment, the writer gave a pre-test to both of classes. Then the writer taught the students in the experimental class by using Semantic Mapping Strategy and in the control class by using a conventional method. The writer using conventional method like the writer just write in the white board and explain the material and the students just write in their book. After three meetings, the writer gave a post-test to the both classes. It gives to know the effectiveness of Semantic Mapping Strategy on students reading narrative text.

B. Population and Sample

1. Population

A population, according to Ary (2002:162-163) is all members of any well defined class of people, events, or object. It means that the population is a group of subjects, it can be person or things, to whom or which the findings of the research are to be applied.

In accordance to the topic of the research, the population was the first grade students at SMAN 01 BANTUR in the academic year 2017/2018. There were eight clasess. The total number was 258 students.

2. Sample

Selecting sample is very important step in conducting a research. According to Ary (2010:149) the small group that is observed is called a sample and the larger group about which the generalization is made is called a population.

A sample is a portion of a population. It means that a good sample must represent the entire populations as good as possible, so that the generalization of the sample as true as population.

The writer selected the sample by using purposive sampling technique. According to Ary (2002:163) purposive sampling technique is a portion of population from whom or which data are collected.

In this research the writer selected classes X IPA 1 consisted of 29 students as the experimental group that was taught by using Semantic Mapping Strategy. Whereas, class X IPA3 consisted of 26 students as control was taught by a traditional method. The researcher takes those classes as her sample because the two classes had average achievement.

C. Instrument

Instrument is a tool of collecting data that should be valid and reliable. According to Ary et.al (2010:201) tests are valuable measuring instruments for educational research. A test is a set of stimuli presented to an individual in order to elicit responses on the basis of which a numerical score can be assigned. This score, based on the representative sample of the individual's behaviour, is an indicator of the extend to which the subject bas the characteristic being measured.

The instrument to collect data in this research was test. The data were in the form of students' achievement on reading narrative text. The test was used to measure the students' ability in reading narrative text. The test was administered twice, before and after treatment (pretes-posttest). The pre-test was used to see the

students' achievement in reading narrative text before being given a treatment and post-test was used to see students' achievement in reading narrative text after being given a treatment.

D. Variable

According to Best (1977: 93) variables are the conditions or characteristics that the experimenter manipulates, control, or observes. The independent variables are the conditions or characteristics that the experimenter manipulates in her attempt to ascertain their relationship to observe phenomena. The dependent variables are the conditions or characteristics that appear, disappear, or change as the experimenter introduces, removes, or changes independent variables.

Concerning the research aims, the questions, and the hypotheses addressed in this research, the variables of this study were:

1. Independent Variable.

   Independent variable is the presumed cause of the dependent variable. In this experiment, the independent variable was using Semantic Mapping Strategy in teaching reading comprehension of narrative text.

2. Dependent Variable

   Dependent variable is the presumed effect of the independent variable. The dependent variable in this experiment was the students' ability in reading narrative text.

E. Procedures of Treatment

Treatment was given after administering the pre-test and before the post-test. The treatment for control class was conducted on, May 7th 2018 on, May 8th 2018 and on, May 9th 2018. Then the treatment for experiment group was conducted on, May 9th 2018 and on, May 11th 2018 and on, May 12th 2018. There were 26 students in control group and 29 students in experimental group who joined in this activity. In the first meeting, firstly the writer made a review of the material about narrative text briefly then the students were conducted in group and the writer discussed and gave example about the semantic mapping strategy for experimental class and quick reading method for control class. Secondly, the writer made a several group and the groups were given the passage of narrative text and the questions related to the text. Next, the students was order to arrange in their book which is they are already draw a semantic mapping tree. In the next day, the writer give the students test about answer the question which consist of 20 multiple choices. The multiple choice question all taken from internet. In multiple choice test, every items have four choices, there was A, B, C, and D. The time allocation for the test was exactly 60 minutes.

F. Validity and Relliability

1. Validity

Validity is the most important consideration in developing and evaluating measuring instruments (Ary, et.al, 2010:225). Fraenkel and Wallen (2009:147) give addition that validity is the most important idea to consider when preparing

or selecting an instrument for use. According to Best (1981: 254) "a test is said to be valid to degree that it measures what it claims to measure.

More than anything else, researchers want the information they obtain through the use of an instrument to serve their purposes. The drawing of correct conclusions based on the data obtained from an assessment is what validity is all about.

There are four types of validity; content validity, criterion related validity, construct validity, and face validity. In this study, the instrument tested by using *content validity* and *face validity* because those are relevant with this research.

a. Content Validity

Lodico et al. (2006:93) state the content validity is composed of two items of validity, sampling validity and item validity.

A test was said have content validity if it constitutes a representative sample of language skills, structures, etc, being tested beside that the content of instrument has also to relevant with the purpose of the test. In this case, the content of the test should refer to the "School Based Curriculum (SBC)". Based on the standard competence in syllabus of SBC, it was mentioned that the first grade of Senior High School were expected to able comprehend meaning and create a simple short essay in the form of narrative text.

In this research, the content of items in testing used narrative text. It was suitable for the first grade students of SMAN 01 BANTUR.

Table 3.2

Matrix of Content Validity

Learning Objective	Type of test	Test Item	Pre-Test	Post-Test
Menganalisis fungsi sosial, struktur teks dan unsur kebahasaan pada teks narrative sederhana.	Multiple choice	Objective test	1, 2, 4, 7, 9, 10, 11, 14, 15, 18,19	1, 2, 3, 9, 10, 11, 12, 13, 17, 18, 20
Menangkap makna dalam teks narrative lisan dan tulis sederhana.	Multiple choice	Objective test	3, 5, 6, 8, 12, 13, 16, 17, 20	4, 5, 6, 7, 8, 14, 15, 16, 19

b. **Face Validity**

The test is said to have face validity if it measures what is supposed to measure. This research was done to know the effectiveness of using Semantic Mapping Strategy on the students' ability in reading narrative text, so the test should in the form of objective test. Related to this research, the writer asked the

students to write a narrative text. It showed that the test was valid based on face validity

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2. Reliability

According to Lodico et.al (2006:87), reliability refers to the consistency of score, that is, an instrument's ability to produce "approximately" the same score for individual over repeated testing or across different ratters.

Furthermore, Ary, et.al (2010:236) stated that reliability of a measuring instrument is the degree of consistency with which it measures whatever it is measuring. This quality is essential in any kind of measurement. On a theoretical level, reliability is concerned with the effect of error on the consistency of scores.

Reliability is the consistency of the instrument in producing the same score on different testing occasions or with different raters. To get reliable the writer used inter-rater reliability. Inter- rater reliability is achieved when two scorers or two raters do the scoring (Isnawati: 23). Two rater in this research were the English teacher and the writer herself. This research, the researcher also used SPSS 16.0 for window to know the reliability of test instruments. The criteria of reliability instrument can be divided into 5 classes as follows as follows (Ridwan : 2004), those are:

1. If the cronbach alpha score 0.00 – 0.20: less reliable

2. If the cronbach alpha score 0.21 – 0.40: rather reliable

3. If the cronbach alpha score 0.41 – 0.60: enough reliable

4. If the cronbach alpha score 0.61 - 0.80: reliable

5. If the cronbach alpha score 0.81 – 1.00: very reliable

The result of reliability testing by using SPSS 16.0 can be seen from the table:

Table 3.3

Result of Reliability

Cronbach's Alpha	N of Items
.610	20

Based on the text above, that the test can said reliable or not can be seen through Cronbach's Alpha. The score of Cronbach Alpha was 0,610 and it was categorized as reliable.

G. Normality and Homogeneity Testing

1. Normality

Normality distribution test is a test to measure whether our data has a normal distribution or not. That is important to get the normality data because showed the sample data represent to population when it is come from a normal distribution. So it can be used with the paramedic statistic. To know the normality, the researcher used *Kolmogrov-Smirnov* test with SPSS 16.0 by the value of significance 0.05. So that H_0 (Null Hypothesis) is accepted and the H_1 (alternative Hypothesis) is rejected. Testing of data normality is conducted by the rules as follows:

a. If the value of significant level is bigger, so the distribution of the data is normal.

b. If the value of significant level is smaller, so the distribution of the data is not normal.

The result of the normality test computed by SPSS 16.0 was as follow:

a. Normality Testing of Experimental Class

Table 3.4

Test of Normality

Result of normality experimental test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
pretest	.121	29	.200*	.953	29	.223
postest	.125	29	.200*	.962	29	.373

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Based on the table above it was known that the significance value from pre-test was 0.200 and from the post-test was 0.200. Both value of pre-test and post-test were bigger than 0.05. The sig/p value on pre-test was 0.200 and it was bigger than 0.05 (0.200>0.05) means that the data was in normal distribution. Then, for post-test score the value of sig/p was 0.200 and that was bigger than 0.05 (0.200>0.05) means that the data was in normal distribution. It also means

that H_0 was accepted and H_1 is rejected. So, it could be interpreted that both of data (pre-test and post-test score) were in normal distribution.

    b. Normality Testing of Control Class

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Table 3.5

Tests of Normality of Control Class

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
pretest	.150	26	.134	.959	26	.370
postest	.146	26	.162	.945	26	.176

a. Lilliefors Significance Correction

Based on the table above it was known that the significance value from pre-test is 0.134 and from the post-test is 0.62. Both value of pre-test and post-test were bigger than 0.05. The sig/p value on pre-test was 0.134 and it was bigger than 0.05 (0.134>0.05) means that the data was in normal distribution. Then, for post-test score the value of sig/p was 0.162 and that was bigger than 0.05 (0.162>0.05) means that the data was in normal distribution. It also means that H_0 was accepted and H_1 was rejected. So, it could be interpreted that both of data (pre-test and post-test score) were in normal distribution.

2. Homogeneity

Homogeneity testing was conducted to know the whether they gotten data has a homogeneous variance or not. For computation of homogeneity testing using one way anova by SPSS version 16 and the result of the homogeneity can be seen on the table below:

Table 3.6

Test of Homogeneity of Variances

score

Levene Statistic	df1	df2	Sig.
8.117	1	53	.006

Based on the table above it was known that the sig/p value was 0.006 higher than 0.05 means H0 was accepted and H1 was rejected. So, it could be interpreted that the data was homogeneous.

H. Data Analysis

Analyzing data is a process of analyzing the acquired from the result of the research. After all the data needed in this research have been collected. The resercher analyzed wheter there was a significant difference between the ability in reading narrative text using Semantic Mapping Strategy and in controlled class by using conventional method. In conducting the test, the writer gave achievement the reading ability of the students. To describe the students achievement in reading narrative text, the researcher in this research using SPSS 16 for windows with the independent t-test. If the result of t- test was bigger than at the level of

significance 0.05, the null hypothesis could not be rejected, indicated that Semantic Mapping Strategy was not effective on students' reading ability in narrative text. By contrast, if significant level was bigger than t-test at the level of significance 0.05, the null hypothesis could be rejected indicating that Semantic Mapping Strategy was effective on students' reading ability in narrative text. And if the significant value bigger than 0.05 means Ho was rejected and H1 was accepted. On contrary, if the significance value smaller than 0.05 means that Ho was accepted and H1 was rejected.