CHAPTER III

RESEARCH METHODOLOGY

This chapter focusses in the discussion of research method are research design, population and sample or subjects, research instrument, validity and reliability testing, normality and homogenity, data collection method, and the last is data analysis.

A. The Research Design

The purpose of research design is to know the using of scaffolding technique is effective or not if used in tenth grade of smk islam 2 durenan. According to Ary (2006:21) research is an attempt to solve the problems by using scientific approach in a sistematic way.

This research used experimental design by using quantitave research. According to Ary (2006:26) experimental study is scientific investigation in which the researcher manipulates and constructs one or more independent variables and observes the dependent variable or variables. In this study of the experimental research has been done in the class with taking students as a population. Experimental research is classified into pre-experimental design, true experimental, and quasi-experimental. Pre-experimental research does not have random assigment of subject to groups or other strategies to control the variable. True-experimental research used random and provides maximum control of valiable. Quasi-experimental research not randomly selected. In this study

research the writer uses pre-experimental study by using "pre-test and post-test design". Before having treatment called pre-test and after giving treatment called post-test. In this research the researcher used one group (one class) to do the pre and post test.

The procedures of experimental research that use one group of pre-test and post-test design are :

1. Preparing a pre-test with a purpose to know the students' writing ability in narrative text in the tenth grade of SMK Islam 2 Durenan before being taught by using the technique .

2. Applying the experimental treatment by using Scaffolding technique to the subjects.

3. Preparing a post test with purpose to know the students' writing ability of narrative text in the tenth grade of SMK Islam 2 Durenan after being taugh by using the technique

In this research, the researcher wants to see whether the scaffolding technique is effective in teaching writing for tenth grade students of senior high school by using pre-experimental study. There were one classes in this research. This research conducts in four meetings. Each meeting conducted with a lesson plan specifically designed by the writer based on existing curriculum.

B. Population, Sample and Sampling

1. Population

   According to Sugiono (2010:117), population is geographic generalization there are : object/ subject has quality and certain of characteristics that set by researcher to learn then make a conclusion. In other definition by Arikunto (2010:1173) state that population is the whole subject of the research. In this research the population was all of tenth grade of SMK Islam 2 Durenan on second semester. The tenth grade of SMK Islam 2 Durenan consist of four classes.

2. Sample

   The important step in conducting the research is select the sample. Sample is a portion of a population. Sample is a part of population that wants to be analyzed. According to Arikunto (2006:109), a sample must be representative to a population. In this research, the researcher's sample was the one class on the tenth grade of TSM 2 at SMK Islam 2 Durenan.

3. Sampling

   Sampling is technique to take sample (Sugiyono 2013). Generally, sampling is divided into two types : systematic sampling called probability sampling and the second, unsystematic non-probality sampling. Probability sampling is that every member or element of the population has a known probability of being chosen in the sample. And

non-probability sampling is in which each element has zero chance to be selected as a sample Creswell (2008:142).

In this research, the researcher used simple random sampling because all of the classes as the homogenious classes. According to Creswell (2012) in simple random sampling any individual has an equal probability of being selected from the population. It means all of the subject in a population is given equal probability to be choosen as a sample of study. The result, the researcher took X TSM 2 class as the sample with 22 students.

C. Variable

A variable is everything that will become that object of research or the influencing. Variable is everything to which the researcher expects to find the answer and that become point of research. The most important classification is on the basis of their use within the research under consideration, when they are classified as independent variables or dependent variables (Ary, 1985:30).

1. Independent variable: is variable that consequence of or upon antecedent variables. One independent variable must be the treatment variable. One or more groups receive the experimental manipulation or treatment. In this study, the teaching descriptive writing by using facebook group is the independent variable.

2. Dependent variable: is the response or the criterion variable that is presumed to be caused by or influenced by the independent treatment conditions and any other independent variables. In this study, the dependent variable is the student's descriptive writing achievement.

D. Research instrument

Research instrument refers to any equipment used to collect the data Arikunto (2010:262). As an experimental research, the instrument used in this research was test. According to Ary (2006;201) test is a set of stimuli presented to individual in order to elicit responses on the basic of which numerical score can be assigned.

In this case, there are two kinds of tests that should be done by the researcher, there are :

1. Pre test

   Pre test is the test that given to all students in class X TSM 2 of SMK Islam 2 Durenan. The test is conducted to know the students writing ability in narrative before doing the treatment. In this pretest the reseacher asked the students of X TSM 2 to write a narrative test with a topiv that the researcher choose or students can choose their topic self. This writing consist of 3 paragraph.

2. Post test

   Post test is the test that given to all students in class X TSM 2 of SMK Islam 2 Durenan to measure the students writing ability in narrative
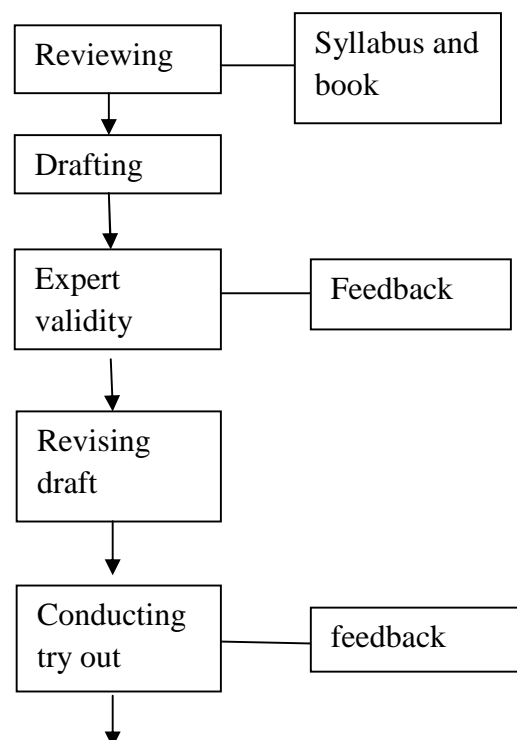
text. In this post test the researcher used the same test with the pre test, but the researcher ask the students to write with the different topic in clear generic structure that the researcher explain in the treatment.
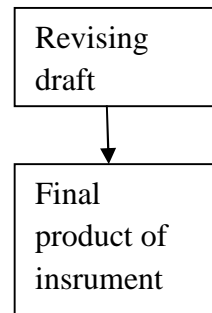
E. Validity and Reliability Testing

As a prevously mentioned, the researcher used test as the research instrument. Both pre test and post test were intended to measure students writing ability. The test should fulfill some factors to get the data as well. The factors tested here is validity and reliability of the test. By using a valid and reliable instrument to collect the data, it was expected that the data and the result of the research it self also valid and reliable.

To see the validity and reliability of the test can be seen the following figure.

Figure 3.1. Chart instrument

```
┌─────────────┐
│ Revising    │
│ draft       │
└─────────────┘
       │
       ▼
┌─────────────┐
│ Final       │
│ product of  │
│ insrument   │
└─────────────┘
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Based on the figure 3.1, the first step to get valid and reliable test is the researcher will review the book and syllabus to draft the test. After drafting the test, the researcher shows the test to expert validity to get feedback and validation guide. Then, the researcher revising the draft of test. Next, the researcher conduct a try out to the students who have the same class as the sample to know the test valid or not. The last, the researcher will revise the test again based on the feedback to get the final draft.

1. Validity

   Validity is the most important consideration in developing and evaluating measuring instrument. Ary (2006:225) defines validity as the extent to which an instrument measured what it claimed to measure. In other words, validity can be defined as the instrument that measures what is supposed to be measured. In this study, to ensure test validity the researcher used content and construct validity.

   a. Content validity

      Content validity means there is correspondence between curriculum objectives and the objectives being tested. In this case

the researcher also learns the curriculum set to know what students must be able to do in certain level. The researcher found that students in tenth grade of senior high school be able to write three genres : descriptive, narrative, and recount. In this case, the researcher used narrative text as the topic.

In this research, the content of items in testing used narrative text. It was suitable for th tenth grade of SMK Islam 2 Durenan. Here the table of syllabus of senior high school.

Table 3.1. Syllabus of Senior High School

Kompetensi Dasar	Materi Pokok	Pembelajaran
3.9. Menganalisis fungsi sosial, struktur teks, dan unsur kebahasaan pada teks naratif sederhana berbentuk legenda rakyat, sesuai dengan konteks penggunaannya. 4.15. Menangkap makna dan menulis teks naratif berbentuk legenda, sederhana	**Teks naratif lisan dan tulis berbentuk legenda sederhana.** *Fungsi sosial* Meneladani nilai-nilai moral, cinta tanah air, menghargai budaya lain. *Struktur* a. Pengenalan tokoh dan setting b. Komplikasi terhadap tokoh utama c. Solusi dan akhir cerita *Unsur kebahasaan* (1) Kata-kata terkait karakter, watak,	**Mengamati** • Siswa menyimak berbagai contoh teks legenda yang diberikan/ diperdengarkan guru • Siswa mengamati fungsi sosial, struktur dan unsur kebahasaannya • Siswa mengamati keteladanan dari cerita legenda • Siswa belajar menemukan gagasan utama, informasi rinci dan informasi tertentu dari teks legenda **Menanya** • Dengan bimbingan dan arahan guru, siswa mempertanyakan antara lain perbedaan antar berbagai teks naratif yang ada dalam bahasa

	dan setting dalam legenda Modal auxiliary (2) verbs. (1) Ejaan dan tulisan tangan dan c etak yang jelas dan rapi (5) Ucapan, tekanan kata, intonasi, ketika mempresentasik an secara lisan (6) Rujukan kata *Topik* Keteladanan tentang perilaku dan nilai-nilai luhur dan budaya.	Inggris, perbedaan teks dalam bahasa Inggris dengan yang ada dalam bahasa Indonesia. • Siswa mempertanyakan gagasan utama, informasi rinci dan informasi tertentu **Mengeksplorasi** • Siswa membaca beberapa text legenda dari berbagai sumber. • Siswa berlatih menemukan gagasan utama, informasi rinci dan informasi tertentu • Siswa melengkapi rumpang dari beeberapa teks legenda sederhana • Siswa secara berkelompok menuliskan /menyalin teks recount dengan memperhatikan fungsi sosial, struktur, dan unsur kebahasaan dengan runtut • Siswa membacakan teks recount kepada teman dengan menggunakan unsur kebahasaan yang tepat **Mengasosiasi** • Secara berpasangan siswa menganalisis beberapa teks legenda dengan fokus pada fungsi sosial, struktur, dan unsur kebahasaan • Siswa memperoleh balikan (*feedback*) dari guru dan teman tentang

		hasil analisis yang disampaikan dalam kerja kelompok.
		Mengomunikasikan • Siswa menyampaikan informasi fungsi social, struktur, dan unsur kebahasanyang ditemukan setelah • membaca teks legenda. • Siswa menceritakan kembali teks legenda sederhana yang dibaca dengan memperhatikan fungsi sosial, struktur dan unsur kebahasaannya. • Siswa membuat kliping teks legenda dengan menyalin dan beberapa sumber. • Siswa membuat 'learning journal'

b. Construct validity

Construct validity is capable of measuring ertain specific characterisics in accordance with theory of language behaviour and learning. In this research the researcher tested the students writing ability by writing test and the techniue of scoring the students writing ability based on five aspects of writing, they are content, organization, mechanic, grammar, and vocabulary.

In this case the researcher used aalytical scoring rubric by jacobs

Table 3.2. Scoring rubric for writing skill

Components of Writing	Scores	Indicators
Content	4	Relevant to the topic and easy to understand
	3	Rather relevant to the topic and easy to understand
	2	Relevant to the topic but not quite easy to understand
	1	Quite relevant to the topic but is not 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
Mechanic	4	A few errors 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
Grammar	4	There is almost no error in the use of sentence
	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	Many vocabulary variations
	3	Few vocabulary variations
	2	Almost no vocabulary variations
	1	Lack of vocabulary variations

SCORE
Content : ___ + Organization : ___ + Mechanic : ___ + Grammar : ___ + Vocabulary : ___ =

$$\text{Final scores} = \frac{\text{Gain score}}{\text{Maximum score}} \times 100$$

2. Reliability

A reliability test is consistent and dependable. If the students are given the same test on two different occasions, the test should yield similiar result. The word "similiar" is used here because it is almost impossible for the est takers to get exactly the same scores when the test is repeated the following day. Isnawati (2011:18). According to Heaton (1975:155) reliability is necessary characteristic of any good test for it to be valid all, a test must first be reliable as a measuring instrument. The range of reliability coefficient is 0-1. In this case, 0 means not reliable while 1 means perfectly reliable and closer reliability coefficient to 1, the more reliable the test.

The writer analyzed and processed the data using *Intra Rater Reliability*. Because the researcher used subjective test to test the writing narrative text, so the response of the students can't be judge as correct or incorrect and it involves the rater in the process of judgement. In additon the researcher does the scoring twice. Hence, two sets of scores are gotten and then the researcher are calculated using person product moment for getting correlation coefficient. In this

research the writer used *Intra Rater* to look for the reliabilities which

it's count using computer in *SPSS* 16.

According to Uyanto (2009:275) the value of cronbach's alpha can

be interpreted as follow :

Table 3.3. Interpertation of Reliabilty

Coefficient Reliabilities	Interpretation
0,00 - 0,20	Very Low Reliabilities
0,20 - 0,40	Low Reliabilities
0,40 - 0,60	Middle Reliabilities
0,60 - 0,80	High Reliabilities
0,80 - 1,00	Very High Reliabilities

Here the result of try out test

Table 3.4. The statistical correlation of *Person Product Moment* from SPSS statistics 16.0

Correlations

		score_1	score_2
score_1	Pearson Correlation	1	.530[*]
	Sig. (2-tailed)		.016
	N	20	20
score_2	Pearson Correlation	.530[*]	1
	Sig. (2-tailed)	.016	
	N	20	20

*. Correlation is significant at the 0.05 level (2-tailed).

Based on the table above, the result of computing shows 0.530. It

can be concluded that the instrument of this research was reliable

because the number is in the middle of the reliability level.

F. Normality and Homogenity Testing

1. Normality

   Normality testing is conducted to know whether the gotten data is normal or not. The computation of normality testing in this research using *SPSS Statistics 16.00* is *One-Sample Kolmogorov-Smirnov test* by the value of significance ( ) = 0.05. Testing of data normality is conducted by the rules as follow:

   a. H0 :If the value of significance > 0.05 so the distribution data is normal.

   b. Ha : If the value of significance < 0.05 so the distribution data is not normal.

   c. If the distribution data is normal, so next to homogenity testing.

2. Homogenity

   Homogeneity testing is conducted to know whether the gotten data has a homogeneous variance or not. The computation of homogeneity testing by using *SPSS Statistics 16.00* is *Test of Homogenity of Variance* by the value of significance = 0.05. Before doing homogeneity testing, the researcher decides hypothesis in this homogeneity as follow:

   a. H0: if the both variances >0.05 it means that before and after given the treatment are same.

   b. Ha: if the both variances <0.05 it means that before and after given the treatment are different.

3. Data Collecting Method

Data collecting method is the method that is used by the researcher to collext data. The data collection method in this research was done in three steps :

1. Pre test

    The pre test has been out before the treatment was given. It was done on Friday, april 7th 2017. In this pre test, the researcher asked X TSM 2 to write a narrative text about the topic that already choose by the researcher or the students can choose their topic if they not familiar with the topic.

2. Post test

    The last method used to collect the data was post test. The post test was doing to the group after the treatment. It was done on Friday, April 28th 2017. In the post test, the researcher asked the students class X TSM 2 to write a narrative text about the topic that teacher choose. The purpose of administering post test in this study was to observe and measure any changes of the students writing ability after being taught by using scaffolding technique.

4. Data Analysis

Data analysis is a review of a series of activities, grouping, systematization, interpretation and verification of data so that a phenomenon has social value, academic and scientific (Tanzeh, 2009:69). The data obtained from research result is the result of students test that were analyzed quantitatively. Quantitative analysis was done by using statistic which is called statistical analysis or inferential statistic.

The technique of the data analysis used in the research is Quantitative data analysis. This is a technique used to analyze and count the data, to know the student's achievement in writing taught by scaffolding technique. The researcher in this research uses Paired sample T Test stated by SPSS 16.0.

5. Hypothesis Testing

The hypothesis of this studies are as follows:

a. If the significant level is bigger than T-table ,the alternative hypothesis (ha) is accepted and null hypothesis (ho) is rejected. It means that there is different score to the students who was not taught using Scaffolding Technique and the students who was taught using Scaffolding Technique.

b. If the significant level is smaller than T-table, the Null Hypothesis (Ho) is accepted and the alternative hypothesis (Ha) is rejected. It means that there is not different score to the students who was taught without using Scaffolding Technique and the students who was taught Scaffolding Technique.