

CHAPTER III

RESEARCH METHOD

A. Research Design

The type of this research is an experimental research. Experiment is you test an idea (or practice or procedure) to determine whether it influences the outcome or the dependent variable.¹ Gay and Airaisian said that, experimental research is “the only type of the research that can test hypothesis to establish cause and effects relationship”.² The essential feature of experimental research is that investigators deliberate control and manipulate the condition which determine the events, in which they are interested, in introducing and intervention and measuring the difference that it makes. So, in this research the writer practiced the Common (and Uncommon) Denominators strategy to the eleventh grade students at Senior High School of 3 Tapung Kampar to determine whether it influenced the students’ reading comprehension.

The design of this research was quasi-experimental design that involved two groups; a control group and an experimental group. The kind of quasi-experimental was Non-equivalent control group that consisted of pre-test, treatment, and post-test. The experimental group was treated by using Common (and Uncommon) Denominators strategy while the control group was treated as usual without using Common (and Uncommon) Denominators strategy. In this research, the researcher taught the experimental class given treatments during six

¹ Jhon. W. Cresswell. *Educational Research: Planning, conducting, and Evaluating Quantitative And Qualitative Research*. (New Jersey: Pearson education, 2008). P.299

² L.R. Gay and Peter Airasian. *Educational Research Competencies for Analysis and Application. Six Ed.* (New Jersey: Prentice-hall, Inc, 2000). P.367

meetings. In this research, the pre-test and post-test were compared in order to determine the effect of using Common (and Uncommon) Denominators strategy on students' reading comprehension. The design of this research can be illustrated as follows:

Table III.1

Research Design

Group	Pre-test	Treatment	Post-test
Experimental	T	X	T1
Control	T	-	T2

Where:

T : Pre-test for Experimental and Control Class

X : doing particular treatment

- : Without particular treatment

T1 : Post-test for Experimental Class

T2 : Post-test for Control Class

A. Location and Time of The Research

The research was conducted at Senior High School 3 Tapung Kampar. It is located in Garuda Street, Petapahan Jaya Tapung, Kampar, RIAU. The time of the research was conducted on April 2014.

B. The Subject and the Object of the Research

1. The Subject of the Research

The subject of the research was the eleventh grade students at Senior High School of 3 Tapung Kampar in the academic year of 2013/2014.

2. The Object of the Research

The object of the research was the effect of using Common (and Uncommon) Denominators strategy on students reading comprehension.

C. The Population and Sample of The Research

1. The Population of the Research

The population of this research was the students of the eleventh grade at Senior High School of 3 Tapung Kampar in 2013-2014 academic years. There were 4 classes which consisted of 2 classes for IPA and 2 classes for IPS. The number of the eleventh grade students at senior high school 3 Tapung Kampar was 136 students'.

Table III.2

The Population of the Eleventh Grade Students at Senior High School 3

Tapung Kampar

No	Classes	Population		Total
		Female	Male	
1.	XI IPA 1	17	15	32
2.	XI IPA 2	20	12	32
3.	XI IPS 1	28	9	37
4.	XI IPS 2	24	11	35
Total				136

2. Sample of the Research

Based on the total population above, the writer took a sample by using cluster sampling technique. According to Gay et al, cluster sampling randomly selects groups, not individuals.³ Therefore, the writer took two classes as a sample: the students of XI IPA 1 as an experimental class and XI IPA 2 as control class.

³ *ibid*, p. 129

Table III.3**The Sample of the Eleventh Grade Students at Senior High School 3 Tapung****Kampar**

No	Classes	Total
1.	XI IPA 1	32
2.	XI IPA 2	32
Total		64

D. Technique of Collecting The Data

In this research, the writer used test as instrument to collect data. The test was used to measure the students' reading comprehension in Hortatory Exposition text. The test was done twice; the first was pre-test given before treatment and the second test was given after giving the treatment (for experimental class and no treatment for control class) intended to obtain students' reading comprehension of the eleventh grade at senior high school 3 Tapung Kampar. The type of the test was multiple choices test. After doing the test, the writer then analyzed the total score from the result of the test. The procedures of collecting data were as follows:

1. Procedures of collecting data for experimental group

a) Pre-test

The pre-test was used to measure the students' reading comprehension on hortatory exposition text before giving the treatment.

b) Treatment

The treatment was conducted toward experimental group/class by using Common (and Uncommon) Denominators strategy applied for six meetings.

c) Post-test

After conducting the treatment, the post-test was administered and analyzed as final data of this research.

2. Procedures of collecting data for control group

a) Pre-test

The pre-test in the control class was used to measure the students' comprehension on hortatory exposition text.

b) No treatment

In this research, the researcher did not give treatment to control class.

c) Post-test

The post-test was also given to control class the same as experimental class and the result was analyzed and used as final data for this research.

The score is be classified as follow:⁴

Table III.4
The Score of Classification

NO	SCORES	CATEGORIES
1.	80-100	Very good
2.	66-79	Good
3.	56-65	Enough
4.	40-55	Less
5.	0-39	Fail

3. Validity of the Test

Before the test was given to the sample of this research, the writer tried out the test items was class XI IPS 2 of the eleventh grade at senior high school 3 Tapung Kampar. To know the test given to the students was considered not too difficult or not too easy, the writer used a formula of item index difficulty. According to Arikunto the test is accepted if the degree of index difficulty is between 0.30 – 0.70.⁵ It was determined by finding the index difficulty of each item. The formula for item index difficulty is as follows:⁶

$$P = \frac{B}{JS}$$

Where:

⁴ Suharsini Arikunto, *Dasar-Dasar Evaluasi Pendidikan* (Jakarta: PT. Rineka Cipta, 2009), p. 245

⁵ Ibid, p.245

⁶ Ibid.,p. 208.

P : Index of difficulty

B : The number of correct answer

JS : the number of students

The difficulty level of an item shows how easy or difficult a particular item in a test is, the items that do not reach the standard of index difficulty are excluded from the test and they are changed by new items that are appropriate.

The standard of index difficulty used is < 0.30 and > 0.70 . It means that an item is accepted if the index difficulty is between 0.30-0.70 and it is rejected if the index difficulty is less than 0.30 (the item is too difficult) and over than 0.70 (the item is too easy). The proportion of correct is represented by “p”, whereas the proportion of incorrect is represented by “q”.

The data were obtained from the post test evaluated in 5 components:

- a. The students are able to find the main idea of Hortatory Exposition text.
- b. The students are able to identify the reference of Hortatory Exposition text.
- c. The students are able to identify the generic structure of Hortatory Exposition text.
- d. The students are able to identify the language features of Hortatory Exposition text.
- e. The students are able to identify the meaning of the words, synonym or antonym of Hortatory Exposition text.

Table III.5**THE BLUE PRINT OF THE TEST**

THE BLUE PRINT OF THE TEST		
1.	Identifying main idea of the test	1, 6, 11, 12
2	Identifying reference of the test	4, 9, 15, 18
3	Identifying generic structure of the test	2, 5, 10, 16, 17
4	Identifying language features of the test	8, 14, 20
5	Identifying the meaning of the words, synonym or antonym of the test	3, 7, 13, 19

The calculation of item difficulty can be seen from the following table:

Table III. 6

**The Students are able to find the Main Idea of the Hortatory
Exposition text**

Variable	Identifying the main idea of the text				N
Item no	1	6	11	12	30
Correct	15	17	14	13	
P	0.50	0.57	0.47	0.43	
Q	0.50	0.43	0.53	0.57	

The table III.5 above shows the portion of correct answer. For item number 1 shows the proportion of correct 0.50, item number 6 shows the proportion of correct 0.57, item number 11 shows the proportion of correct 0.47, item number 12 shows the proportion of correct 0.43. Based on the standard of index difficulty “p” < 0.30 and > 0.70 , it shows that item difficulties in average of each item for identifying the main idea of Hortatory Exposition text were accepted.

Table III.7

**The students are able to identify the reference of Hortatory
Exposition text**

Variable	Identifying the reference of the text				N
Item no	4	9	15	18	30
Correct	17	15	16	16	
P	0.57	0.50	0.53	0.53	
Q	0.43	0.50	0.47	0.47	

The table III.6 above shows the portion of correct answer. For item number 4 shows the proportion of correct 0.57, item number 9 shows the proportion of correct 0.50, item number 15 shows the proportion of correct 0.53, item number 18 shows the proportion of correct 0.53. Based on the standard of index difficulty “p” < 0.30 and > 0.70 , it shows that item difficulties in average of each item for identifying the reference of the text were accepted.

Table III.8

**The students are able to identify the generic structure of Hortatory
Exposition text**

Variable	Identifying the generic structure of the text					N
Item no	2	5	10	16	17	30
Correct	14	15	17	21	15	
P	0.47	0.50	0.57	0.70	0.50	
Q	0.53	0.50	0.43	0.30	0.50	

The table III.7 above shows the portion of correct answer. For item number 2 shows the proportion of correct 0.47, item number 5 shows the proportion of correct 0.50, item number 10 shows the proportion of correct 0.57, item number 16 shows the proportion of correct 0.70, item number 17 shows the proportion of correct 0.50. Based on the standard of index difficulty “p” < 0.30 and \geq 0.70, it shows that item difficulties in average of each item for identifying the generic structure of the text were accepted.

Table III.9

**The students are able to identify the language features of Hortatory
Exposition text.**

Variable	Identifying the language features of the text			N
Item no	8	14	20	30
Correct	14	15	16	
P	0.47	0.50	0.53	
Q	0.53	0.50	0.53	

The table III.8 above shows the portion of correct answer. For item number 8 shows the proportion of correct 0.47, item number 14 shows the proportion of correct 0.50, item number 20 shows the proportion of correct 0.53. Based on the standard of index difficulty “p” < 0.30 and > 0.70, it shows that item difficulties in average of each item for identifying the language features of the text were accepted.

Table III.10

The students are able to identify the meaning of the words, synonym or antonym of Hortatory Exposition text.

Variable	Identifying the meaning of the words, synonym or antonym of the Text				N
Item no	3	7	13	19	30
Correct	17	15	16	16	
P	0.57	0.50	0.53	0.53	
Q	0.43	0.50	0.47	0.47	

The table III.9 above shows the portion of correct answer. For item number 3 shows the proportion of correct 0.57, item number 7 shows the proportion of correct 0.50, item number 13 shows the proportion of correct 0.53, item number 19 shows the proportion of correct 0.53. Based on the standard of index difficulty “p” < 0.30 and > 0.70, it shows that item difficulties in average of each item for identifying the meaning of the words, synonym or antonym of the Text were accepted.

4. The Reliability of the Test

According to H. Douglas Brown⁷, reliability has to be done with accuracy of measurement. This kind of accuracy is reflected in the obtaining of similar result when measurement is repeated on different occasions or with different instruments or by different persons. The characteristic of reliability is sometimes termed consistency. It means that, we can say the test is reliable when an examinee's result are consistent on repeated measurement. To obtain reliability of the test, the Mean and Standard Deviation of test must be known.

The categories of reliability test are as follow:

1. 0.0-0.20 = reliability is low
2. 0.21-0.40 = reliability is sufficient
3. 0.41-0.70 = reliability is high
4. 0.71-1.0 = reliability is very high

To know the reliability of the test, the writer used the following formula:

$$KR_{20}: r_{ii} = \frac{n}{n-1} \frac{S^2 - pq}{S^2}$$

Where:

N: Number of items in the instrument

P :Proportion of subjects who answered the item correctly

⁷ H. Douglas Brown. *Language Assessment: Principles and Classroom Practices*. (New York: Pearson Education Inc, 2003) pp. 19-27

Q : Proportion of subjects who answered the item with the wrong

pq : The multiplication result between p and q

S^2 : Total variance

We must first calculate the total variance before:

N : number of respondents

$$.S^2 = \frac{\sum X^2 - \frac{\sum X^2}{N}}{N}$$

$$.S^2 = \frac{3582 - \frac{314^2}{30}}{30}$$

$$.S^2 = \frac{3582 - 3286.53}{30}$$

$$.S^2 = \frac{295.47}{30}$$

$$.S^2 = 9.85$$

$$.r_{ii} = \frac{n}{n-1} \frac{S^2 - pq}{S^2}$$

$$.r_{ii} = \frac{20}{20-1} \frac{9.85 - 4.93}{9.85}$$

$$.r_{ii} = 1.05 \frac{4.92}{9.85}$$

$$.r_{ii} = 1.05 \cdot 0.50$$

$$.r_{ii} = 0.53$$

The reliability coefficients for good identified kinds of structure text and reading comprehension test were expected to exceed 0.0 and closed 1.00.

Based on the result of the reliability test (r_{ii}) above, it can be concluded through the following categories:⁸

1. 0.0-0.20 = Reliability is low
 2. 0.21-0.40 = Reliability is sufficient
 3. **0.41-0.70 = Reliability is high**
 4. 0.71-1.0 = Reliability is very high
- ❖ $r_{ii} = 0.53$ **Reliability is high**

The reliability was accepted which was $0.41 < 0.53 < 0.70$ or higher than 0.41 and lower than 0.70. It also can be stated that **reliability is high**.

E. Technique of Data Analysis

In order find out whether or not there was a significant effect of using Common (and Uncommon) Denominators strategy on students' reading comprehension, the data were analyzed statistically. In analyzing the data, the writer used the post-test score of experimental class and control class. The data were analyzed by using T-test (independent sample t-test) and it was calculated by using software SPSS 16.0 version.

The t-table was compared with t-observation to see whether or not there was significant difference between the mean score in both experimental and control classes.

⁸ Suharsini Arikunto, *Dasar-Dasar Evaluasi Pendidikan* (Jakarta: PT. Rineka Cipta, 2009), p. 218

Statistically hypothesis:

$$H_0 = t_o < t \text{ table}$$

$$H_a = t_o > t \text{ table}$$

1. H_0 is rejected if $t_o < t$ table or there is no significant difference between students' reading comprehension who are taught by using Common (and Uncommon) Denominators strategy and those who are taught without using Common (and Uncommon) Denominators strategy.
2. H_a is accepted if $t_o > t$ -table or there is significant difference between students' reading comprehension who are taught by using Common (and Uncommon) Denominators strategy and those who are taught without using Common (and Uncommon) Denominators strategy.