

CHAPTER III

RESEARCH METHOD

This chapter is present the research design, the population and sample of the research, research instrument, validity and reliability testing, normality and homogeneity testing, data collecting, method and data analysis.

A. Research Design

This study used an experimental design with quantitative research approach. Experimental research is defined as a method of research which is used to looking for certain influence toward the other on the controlled condition (Sugiyono, 2007: 107). In this case, the researcher uses pre-experimental design with one group pre-test-post-test. In other words, the researcher uses one class as a single group who get treatment and the group get pre-test and post-test to know the result of treatment. According to Ary (2010, 302), pre-experimental design does not have random assignment of the subjects to groups or other strategies to control extraneous variables. It means the researcher does not have an authority to choose the sample.

The researcher conducted the pre-test and post-test to know the result of students' mastery before and after being taught by using Vocabulary Self-Collection Strategy. The researcher only used one class as the subject of the study without control group or comparison group. Furthermore, this research used pre-experimental research because it does not have random assignment

to determine the sample of the research. That is why the researcher just takes one group pre-test and post-test to know the result of the treatment.

In this research, the researcher focuses on the effectiveness of using Vocabulary Self-Collection Strategy to improve students' vocabulary mastery at the seventh grade of SMP Negeri 1 Sumbergempol. Related to this idea, the researcher investigated the effectiveness of independent variable is Vocabulary Self-Collection Strategy and the dependent variable is students' vocabulary mastery. The experimental group would be conducted by using pre-test before treatment and post-test for the result of treatment as instrument to collecting data. The pre-test and post-test was given to get students' score on students' vocabulary mastery. Thus, by comparing pre-test and post-test the researcher will be known the significant difference before and after taught by using Vocabulary Self-Collection Strategy. This design focused on the treatment and the result.

Table 3.1 The Illustration of Research Design

Pre-test	Treatment	Post-test
Y1	X	Y2

X : Vocabulary Self-Collection Strategy (Independent variable).

Y1: Students' vocabulary mastery before being taught by using Vocabulary Self-Collection Strategy (Dependent variable).

Y2: Students' vocabulary mastery after being taught by using Vocabulary Self-Collection Strategy (dependent variable).

B. Description of Treatment

In this research, the researcher used Vocabulary Self-Collection Strategy in teaching vocabulary mastery as the treatment. The procedures of pre-experimental research that use one group of pre-test and post-test design are:

1. Pre-test

Pre-test is given before treatment process. The purposes of pre-test is to know the basic of students' vocabulary mastery before they get the treatment. Pre-test was given to all students in class 7D SMP Negeri 1 Sumbergempol. In this pre-test the researcher gave 30 questions of vocabulary test in form of multiple-choices (25 questions) and matching pictures (5 questions) with the simple description, and the topic is descriptive text about people and animal. Than, the result of the test became the evaluation before using Vocabulary Self-Collection Strategy is applied for teaching vocabulary mastery.

2. Treatment

After administering the pre-test, the researcher gave the treatment to all students of 7D of SMP Negeri 1 Sumbergempol. The researcher applied Vocabulary Self-Collection Strategy as the treatment to increase students' vocabulary mastery. The researcher gave the treatment twice in teaching vocabulary mastery. The first treatment had done on April, 12th

2019. In that date, the researcher explained the material about descriptive text about people and introduction of Vocabulary Self-Collection Strategy also the purpose of Vocabulary Self-Collection Strategy. The second treatment had done on April, 15th 2019. The researcher continued the material about descriptive text but in the different topic. Here the researcher explained the descriptive text about animal. In every meeting of the research the students made group that consist of 4 to 5 students. In this activity, the researcher has been providing an appropriate topic, forming groups, encouraging students to read the text about descriptive text of people and animal then discuss in groups. Next, asking students to select the unfamiliar words that were important and interesting for students then they wrote the words in the Vocabulary Self-Collection Strategy chart. After that, asking the student to validate the meaning of each word by using dictionary, the leader of each group reports their discussion result to the other group, leading the groups to class discussion that guide them in comprehending the meaning and answering questions which is prepared by the researcher. (See the steps in appendix 5).

3. Post-test

Post-test is given before treatment process. The purposes of post-test is to know the students' vocabulary mastery after they get the treatment. Pre-test was given to all students in class 7D SMP Negeri 1 Sumbergempol. As like pre-test, post-test also contained 30 questions of vocabulary test in form of multiple-choices (25 questions) and matching

pictures (5 questions) with the simple description, and the topic is descriptive text about people and animal. Then, the result of the test is compared by with pre-test. In this case, the researcher knows how far is the effectiveness of using Vocabulary Self-Collection Strategy for teaching vocabulary mastery.

C. Subject of the Study

1. Population

Population is all subjects where the data will be gathered. According to Sukandarrumidi (2004:47) as cited in Rahayuningsih (2013) states population is all members of the research subjects. In other word, population is all individuals from whom the data are collected. The population of this research is the seventh grade of students of SMP Negeri 1 Sumbergempol in the academic year of 2018/2019. They are 352 students and grouped into class VII A to VII K.

2. Sample

Sample is groups of units selected from large group (Population) to represent it, because the population is too large to study in its entry (Porte, 2002: 243). According to Ary (2002: 163) states “The purpose of sampling is to obtain information concerning the population”. To determine the sample of population the researcher focuses on one class and using purposive sampling. The researcher chosen seven D because as recommended by the teacher who handles the class in SMP Negeri 1

Sumbergempol it suitable as subject of research. These are the reasons based on the teacher's recommend such as: the class have motivation in the learning process and represent the population. Most of them are cheerful and enthusiastic students.

Table 3.2 Sample of Research

Sample of VII D		Total
Male	Female	
19 students	16 students	35 Students

3. Technique Sampling

This research, the researcher uses purposive Sampling technique to take the samples. In purposive sampling, which also referred to as judgment sampling, sample elements judged to be typical or representative are chosen from the population (Ary, 2010:156). The researcher had taken one class at the seventh grade of SMPN 1 Sumbergempol in academic year 2018/2019, this is VII D class. It was done with some considerations that VII D class has enthusiasm in learning vocabulary.

D. Research Instrument

Research instrument is the tool of collecting data that must be valid and reliable, research instrument can be valid if the instrument can be measured what will be measured. Instrument is tool or facilitates that are used by

researcher (Arikunto2010: 160). The instrument that is used in this research is test.

In this study, the researcher used writing test in order to collect data needed. The test is used to measure the differences of students' achievement in vocabulary mastery before and after being taught by using Vocabulary Self-Collection Strategy. The test was administered twice, first before treatment called pre-test and after treatment called post-test. Both of the tests were descriptive text as the level of students in their grade and by considering with core competence and basic competence. The test consisted of 30 item questions in form of multiple choices (25 questions) and matching picture (5 questions) with the simple description. The allocation of time in doing the test is 60 minutes. The researcher used scoring rubric to assess the result of the test. For the scoring in task 1, the teacher gives three points in each number. Then, in task 2 the teacher gives five points in each number. If the students answer all questions correctly, they will get the score 100. (See the test in appendix 2 and 3).

E. Validity and Reliability Testing

Validity and reliability are important concepts in research. the data correct or not are depend the instrument of collecting method, the instrument that used in this research is the test.

1. Validity

An instrument is valid if it is able to measure what is desirable and it can reveal the data of the variables appropriately (Arikunto, 2006:158). Validity is used to determine how much the instruments have reflected the results. In addition, validity is applied to a specific purpose or use and therefore is not valid for all purposes. In this research, the researcher utilized three kinds of validity as follow:

a. Face Validity

The instrument have face validity when it looks can measure what is supposed to measure. It means that the test should look clear or the instruction must be understandable for the students. In this research, the test was designed to measure students' vocabulary mastery. Thus, to achieve face validity, the researcher provides the instructions on the paper test to ask students to answer the questions about descriptive text. The researcher used face validity by consulting with the advisor and English teacher who handles class D of first grade of junior high school. The purpose of face validity which is used in this research is to check some aspects that are consideration in the test, they are:

- a. To check that the instructions must be clear and understandable for the students.
- b. The test is suitable with syllabus and their level.
- c. Time allocation must be given clearly.

b. Content Validity

A test has content validity if it measures knowledge of the content domains of which it was design to measure knowledge. It means that, the content validity of the instrument is good if the items really measure the intended material, topic or subject or representing sample the content area knowledge to be measured. The content validity that used in this study was relevance to Curriculum of 2013 of first grade of SMPN 1 Sumbergempol. The test was design based on main competence and basic competence in the Curriculum of 2013 that are taught about descriptive text. Moreover, the basic competence mentions that the students are expected be able to composing descriptive text by concerning on the social function, text structure, and language features correctly according to its content. The researcher made a specification before making a test, especially in vocabulary testing. After knowing the standard competence, the researcher made indicator of the test based on the standard competence in syllabus. Therefore this test is valid in term of content validity. The content validity can be seen in the table as follows:

Table 3.3 Content Validity

Kompetensi Inti	<p>3. Memahami dan menerapkan pengetahuan (factual, konseptual, procedural) berdasarkan rasa ingin tahu tentang ilmu pengetahuan, teknologi, seni, budaya terkait fenomena dan kejadian tampak mata.</p> <p>4. Mengolah, menyaji dan menalar dalam ranah konkret (menggunakan, mengurai, merangkai, memodifikasi, dan membuat) dan ranah abstrak (menulis, membaca, menghitung, menggambar, dan mengarang) sesuai dengan yang dipelajari di sekolah dan sumber lain dalam sudut pandang/ teori.</p>
Kompetensi Dasar	<p>4.7. Teks Deskriptif</p> <p>4.7.1 Menangkap makna secara kontekstual terkait fungsi sosial, struktur teks, dan unsur kebahasaan teks deskriptif lisan dan tulis, sangat pendek dan sederhana, terkait orang, binatang, dan benda.</p>
Indicator Competences	<ul style="list-style-type: none"> • Students are able to define the suitable word that relevant with descriptive text. • Students are able to define the meaning of word based on the context. • Students are able to complete the simple sentence with suitable word. • Students are able to rearrange the word to make good sentence. • Students are able to define the description of animal by choosing the suitable picture.
Techniques	Multiple choice, and matching picture

Instrument of test	<ul style="list-style-type: none"> • Pre-test • Post-test
Time allocation	60 minutes

From the table above, the test has a content validity because there is appropriateness between the test and the indicator. It is appropriate with course objectives based on syllabus of the first grade of Junior high school.

c. Construct Validity

Construct validity is used to determine how well a test measures what it is supposed to measure. It refers to whether a test measures the construct adequately (every aspects in curriculum such as core competence, basic competence and indicator). Construct validity is also the essential to the perceived overall validity of test. In this study, the researcher will asked the students to answer the question about descriptive text based on the text to measure students' vocabulary mastery in the form of multiple-choices and matching picture. In the multiple-choices, the students should answer the questions from the selection answer. The matching test, the students should match the picture list in the right side with the simple description about animal in the left side. Both of them are appropriate for testing vocabulary.

2. Reliability

Reliability is a measuring instrument is the degree of consistency with which it measures whatever it is measuring. According Johnson and Christensen (2008:144) state that reliability refers to the consistency or stability of test scores. In this study, the researcher used inter-rater reliability to measure the reliability of the instrument. Inter-rater is degree of agreement between two or more raters or scores, (Johnson and Christensen, 2008: 150).

In this research, the researcher conducted tryout in different class to see that the test is reliability. The purpose of tryout itself was to know the clear instruction of the test and to achieve the reliable score. The researcher decided that compatible formula to calculate the reliability of the test is using Cronbach's Alpha in SPSS for windows.

After calculating the reliability of the test items, the researcher classified the reliability coefficient which taken from according to (Ridwan, 2004:136). The criteria of validity of instrument can divided into 5 classes as follow:

Table 3.4 Criteria of Reliability

Interval Coefficient	Correlation
0.00 – 0.19	Less reliable
0.20 – 0.39	Rather reliable
0.40 – 0.59	Enough reliable
0.60 – 0.79	Reliable
0.80 – 1.00	Very reliable

To know the reliability of the test, the researcher conducted tryout of the test. In this research, the researcher administered test as much 30 questions for the students. Tryout test conducted to the seventh grade different class that is 7E class of SMP Negeri 1 Sumbergempol which consists of 32 students. Based on the tryout that had done on March, 19th 2019, the researcher could find the result of the reliability of the test. And the result as follow:

Table 3.5 The Result of Reliability by using Cronbach's Alpha

Case Processing Summary		
	N	%
Cases	Valid	32
	Excluded ^a	,0
	Total	32

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics	
Cronbach's Alpha	N of Items
,742	30

From the analysis, the researcher got the result of pre-test tryout score. To know the items is reliable or not it can be seen from Alpha Cronbach's column. The Alpha Cronbach's score is 0.742. It can be concluded that the reliability of the test is reliable. Thus, it can be tested on students.

F. Data Collection Method

Data collection method is method to get the data in the research. The purpose of data collection is to get the information that needed by researcher. The method of collecting data which used in this research is administering test. According to Arikunto (2010: 127), states that test is a series questions, or others which are used to measure the skill, knowledge, intelligent, ability or talent that have by individual or group. In other word, test is a method of measuring students' ability knowledge by giving some questions.

The researcher collected the data from students' score of pre-test and post-test. The researcher gave students pre-test to know students' vocabulary mastery before teaching by using Vocabulary Self-Collection Strategy and gave post-test after teaching by using Vocabulary Self-Collection Strategy. The procedure of collecting data in this research as follows:

1. Pre-test

Pre-test is given to students to know on the students' vocabulary mastery. Specifically, it was conducted to know how far the students score in vocabulary mastery of descriptive text before being taught by using Vocabulary Self-Collection Strategy. In pre-test, the researcher gives 30 questions in form of multiple-choices and matching picture with the simple description to students. In this test consist of 25 multiple-choices, 5 matches to the picture. For the scoring in task 1, the teacher gives three points in each number. Then, in task 2 the teacher gives five points in each number. If the students answer all questions correctly, they

will get the score 100. The pre-test was administered on March, 25th 2019.

2. Post-test

After conducting treatment, the researcher gave post-test to investigate and measure their achievements in vocabulary mastery after being taught by using Vocabulary Self-Collection Strategy. In post-test, the researcher gives 30 questions in form of multiple-choices and matching picture with the simple description to students. In this test consist of 25 multiple-choices, 5 matches to the picture. As like in post-test, the scoring rubric for the test is the same with the pre-test. Then, the researcher compared the result of both pre-test and post-test. If there any differences score, it showed that treatment was successful and if there was no differences score, it showed that treatment was not successful. The post-test was administered on April, 22nd 2019.

After finishing the test, the researcher used scoring rubric to calculate the score of post-test. The aim of calculating is to know the students' score after being taught by using Vocabulary Self-Collection Strategy.

G. Technique of Data Analysis

Data analysis is a process of analyze the collected data from research. The data is taken from students' score in pre-test and post-test. In this research, the researcher used a quantitative data analysis. Quantitative data is

served in numeral form. Then, the score of pre-test and post-test will be analyzed quantitatively by using *paired sample T-Test* in IBM SPSS statistic 25.0. This technique is to find out the significant difference on students vocabulary mastery after being taught by using Vocabulary Self-Collection Strategy.

In this research, the researcher used statistical analysis because the result of the data was numerical form. The researcher used T-test to analyze the data by comparing with the first data (pre-test) and the second data (posttest) to know whether there was significant different score of the students before being taught by using Vocabulary Self-Collection Strategy and after being taught by using Vocabulary Self-Collection Strategy toward students' vocabulary mastery to the seventh grade students in SMP Negeri 1 Sumbergempol. If the result of post-test is higher than score of pretest, it means that teaching vocabulary by Vocabulary Self-Collection Strategy is effective. To get the achievement of vocabulary mastery test, the researcher gave the student a test after got treatment by Vocabulary Self-Collection Strategy. The researcher used Paired sample T-test since the data were normal. In this research, the researcher used analysis compare means-paired sample T-test by SPSS 25.0 because the researcher use one group experiment using two test, there are pre-test (without treatment) and post-test (using treatment). After that, the researcher compared the mean from the result of pretest and post-test. All the data collected were accounted by using SPSS 25.0 for windows, in this case was paired sample T-test.