#### **CHAPTER III**

### **RESEARCH METHODOLOGY**

#### A. Research Design

This research used quantitative research. According to Cresswell (2018: 277), a quantitative researcher attempts to fragment and delimit phenomena into measurable or common categories that can be applied to all of the subjects or wider and similar situations. MUERSY According to Sugiyono (2019:13) called quantitative traditional method, because this method is long enough to use so it's been a tradition as a method for research. This method is referred to as the positivistic method because based on the philosophy of positivism. This method is a scientific method because it has met the scientific principles that concrete, objective, measurable, rationally and systematically.

In quasi-experiments, the cause is manipulable and occurs before the effect ismeasured. However, quasiexperimental design features usually create less compelling support for counterfactual inferences. In quasiexperiments, the researcher has to enumerate alternative explanationsone by one, decide which are plausible, and then use logic, design, and measure-ment to assess whether each one is operating in a way that might explain any observed effect (Sugiyono, 2019:15).

 Table 3. 1 Randomized Group, Pre-Test and Post-Test

		11/1	
Group	Pre-test	Independent Variable	Post-test
E	Y1	X1	Y <sup>2</sup>
C	Y1	X0	Y <sup>2</sup>
No	otes :		AR
E	= Experime	ent group	13
C YI	= Control g = Pre- Test		5
XI	= Treatme using V	ent on the ex <mark>per</mark> ARK strategy	iment group
X0 VARK strategy	) = Treatme	nt on the control	group using
Y2	2 = Post-Tes	t	

**Table 3.2 The Procedures of Research** 

No.	Phase	Activities	Times	Groups
1.	Pretest	Initial measurement by answering multiple choice questions	60 menutes	Experiment and control
2.	Treatment Class	Learning uses the VARK strategy Learning uses the Traditional strategy	4 meetings with 60 minutes/meeting 4 meetings with 60 minutes/meeting	Eksperiment
3.	Postest	Initial measurement by answering multiple choice questions	60 minutes	Ekperiment and control

### B. Research Setting 1. Location

This research was conducted in SMAN 3 Kota Bengkulu which is located in Pagar Dewa, Kec. Selebar, Kota Bengkulu, Bengkulu 38216.

# 2. Population

In this research, the population on the research included all second grade students at SMAN 3 Kota Bengkulu in academic year 2023/2024. There were 360 students for the class.

NO	Class	The Number of the	
SY		Students	
~ //			
2//			
	Class A	36	
2	Class B	36	
3	Class C	36	
5	Class C		
4	Class D	36	
5	Class E	36	
6	Class F		
7	Class C	26	
1	Class U	30	
8	Class H	36	
Ũ			
9	Class I	36	
10	Class J	36	
т	he Number of	260 Students	
	ne number of	300 Students	
	Population		

 Table 3.3 The Population of the Research

### 3. Sample

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The sample is a smaller group to be analyzed which is drawn from the population. Sugiyono (2019:119) stated that the sample is some part of the total and characteristic that is has of the population. The researcher gave pre-test. The sample of this taken from all an of student of the second semester. One class is an experiment class, it used VARK Strategy and another without using VARK Strategy. The researcher used purposive sampling technique in deciding the sample of this research. The researcher chooses two classes which got the highest score in pre-test.

Table 3.4 Samp	le of the Research
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Class	Number of Students
XI G	34
XI J	34
Total	68

Class VIII A was taken as experiment class which is implemented VARK strategy while VIII C was as control class with traditional teaching strategy. The number of students in the experimental and control classes each amounted to 36 students. Of the 36 students in the sample, only 34 students were in each experimental and control class. This happened because there were students who were absent and the students were permitted to carry out training activities to UKA prepare for the competition.

# C. Operational Definition Of Variables

3.1 Operational Definition of Independent Variables (VARK strategy) Learning strategies that can be used to improve students' reading skills use four learning styles, namely Visual, Auditory, Read/Write, and Kinesthetic.

#### 3.1.1 Indicators

- Visual: Use of images, diagrams, and videos to a. understand text.
- b. Auditory: Use of music, sound, and discussion to understand text.

- Read/Write: Use of written text and writing as an activity to understand the text.
- d. Kinestetics: The use of physical activity and movement to understand text.

3.2 Operational Definition of Dependent Variable (Students' Reading Comprehension)

The students' abilities include understanding and interpreting the text they read.

3.2.1 Indicators

a. Students' ability to understand text structure.

b. Students' ability to identify the main idea.

C. Students' ability to identify important details.

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d. Students' ability to make conclusions.

3.3 Measurement Instruments

3.3.1 Reading Test The types of tests carried out are objective tests in the form of multiple choices and essays aimed at measuring students' reading abilities.

3.3.2 Observation The type of test carried out is a participatory observation test which aims to observe how students are able to read using the VARK strategy.

3.4 Measurement Procedure

3.4.1 Initial Reading Test by Answering Multiple Choice Questions This test is carried out before treatment is carried out. This test also aims to measure students' reading abilities before using the VARK strategy.

3.4.2 Treatment Students in the experimental class were given treatment using the VARK strategy for several weeks, while students in the control class used traditional strategies.3.4.3 Final Reading Test by Answering Multiple Choice Questions This test was carried out after the treatment was carried

out with the aim of measuring students' reading abilities after using the VARK strategy.

## **D. Technique for Collecting Data**

In collecting the data, the researcher did some steps as follows;

3.1 Administering Pre-test

The step before applying VARK strategy in doing research, the researcher gave pre-test to the experimental and control group to know the students' ability in reading. It was given in the beginning of lesson. In this research, the test was administrated in multiple choice form based on the topic in lesson plan that the English teacher uses. The reading test or reading assessment was collected from some sources (English textbook and worksheet that used by English teacher in SMAN 3 Kota Bengkulu). Pre-test is important for getting data about students' ability before receiving the treatment. The pretest in this research C N was reading test.

3.2 Description of the treatment This stage was had teacher in doing the treat This stage was handled by the researcher as a teacher in doing the treatment. Since in this research the researcher divided the classes into two classes is experimental class and control class, the treatment for the two classes is different one each other. The treatment used in the experimental class is that by using VARK Strategy. Meanwhile, the treatment used in the control class is that by using traditional method is role play. The researcher did treatment in six meetings for each experiment and control class.

This research could be carried out effectively, the researcher held 6 meetings, which according to Sugiyono (2018) stated that there were 6 meetings held in the quasi experimental treatment, namely introducing the program and initial measurements, providing treatment or instructions to the experimental group, carrying out practice and training, holding discussions. and reflection, providing further material, and carrying out final measurements and evaluation. 3.3 Administering Post-test The step after applying VARK strategy in ----h. the researcher gave post-test to the -----the students'

The step after applying VARK strategy in doing research, the researcher gave post-test to the experimental and control group to know the students' ability in reading after give treatments. It was given in the ending of research. In this research, the test was administrated in multiple choice form based on the topic in lesson plan that the English teacher uses. Conducting post-test is important for getting data or score the students' after received the treatment.

### **E. Research Instrument**

Instrument has important function in this research. Instrument is one of the significant steps in conducting this research. Arikunto (2019) stated that instrument is a tool or facilities that is used by researcher. Therefore, the researcher must choose some instruments in the process of collecting data. Instrument is a tool to collect a data which is needed in a research. The instrument on this research is reading test which aims to measure students' reading comprehension. The reading test or reading assessment will be collected from some sources (English textbook and worksheet that used by English teacher in SMAN 3 Kota Bengkulu).

Reading comprehension test is the test that used for measuring the students' reading comprehension to the material given. This test also aims to know the students' improvement in their reading comprehension before and after the treatment. It was given at the pre and post treatment. The researcher used multiple choice forms (A B C D E options) since the final test in Senior High School level always in the form of multiple choice questions, and there were thirty items of question for pre-test (experiment and control) and thirty items of question for post-test (experiment and control) that was adapted from English Textbook for grade XI. The assessment rubric is as Table 3. Assesment Rubric follow.

2/////	
True Answer	Score
30	100
29	97
-28	94
27	90
26	87
D E 25 G	84
24	80
23	77
22	74
21	70
20	67
19	64
18	60
17	57
16	54



## F. Technique of Data Analysis

The data in this research was analyzed by using SPSS v.26. It is to calculate the pre-test and post-test result. The procedure for data analysis technique is as follows:

## 1. Normality test

Normality test was used to know whether the data is distributed normally. To know whether the data

have normal distribution or not, the value of  $\alpha = 0.05$  is used as the standard. The hypotheses for testing the normality are as follows:

H<sub>0</sub> : The data is normally distributed

H<sub>1</sub> : The data is not normally distributed

The data is considered normally distributed when p-

value >  $\alpha = 0.05$ 

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2. Homogeneity test

Homogeneity test was used to know the homogenity of variance of the data. In order to know whether the data is homogenous or not, the following steps should be considered:

a. Formulate the hypothesis

From the topic of the research, the hypothesis is formulated as follows:

H<sub>0</sub>: The variances before having treatment are equal H<sub>1</sub>: The variances before having treatment are not equal

b.  $H_0$  is accepted or rejected,  $\alpha = 0.05$  is used.

The variances are considered homogenous when the

p-value> $\alpha = 0.05$ 

Hypothesis Testing 3.

It consists of four steps:

- The research hypothesis are reviewed a.
- T-Count is calculated, b.
- T-table is consulted (2 tailed test  $\alpha$ =0,05) с.

For formula  $A = df = n_1 + n_2 - 2$ ; for formula B,  $n_1$  o

n<sub>2</sub> is whichever is smaller

d. T-count is compared with t-table.

There are two possibilities:

5 If  $t_{count} \ge t_{table}$ ; (sig. p  $\le 0.05$ ) H<sub>1</sub> was accepted and H<sub>0</sub> was rejected If  $t_{count} < t_{table}$ ; (sig. p > 0,05) H<sub>0</sub> was accepted and H1 was rejected

## G. Validity and Reliability

1. Validity

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Validity refers to the extent to which an instrument measured what it claimed to measure (Ary et al, 2019:225). It means that the test was valid when it measures what is supposed to measure. Validity test criteria using SPSS is if significance <0,05, then the question item in the question text is valid. The reseracher only took the valid questions which can be used for instrument of this research. The invalid question was removed from the instrument.

2. Reliability Test 🔨 🕤 🗋 🦒

Reliability refers to our measure repeatedly delivering the same (or near same) results. To know the reliability of instruments used in this research, the researcher tried them out before conducting them into the pretest and posttest. After getting the data, the researcher analyzed them by using SPSS 26. The categorial in reliability test is in the table below.

### Table 3.4

### The Criteria of Reliability

The Reliability Value	The Criteria
0,80 - 1,00	Very High Reliability
0,60 - 0,80	High Reliability
0,40 - 0,60	Moderate Reliability
0,20 - 0,40	Good Reliability
0,00 - 0,20	Low Reliability

(Sugiyono, 2019:176)