CHAPTER III

RESEARCH METHOD

A. Research Design

The design of this research was an experimental research. According Creswell (2008), "experiment is testing an idea (practice) to determine whether it influences an outcome or dependent variable". This design was referred to as quasi-experimental design. According to Muijs (2004), "quasi-experimental designs are meant to approximate as closely as possible the advantages of true experimental designs where the problems mentioned above occur". Research design used in this research was Non Equivalent Experimental, which involves two groups (experimental and control groups) of the second year students of senior high school 1 Kampar , both of them were given a pre-test and post-test in which both groups did not have pre-experimental sampling equivalent. Before doing the experiment, the students were given the pre-test. The experimental group got treatment and the control group did not get the treatment. After the treatment, a post-test was given to the students. According to Creswell (2012) the model of research design can be illustrated as follows:

Table III.1
Research Design

Group	Pre-test	Treatment	Post-test
Experimental	O_1	X	O_2
Control	O_3	Ø	O_4

Where:

O_1 = Pre-test for experimental and control group.

O_2 = Post-test for experimental and control class.

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O_3 = Pre-test for experimental and control group.

O_4 = Post-test for experimental and control group.

X   = Treatment by using Three Column Notes Strategy.

Ø   = Treatment without using Three Column Notes Strategy.

B. Location and the time of the Research

The research was conducted at Senior High School 1 Kampar that is located at Air Tiris, Kampar Regency. The research was conducted from January to February 2017.

C. Subject and Object of the Research

The subject of the research was the second-year students at Senior high school 1 Kampar, and the object of this research was using Three Column Notes strategy and students' reading comprehension.

D. Population and Sample of the Research

1. Population

The population of this research was the second year students at Senior High School 1 Kampar. The students were divided into 8 classes. The number of the second year students of Senior High School 1 Kampar was 256 students.

Table III.2
The Total Population of the Second-Year Students at State
Senior High School 1 Kampar

No	Class	Number of Students
1	2 MIPA 1	32
2	2 MIPA 2	32
3	2 MIPA 3	32
4	2 MIPA 4	31
5	2 IPS 1	33
6	2 IPS 2	32
7	2 IPS 3	32
8	2 IPS 4	32
Total Population		256

2. Sample

Based on the design of the research above, the population in this school was large enough to be all taken as a sample of the research. Furthermore, because they were homogenous or because all samples have the same characteristic, the writer used random sampling technique, especially cluster random sampling to choose the classes as sample. According to Gay and Peter Airasian (2000), "random sampling is the process of selecting a sample in such a way that all individuals in the defined population have an equal and independent chance of being selected for the sample.". They also stated that Cluster sampling randomly select the groups, not individuals.

In this research, the writer took 2 of 8 classes as the samples by using lottery. It means that the writer wrote down 8 classes of the second year students at State Senior High School 1 Kampar in a small piece of paper for each class. Then, the writer coiled up the papers into small scroll and took only two small scrolls. As the result, the experimental class was 2 IPA 2, while the control class was 2IPA1. The students who involved in this research were 32 students for each class.

E. Technique of Collecting Data

In this research the writer used test to collect the data; pre-test and post-test to the students. The writer used multiple choices technique that was designed by using four options and the respondent chose one as the correct answer. There were 25 questions that should be done by the students in 2x45 minutes. The test was started by giving try out in order to find validity and reliability of the test.

The test was divided into two tests;

1 Pre-test was given to the students before treatment of the strategy to both of classes experimental class and control class. This test was used to measure basic reading comprehension of Analytical Exposition text.

2 Post-test was given to both of group after doing the treatment of the strategy to the experimental

F. The Validity and Reliability of the test

1. Test Blueprint

The instrument of reading comprehension in analytical exposition text in this research included some aspects. They were about finding out the main idea , Locate the meaning of vocabulary in the context, Identify generic structure, Finding communicative purpose, Finding language features .The total of questions was 5 items. The questions' form was multiple choices. So, the students had to choose the best choice according to themselves. This instrument also helped there searcher ensures that some of the questions matching to the objective of the research.

For further information about the instruction of the text, the writer shows the blueprint of both tests as follow:

Table III.3
The Blueprint of the Test

Number	Indicator of items	Number of items	Items number
1	Identify main idea	5	1,6,11,16,21
2	Locate the meaning of vocabulary in the context	5	2,7,12,17,22
3	Identify generic structure	5	3,8,13,18,23
4	Finding communicative purpose	5	4,9,14,19,24
5	Finding language features	5	5,10,15,20,25

Finally, the pre-test and post-test of the experimental class were compared to the pre-test and post-test of control class. According Suharsimi Arikunto (2009), there are some categories to evaluate the students' comprehension in reading text. The students' score can be seen from the table below:

TABLE III.4
Classification of Students' Scores

The Score of Reading Comprehension Level	Categories
80 – 100	Very Good
66 – 79	Good
56 – 65	Enough
40 – 55	Less
30 – 39	Fail

2. **Validity**

Before carrying out a test, it is necessary to know the validity of instruments. According to Hughes (2003), a test is said to be valid if it measures accurately what it is intended to measure. It means that a test is valid if it really measures what we actually want to measure.

In this research, the writer wanted to measure the students' reading comprehension. Therefore, to measure the validity of test, the researcher used content validity. Muijis (2004) also added content validity refers to whether or not the content of the manifest variables (e.g. items of a test or questions of a questionnaire) is right to measure the latent concept (self-esteem, achievement, attitudes, etc) that we are trying to measure.

Finally, the writer determined the validity by referring to the material that was given to the students based on the students' text book. In other words, the test given to the students was based on the material that they had learned. Sumanto (2014) stated the formula for validity is as follows:

$$r_{pbis} = \frac{M_p - M_t}{s_{dt}} \sqrt{\frac{p}{q}}$$

Where:

r_{pb} : point-biserial correlation coefficient

M_p : whole-test mean for students answering item correctly

M_t : whole-test mean score

S_{dt} : standard deviation for whole test

p : proportion of students answering correctly

q : proportion of students answering incorrectly

The formula above was used to find out the validity test items that writer gave to the respondents. The standard value of validity is $r_{pb} > r_{table}$

Based on the try out result, it was determined that all of the items were valid. The result of try out is as follows:

Table III. 5
The Item Validity of Try Out

Item Number	r-item	r-table	Result
1.	0.34	0.24	Valid
2.	0.41	0.24	Valid
3.	0.38	0.24	Valid
4.	0.39	0.24	Valid
5.	0.41	0.24	Valid
6.	0.37	0.24	Valid
7.	0.42	0.24	Valid
8.	0.41	0.24	Valid
9.	0.43	0.24	Valid
10.	0.44	0.24	Valid
11.	0.38	0.24	Valid
12.	0.43	0.24	Valid
13.	0.41	0.24	Valid
14.	0.42	0.24	Valid
15.	0.36	0.24	Valid
16.	0.38	0.24	Valid
17.	0.39	0.24	Valid
18.	0.37	0.24	Valid
19.	0.38	0.24	Valid
20.	0.33	0.24	Valid
21.	0.36	0.24	Valid
22.	0.41	0.24	Valid
23.	0.38	0.24	Valid
24.	0.35	0.24	Valid
25.	0.27	0.24	Valid

3. **Reliability**

A test must be reliable as measuring instrument. Reliability is a necessary characteristic of any good test. Brown (2004) said that a reliable test is consistent and dependable. It means the test should be similar result when the tester gives the same test to the same respondent on two different occasions.

There are some factors affecting the reliability of a test, they are:

a. The extent of sample of material selecting for testing.

b. The administration of the test, clearly this is an important factor in deciding reliability.

According to Grant Henning (1987), reliability is thus a measure of accuracy, consistency, dependability, or fairness of scores resulting from administration of a particular examination. If reliability is associated with accuracy of measurement, it follows that reliability will increase as error measurement made to diminish. We actually quantify reliability so that we can be aware of the amount of error presented in our measurement and the degree of confidence possible in score obtained from the test.

Then, Tinam Bunan in Ida Maulina (2005) stated that the reliability for good classroom achievement tests is expected to exceed 0.0 and closed 1.00. He states that reliability of test is considered as follows:

0.00-0.20   : Reliability is low

0.21-0.40   : Reliability is sufficient

0.41-0.70   : Reliability is high

0.71- 1.0   : Reliability is very high

In this research, the writer used software SPSS 23.0 version to calculate the reliability of test. The following steps were how to get the result data based on SPSS 23.0 for windows-statistical software:

a) Open the student test file.

b) From the menu of SPSS, click *Analyze* and then click sub menu *Scale*.

c) From the menu click your variables, and press the narrow button.

d) From *statistics*, click item and scale, at summaries; click means, and then click *ok* to end this process and you will see the output data of SPSS automatically.

Then, the result was shown in the output table. The output can be seen as follows:

Case Processing Summary

		N	%
Cases	Valid	64	100.0
	Excluded[a]	0	.0
	Total	64	100.0

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

Reliability Statistics

Cronbach's Alpha	N of Items
.724	25

The reliability of test was 0.724. It is categorized into very high reliability level.

G. Technique of Data Analysis

In order to find out whether there was or not a significant different between using and without using Three Column Notes Strategy on students' reading comprehension, data of this research were analyzed statistically. In analyzing the data, the writer used statistical method that was independent samples t-test formula by using SPSS.23.0 version. According to Pallant (2010), an independent samples t-test is used when you want to compare the mean score, on some *continuous* variable, for *two* different groups of

participants. So, the researcher used independent samples t-test to compare the mean score in two different groups; control class and experimental class.

After finding the difference, the writer found out the effect size of the phenomenon. Pallant (2010) stated that effect size statistics provides an indication of the magnitude of the differences between your groups (not just whether the difference could have occurred by chance). The effect size statistic used in this research was eta squared. For t-test, SPSS does not provide eta squared values. The formula of eta squared is as follows:

$$\eta^2 = \frac{t^2}{t^2 + (n_1 + n_2 - 2)}$$

Where:

η^2 : Eta Square

t : t obtained

n_1 : The number of experimental class

n_2 : The number of control class