

CHAPTER III

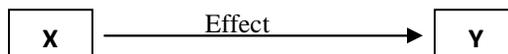
RESEARCH METHOD

A. The Research Design

The type of research was an experimental research that consisted of two variables. Cohen, Manion and Marrison state “an experiment involves making a change in the value of one variable – called the independent variable – and observing the effect of that change on another variable – called the dependent variable.”¹ In this research, the independent variable (X) referred to the use of “Vocab-O-Gram” strategy, and (Y) referred to students’ reading comprehension as dependent variable. The design of variables relationship can be illustrated as follows:

Table III.1

The Design of Variables Relationship



The design of this research was the Quasi-Experimental designs with the Non-Equivalent control group. The design from this research referred to the use of experimental group and control group in giving treatment. Dealing with this, Gay states “the entire classrooms, not individual students, are assigned to

¹Louis Cohen, Lawrence Manion and Keith Marrison, *Research Methods in Education*. Sixth Edition. (New York: Routledge.2007), p.272

treatment. When this situation occurs, there are still a number of designs that provide adequate control of sources of invalidity.”²

In conducting this research, two groups of the first year students at MA Kampar Timur had been participated. The first group was the experiment group (X) treated by using “Vocab-O-Gram” strategy, and the second was the control group (Y) which was treated by using conventional technique. However, the materials given to each group were the same.

In this research, the researcher used pre-test and post-test design. The researcher took two groups in conducting this research; one group was as an experimental group taught by using vocab-o-gram strategy and the other was as a control group taught without using vocab-o-gram strategy. The researcher administered a pre-test to both groups, gave treatment to experimental group only, and then administered a post-test to assess the differences of reading comprehension between the two groups.³ According to Campbell and Stanley, the design of this research can be illustrated as follows⁴:

Table III.2
Pre-test and Post-test Non Equivalent Control Group Design

<i>Class</i>	<i>Pre-test</i>	<i>Treatment</i>	<i>Post-test</i>
<i>Experiment</i>	<i>O₁</i>	<i>X</i>	<i>O₂</i>
<i>Control</i>	<i>O₃</i>	-	<i>O₄</i>

²L.R. Gay and Peter Airasian, *Educational Research Competencies for Analysis and Application*. (New Jersey: Prentice - Hall, 2000), p.394

³Jhon W. Cresswell, *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. (New Jersey: Pearson Education, 2008), p.313

⁴Donald T. Campbell and Julian C. Stanley. *Experimental and Quasi-Experimental Design for Research* (New York: Houghton Mifflin Company, 1963). p.47

Where:

O: Students' reading comprehension in pre-test and post-test of experimental and control classes.

X: Teaching reading by using Vocab-O-Gram strategy.

The researcher would conduct the research for eight meetings included pre-test and post-test. Pre-test referred to students' background knowledge and without a treatment. The strategy would be applied after we gave pre-test for the students.

B. Location and Time of the Research

This research was conducted at MA Kampar Timur. It is located in Kampar Timur district, Kampar regency. It was conducted for four weeks. It was started from April to May 2014.

C. Subject and Object of the Research

The subject of this research was the first year students of the school registered in academic year 2013/2014, while the object of this research was the effect of using Vocab-O-Gram strategy on students' reading comprehension at MA Kampar Timur.

D. The Population and Sample of the Research

The population of this research was the first year students at MA Kampar Timur in academic year 2013/2014. There were 3 groups. The number of the first year students at MA Kampar Timur could be shown in the following table:

Table III.3
The total population of the first year students at MA Kampar Timur
2013-2014

No	Group	Number of Students
1	X ¹	25
2	X ²	25
3	X ³	23
	Total	73

The data above showed the number of population, 73 students. According to Suharsimi Arikunto, if the amount of the subject is less than 100, it is better to take all of the population and if the amount of the subject is more than 100, it is better to take 10-15 or 20-25% of the population.⁵ Based on the reseach design of the reseach, the researcher took two groups as the sample of the reseach. In considering the sample, the researcher used cluster sampling technique because all samples had the same characteristics. According to Gay *et al*, cluster sampling randomly selects groups, not individuals.⁶

All of the sample had the same opportunity to be taken as the representative of all the samples. Furthermore, because they were homogenous, the researcher had selected two groups of students to be sample in this research. It was the students of X¹ as an experimental group and X² as a control group. The following table presented the number of sample:

⁵Suharsimi Arikunto, *Prosedur Penelitian: Suatu Pendekatan Praktik Edisi Revisi VI*. (Jakarta: Rineka Cipta, 2006), p. 134

⁶L.R. Gay and Peter Airasian. *Educational Research Competencies for Analysis and Application*. (New Jersey: Prentice Hall, 2000), p.129

Table III.4
The sample of the first year students at MA Kampar Timur 2013-2014

No	Group	Total
1	X ¹	25
2	X ²	25
	Total	50

E. The Technique of Collecting Data

In this research, the researcher administered test to collect the data. According to Brown, a test is a method of measuring a person's ability, knowledge or performance in a given domain".⁷ The researcher used written test in the form of multiple choices. The test of multiple choices is a test item in which the test taker is presented with a question along with four or five possible answers from which one must be selected.⁸ According to Nation, Multiple Choice questions can focus on details and on more general aspect of the text.⁹ In the other hand, Multiple Choice can be used to measure the students' reading text comprehension.

There were twenty questions for respondents. The questions based on the indicators of reading narrative text comprehension. The indicators consisted of five indicators and each of which had four questions. It can be seen from the blue print of test below:

⁷*Ibid*, p.3

⁸*Ibid*

⁹I. S. P. Nation, *loc. cit.*

Table III.5
Blue Print Test

No	Indicators	Total	Number of Item
1	The students are able to identify the main idea of narrative text.	4 Items	3,6,11,16
2	The students are able to identify the generic structure of narrative text.	4 Items	1,8,12,17
3	The students are able to identify the purpose of narrative text	4 Items	5,7,14,19
4	The students are able to analyze the meaning of certain words on narrative text.	4 Items	4,10,13,18
5	The students are able to identify facts such as the names of characters, the time of the story or the place of the story on narrative text.	4 Items	2,9,15,20
TOTAL		20 Items	20 Items

Based on the table III.3, finding main idea of the text that can be found in items number 3, 6, 11, and 16. Identifying generic structure of narrative text can be seen in items number 1, 8, 15, 19 and 21. Analyzing the meaning of certain words in narrative text is in items number 4, 7, 13, 16 and 23. Identifying the references of certain words is in items number 3,10,14,20 and 25. Finding the factual information of the text can be seen in items number 2, 9, 12, 18 and 22.

1. Validity

Every test should be as valid as the test constructor can make it. The test must aim at providing a true measure of the particular skill in which it is intended to measure.

Heaton states that the validity of a test refers to appropriateness of a given test or any of its component parts as measure of what it is purposed to measure. It means that, the test is valid to the extent that is measured what it is supposed to measure. There are three kinds of validity. They are; content, construct and empirical validity¹⁰. This research used content validity. Content validity refers to whether or not the content of the manifestis right to measure the latent concept that we are trying to measure.¹¹

The test given to students was considered too difficult or too easy. Item difficulty was determined as the proportion of correct responses. This is held pertinent to the index difficulty; it was generally expressed as the percentage of the students who answered the questions correctly. The formula¹² for item difficulty is as follows:

$$P = \frac{\sum B}{N}$$

P : proportion of correct answer= index difficulties

B : the number of correct answer

N : the number of students taking the test

The formula above was used to find out easy or difficult test items that researcher gave to the respondents. The items did not reach the standard value of difficulty were modified. the standard value of the proportion of correct can be seen in the table below:¹³

¹⁰J.B Heaton. *Writing English Language Test*. (New York: Longman Group UK Limited, 1988), p. 159

¹¹Daniel Muijs. *Doing Quantitative Research in Education*. (London: Sage Publications, 2004), p.66

¹²Hartono. *Analisis Item Instrumen*, (Bandung: Zanafa Publishing, 2010), p.38

¹³*Ibid.*

Table III.6
Index Difficulty Level of Instruments

Proportion correct (p)	Item category
P > 0.70	Easy
0.30 P 0.70	Average
P < 0.30	Difficult

The facility value under 0.30 is considered difficult and above 0.70 is considered easy. The items categorised in the level of easy or difficult ($p < 0.30$ or $p > 0.70$) should be modified. Therefore, the standard value of the proportion of correct is between 0.30 and 0.70.

2. Reliability

A test must be reliable as measuring instrument. Reliability is a necessary characteristic of any good test. Heaton explains that reliability is of primary importance in the use of public achievement, proficiency and classroom tests.¹⁴ The mean and standard deviation of the test must be known for obtaining the reliability of the test. To know the reliability of the test, the researcher used the formula KR-20:¹⁵

$$r_{ii} = \frac{k}{k-1} \frac{s^2 - \sum pq}{s^2}$$

Where:

r_{ii} : Instrument reliability

k : Number of items

¹⁴ Hartono, *Op.cit.* p.159

¹⁵ Suharsimi Arikunto, *Prosedur Penelitian: Suatu Pendekatan Praktek*, (Jakarta: PT Rineka Cipta, 2006),p.187

S : Deviation standard

p : The proportion of the students making correct answers was divided by the total number of the students

q : The proportion of the students making incorrect answers was divided by the total number of the students.

F. The Technique of Data Analysis

1. Normality Test

Before analyzing the data by using t-test formula, the researcher had to find out the normality test of the data. The normality test of the data was analyzed by using Kolmogorov-Smirnov technique with SPSS 16 version.

Analysis:

H_a : population with normal distribution

H_o : population with not normal distribution

If the probability > 0.05 H_a was accepted

If the probability < 0.05 H_o was rejected

2. Analysis Data t-test

The technique of data analysis used in this research was T-test formula by using SPSS (Statistical Package for the Social Sciences) 16 Version. For analyzing the data, the researcher used the scores of post-test of experimental as well as control group.

The t-test was obtained by considering the degree of freedom (df) = $(N_1+N_2)-2$. Statistically the hypotheses are:

$H_0: t_o < t\text{-table}$

$H_a: t_o > t\text{-table}$

H_0 is accepted if $t_o < t\text{ table}$ or there is no significant effect of using vocab-o-gram on students' reading narrative text comprehension.

H_a is accepted if $t_o > t\text{ table}$ or there is a significant effect of using vocab-o-gram strategy on students' reading narrative text comprehension.