CHAPTER III

RESEARCH METHODOLOGY

This chapter focuses on the discussion of research method including research design, population and sample or subjects, research instrument, validity and reliability testing, normality and homogeneity, data collection method, and the last is data analysis.

A. The Research Design

The purpose of research design is to know if the use of scaffolding technique is effective or not as it is used in seventh grade of SMP Negeri 1 Sumbergempol. According to Ary (2006:21) reserach is an attempt to solve the problems by using scientific approach in a sistematic way.

Experimental study is scientific investigation in which the researcher manipulates and constructs one or more independent variables and observes the dependent variable or variables (Ary, 2006:26). To conduct this study the researcher uses experiment design by using quantitative research approach to investigate the effectiveness of scaffolding technique toward students skill in writing descriptive text at the seventh grade of SMP Negeri 1 Sumbergempol. The researcher used Pre-Experimental design because the researcher want to search cause and effect between the independent variable and dependent variable. The illustration of the research design in this study is:

Table 3.1 the illustration of Research Design

Pre-Test	Treatment	Post-Test
Y1	X	Y2
(DV)	(IV)	(DV)

X   : Scaffolding Technique (Independent Variable)

Y1   : Student's achievement in writing descriptive text before taught by using Scaffolding Technique (Dependent Variable)

Y2   : Student's achievement in writing descriptive text after taught by using Scaffolding Technique (Dependent Variable)

B. Description of Treatment

In this research, the researcher used scaffolding in teaching descriptive text as the treatment in this research, because it is the best way to teaching descriptive text. The procedures of experimental research that use one group of pre-test and post-test design are:

1. Pre-test

   Pre-test is given to the students to know their achievement in writing descriptive text before being taught by using Scaffolding Technique. Pre-test had done on January 29th 2019. In that day, the researcher come to seven B and asked the students to write an essay in type of descriptive text according to the paper what has the researcher given to them. The number of students who got pre-test was completely 34 students. After finishing the test, the researcher used scoring rubric to calculate the score of pre-test. The aim of calculating is to know the result of pre-test before being taught by Scaffolding Technique.

2. Treatment

   After administering the pre-test, the researcher gave the students treatment. The first treatment had be done on February 2nd 2019. In that

date, the researcher explain the material about descriptive text and introduction of Scaffolding Technique. The second treatment had done on 5th February 2019. The reseacher made a group according to ZPD (Zone of Proximal Development) on their score in pre-test. The researcher gave the students freedom to move around,moving and thingking their senses to observe the thing in class, house or thing around them. Then, the students wrote the description about what they get inside or outside of the class. The third treatment hade done on 9th February 2019. The researcher ask to the students to describe about animal or public place in the classroom. Then, the students who have high ZPD can help their friends who have low ZPD to do this assigment. Here the researcher as a facilitator, motivator and give some keyword to make the students learning independence. The procedure of teaching by Scaffolding Technique according to Gasong (2007) like state bellow:

a. Explain the material learning.

b. Determine Zone of Proximal Development (ZPD) or the level of development of students based on their cognitive level by looking at the value of previous learning outcomes.

c. Group students according to ZPD.

d. Provide learning assignment in the form of tiered question related to learning material.

e. Encourage students to work and learn to solve questions independently in group.

    f. Provide assistance in the form of guidance, motivation, giving example, keyword or other things that can provoke students towards learning independence.

    g. Invite students who have high ZPD to help students who have low ZPD.

    h. Summarize the lesson and give assignments.

3. Post-test

Post-test is given to the students to investigate and measure the developmengt their achievement in writing Descriptive text after being taught by using Scaffolding Technique. Post-test had done on 12th February 2019. In that date, the researcher came to seven B to asked the students to write an essay in type of descriptive text according to the paper what has the researcher given to them. The number of students who got pre-test was completely 34 students. After finishing the test, the researcher used scoring rubric to calculate the score of post-test. The aim of calculating is to know the result of post-test after being taught by Scaffolding Technique.

In the research, the researcher wants to see whether the scaffolding technique is effective in teaching writing for seventh grade students of junior high school by comparing the pre-test and post-test scores.

C. **Population, Sample and Sampling**

1. **Population**

According to Arikunto (2006:130) Population is total subject research. Population is geographic generalization there are: object/subject has quality and certain of characteristics that set by researcher to learn then make a conclusion (Sugiono, 2010:117). The population in this research all of seventh grade of SMP Negeri 1 Sumbergempol consist of five class. Each class consist 28 until 30 students. The total population is 150.

2. **Sample and Sampling**

Arikunto (2016:109) a sample must be representative to a population. The sample of the population, the researcher focused on one class and using purposive sampling to consider some qualifications. According to Perry (2005:57) purposeful sampling strategy is used to indicate that the sample is chosen to answer the research question as relevan as possible. By using purposive sampling, the researcher consider some suggestion from certain people who know well which sample is appropiate to be chosen by giving qualification. That is why, one of the good criterion is seven B. According to English teacher in SMP Negeri 1 Sumbergempol recomended seventh B to be the sample of population.

D. **Research Instrument**

Research instrumen refers to the instrumen or tool to collect the data. Instrumen which used by the researcher was writing 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. Test used to measure the students' achievement in writing descriptive text before and after being taught by using scaffolding technique.

There are two kinds of test that should be done by the researcher, there are:

1. Pre-Test

   To measure the student's ability before the treatmen process. The purposes of pre-test is to know the basic for students ability in writing descriptive text before they get the treatment. Pre-test was given to all students in class 7B SMP Negeri 1 Sumbergempol. In this pre-test the researcher asked the students of 7B to write a descriptive test with a topic that the students. Than, the score of the test will be determine between pre-test and post-test.

2. Post-Test

   To measure the student's ability after the treatmen process. The purposes of post-test is to know the basic for students ability in writing descriptive text after they get the treatment. In this test, post-test same with the pre-test, but the reasearcher ask to the students to write the same topic but different title. It is done to know the final score and to know the students diference achievement before and after the treatment.

E. Validity and Reliability Testing

1. Validity

Validity is the most important idea to consider when preparing or selecting an instrument for use. Brown (2004) defines validity as the extent to which

inference made from assessment result are appropiate, meaningful, and useful in terms of the purpose of assessment. There are three types of validity :

a. **Content Validity**

Content validity means there is correspondence between curriculum objectives and the objectives being tested. The instrument in this research achieved content validity if the test is designed based on core competence and basic competence. The researcher will conduct consultation with the expert as the way to validate the test that has been set up. In this research the content of item in testing used descriptive text. It was suitable for the seventh grade of SMP Negeri 1 Sumbergempol. Here the table of syllabus of junior high school.

Table 3.2 Syllabus of Junior High School

Kompetensi Dasar	Materi Pokok	Pembelajaran
Siswa mampu: 3.4 mengidentifikasi fungsi sosial, struktur teks, dan unsur kebahasaan teks interaksi transaksional lisan dan tulis yang melibatkan tindakan memberi dan meminta informasi terkait nama dan jumlah binatang, benda, dan bangunan publik yang dekat dengan kehidupan siswa sehari hari, sesuai dengan konteks penggunaannya. (Perhatikan unsur kebahasaan dan kosa	❖ Fungsi social Mengidentifikasi dan menyebutkan berbagai benda, binatang, dan bangunan umum di lingkungan sekitar. ❖ Struktur teks ▪ Memulai ▪ Menanggapi (diharapkan/di luar dugaan) ❖ Unsur kebahasaan ▪ Pernyataan dan	▪ Mencermati beberapa teks pendek berisi penyebutan benda-benda di kelas dan sekolah untuk kemudian membaca dengan ucapan dan tekanan kata yang benar ▪ Menyimak dan menirukan guru menanyakan dan menyebutkan benda-benda yang terdapat di dalam kelas dan di sekolah, dengan tata bahasa, ucapan dan

kata terkait *article a* dan *the*, *plural* dan *singular*) 4.4 menyusun teks interaksi transaksional lisan dan tulis sangat pendek dan sederhana yang melibatkan tindakan memberi dan meminta informasi terkait nama dan jumlah binatang, benda, dan bangunan publik yang dekat dengan kehidupan siswa sehari hari, dengan memperhatikan fungsi sosial, struktur teks, dan unsur kebahasaan yang benar dan sesuai konteks	pertanyaan terkait benda, binatang, bangunan public ▪ Penyebutan benda dengan *a*, *the*, bentuk jamak (-*s*) ▪ Penggunaan kata penunjuk *this*, *that*, these, *those* ... ▪ Preposisi untuk *in, on, under* untuk menyatakan tempat ▪ Ucapan, tekanan kata, intonasi, ejaan, tanda baca, dan tulisan tangan ❖ Topik Benda, binatang, dan bangunanyang biasa dijumpai dalam kehidupan nyata di rumah, sekolah, dan lingkungan sekitar siswa yang dapat menumbuhkanperilaku yang termuat di KI	tekanan kata yang benar ▪ Bertanya jawab tentang beberapa benda di dalam dan sekitar rumah ▪ Membaca beberapa teks pendek tentang rumah dan sekitarnya, terutama keberadaan benda dan binatang ▪ Bertanya jawab tentang beberapa bangunan dan benda-benda dan binatang binatang di dalam dan sekitarnya ▪ Melakukan refleksi tentang proses dan hasil belajarnya

b. **Construct Validity**

Construct validity is validity which show how far the test are suitable with the theory that becomes a foundation on composing those test. Construct validity refers to the composting of instrument. The instrument is conducted by concerning to the aspect of writing descriptive text. In this research the researcher tested the students writing ability by

writing test and technique of scoring the students writing ability based on five aspect. According to Brown (2007:214) five aspect are Content, Organization, Grammar, Vocabulary and Mechanic. All of the component are important to the students, but in here the researcher focused on two components. There are Grammar and Vocabulary. Because the researcher wont to know the effect of scaffolding technique in writing descriptive text.

Table 3.3 scoring rubric for writing skill

Component of Writing	Scores	Indicators
Grammar 20% – Use present tense – Agreement	4	Very few grammatical, and agreement inaccuracies
	3	Few grammatical, and agreement but not effect the meaning inaccuracies
	2	Numerous grammatical, and agreement inaccuracies
	1	Frequent grammatical, and agreement inaccuracies
Vocabulary 15% – Word choice	4	Effective word choice, word forms and appropriate word number.
	3	Few misuse of word choice, word forms but not change the meaning and sufficient word number.
	2	Limited range confusing word choice, no word forms and less word number.
	1	Very poor knowledge of words and word forms, and limited word number.

2. **Reability**

A reability test is consistent and dependable data (Brown, 2004:20). It means that reliability is consistent from a series of measurement tools. Ary (2006:236) also said that reliability of a measuring instrument is the degree of consistency with which it measures whatever it is measuring. Richard (2009: 157) reliability refers to the consistency of the score obtained how consistent they are for each individual from one

administration of an instrument to another and from one set of items to another. Reliability of the test is the measurement that explains the consistency of the test. The researcher used pre-test with differences classes. The test was hold on seven D consists 34 students.

According to Uyanto (2009:275) the value of cronbach's alpa can be interpreted as follow:

Table 3.4 Interpertation of Reability

Coeficient Reliabilities	Interpretation
0,00-0,020	Very Low Reabilities
0,20-0,40	Low Reabilities
0,40-0,60	Middle Reabilities
0,60-0,80	High Reabilities
0,80-1,00	Very High Reabilities

Table 3.5 The Statistical of Tryout

Reliability Statistics

Cronbach's Alpha	N of Items
.907	2

In this research, the researcher tried to check the empirical reliability by using SPSS 16.0 after trying out. In trying out the Cronbach's Alpha score was 0.907 Related with the categories of reliability testing stated by Uyanto was categorized into very high of the reability level.

F. Normality and Homogenity Testing

1. Normality Testing

Normality test are used to determine whether a data set is well modeled by a normal distribution or not. Normality test is intended to show that sample data come from a normaly distributed population to know the normality, the researcher used *One-sample Kolmogorov-Smirnov test* by the value of significance level (0.050). Testing of the normality is a conducted by the rules below:

- If the significant value > 0.050, it means that the data distribution is normal

- If the significant value < 0.050, it means that the data distribution is not normal

- If the data distribution is normal, next the researcher goes to homogenity testing.

2. Homogenity Testing

Homogeneity testing is intended to make sure that the collected manipulation data in analysis is truly taken from population which is too different each other. It is also conducted to know whether the data has homogeneous variance or not. To know the homogeneity, the researcher used *Levene* statistic with IBM SPSS Statistic 16.0.

G. 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 reasearcher

was collecting the data of the students in pre-test and post-test,the researcher in this research uses Paired sample T Test stated by SPSS 16.0. To know investigate the effectiveness of scaffolding technique in writing descriptive text.

H. 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.