

CHAPTER III

RESEARCH METHODOLOGY

A. Research Design

In this research, the writer used an experimental research t, precisely quasi experimental research. Experiment is testing an idea (practice) to determine whether it influences an outcome or dependent variable.¹ The design of this research is quasi experimental research which is Nonequivalent Control Group Design. It is a research which is aimed to search whether there is or no effect of treatment which has been done to the experimental subject without random assignment.² Furthermore, Gay and Peter Airasian states that quasi-experimental design is used when the researcher keeps the students in existing classroom intact and the entire classrooms are assigned to treatments.³

This research consists two variables, they are: Independent variable (variable X) refers to the effect using Concept Attainment Strategy and Dependent variable (variable Y) refers to reading comprehension. In conducting this research, the writer used two classes. The first class was used as experimental class which was taught by using Concept Attainment Strategy and the second class was used as control class which was taught without by using Concept Attainment Strategy. Both experimental and control groups were treated by the same test.

According to Cresswell the type of this research can be designed as follows:⁴

TABLE III.1
The Research Design

¹John. W. Creswell. *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. (New Jersey: Pearson Education, 2008). p.299

²Sugiyono. *Metode Penelitian Administrasi; dilengkapi dengan Metode R&D*. (Bandung: Alfabeta. 2010). p.89

³L. R. Gay and Peter Airasian. *Educational Research Competencies for Analysis and Application. Six Ed.* (New Jersey: Prentice- Hall, 2000). p.394

⁴John.W. Creswell.,Op.Cit.,p.299

NO	Group	Treatment	Test
1	Control group	No treatment	Pre-test and Post-test
2	Experimental group	Receiving treatment	Pre-test and Post-test

B. Location and Time of the Research

The location of this research was at MA Hidayatullah Lubuk Dalam at jalur 2 street. This research was conducted from January until February 2014.

C. Subject and Object of Research

The subject of this research was eleven grade students at MA Hidayatullah Lubuk Dalam and the object was the use of Concept Attainment Strategy and students' reading comprehension at eleventh grade students of MA Hidayatullah Lubuk Dalam.

D. The Population and Sample of the Research

The population of this research was eleventh grade students at MA Hidayatullah Lubuk Dalam, which consisted of two classes they were X IPS 1 (20 students), X IPS 2 (20 students). Based on the data above, the population counted 40 students. Then, XI IPS 1 become Experimental group and XI IPS 2 as Control group.

TABLE III.2

**The Total Population and Sample of Social Department at eleventh Grade
Students of MA Hidayatullah Lubuk Dalam**

No	Class	Total Population	Total Sample
1	IPS 1	20	20
2	IPS 2	20	20
Total		40	40

The sample of this research is total sampling. Total sampling is a sampling technique in which amount equal to the population sample, reason for taking total sampling because according to Sugiyono the population less than 100 whole study population sampled everything.⁵

E. The Technique of Collecting Data

In getting the data which were needed to support this research, the writer used observation and test. Observation was used to get the data about implementation of Concept Attainment strategy in teaching reading. In this case, the writer used observation checklist and asked one of the English teacher at MA Hidayatullah Lubuk Dalam as an observer. Test was used to collect the data on student reading comprehension by using Concept Attainment strategy. According to Gay, test is designed to provide information about how well test takers have learned what they have been taught in school.⁶ In this case, there are two tests; pre-test which was given before the treatment and post-test was given after the treatment. Kind of the test in this research was multiple choices. Multiple choices technique is a technique that is designed by using four choices and participant choose one correct answer⁷. And the writer used multiple choices technique that consist of 20 items. This technique can assess the students' reading comprehension. All of the items were tried out to all of the students in order to know validity and reliability of the test. The advantages of multiple choice were cheating is likely to be more difficult and guessing will (or should) contribute less to test scores. Then, the test can be described from the blue print below and the classifications of the students' score are as follows⁸:

TABLE III.3

⁵ Anas Sudijono. (2007). *Pengantar Statistik Pendidikan*. Jakarta: Raja Grafindo Persada.

⁶ L. R. Gay and Peter Airasian. *Op.Cit.*, p.154

⁷ Arthur Hughes. *Testing for language Teachers, Second Edition*. London: Cambridge University press, 2003.P.143

⁸ Anas Sudijono. *Pengantar Statistic Pendidikan*. (Jakarta: PT. Rafindo Persada, 2007), p. 32

The classification of students' score

Score	Categories
80-100	Very good
70-79	Good
60-69	Enough
50-59	Less
0-49	Fail

TABLE III.4
Blue Print of Reading Comprehension

No	Indicators	Number of items	Total
1	Identify specific information of the text	4,10,11,16	4
2	Identify main idea	1,6,12,17	4
3	Identify generic structure	3,9,13,19	4
4	Infer meaning of an unknown of the text	2,7,14,18	4
5	Making inferences	5,8,15,20	4
	Total		20

1. Validity

The test used for testing students' reading comprehension had to have validity and reliability. Before the tests were given to the sample of the research, both of the tests were

tried out to 20 students of eleven grade. The purpose of the try out was to obtain validity and reliability. The test is said to be valid if it measures accurately what it is intended to measure⁹. It was determined by finding the difficulty level of each item. The formula of item difficulty is as follows:

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

Where:

P : index of difficulty

B : the number of correct answer

JS : students taking the test

The formula above was used to find out the level of difficulty of each item that researcher gave to respondents. The items that did not reach the standard of difficulty were excluding from the test and they were changed with the new appropriate items. Based on the standard level of difficulty used, the item that is accepted if the level of difficulty is between 0.30-0.70 and it is rejected if the level of difficulty is below 0.30 and over 0.70. then the proportion of correct answer is represented by "p", whereas the proportion of incorrect answer is represented by "q". It can be seen from the following tables:

TABLE III.5
The Students are Able to Identify specific information of the text

Variable	Identify specific information				N
Item no	1	8	11	16	20
Correct	9	8	12	14	
P	0.45	0.4	0.6	0.5	
Q	0.55	0.6	0.4	0.5	

Based on the table above, the item number 1, 8, 11, and 16 were to Identify specific information from 20 questions. The proportion of correct answer for item number 1 shows

⁹ Ibid, p. 26

the proportion of correct 0.45, item number 8 shows the proportion of correct 0.4, item number 11 shows the proportion of correct 0.6, item number 16 shows the proportion of correct 0.5. Based on the standard level of difficulty” <0.30 and” >0.70, the items were not too easy and not too difficult, it is pointed that the difficulty in average of each item number for Identify specific information is accepted.

TABLE III.6
The Students are Able to Identify main idea

Based on the item number were to identify questions. The

Variable	Identify main idea				N
Item no	2	6	12	17	20
Correct	10	11	8	11	
P	0.5	0.55	0.4	0.55	
Q	0.5	0.45	0.6	0.45	

the table above, 2, 6, 12, and 17 main idea from 20 proportion of

correct answer for item number 2 shows that the proportion of correct 0.5, item number 6 shows that proportion of correct 0.55, item number 12 shows that the proportion of correct 0.4, item number 17 shows that the proportion of correct 0.55. based on the standard level difficulty”p”<0.30 and”q”>0.70, the items were not too easy and not too difficult, it is pointed out that the difficulty in average of each item number for identify main idea is accepted.

TABLE III.7
The Students are Able to Identify generic structure

Variable	Identify generic structure				N
Item no	4	9	15	18	20
Correct	9	11	9	10	
P	0.45	0.55	0.45	0.5	
Q	0.55	0.45	0.55	0.5	

Based on the table above, the items number 4, 9, 15, and 18 were to identify generic structure from 20 questions. The proportion of correct answer for item number 4 shows that the proportion of correct 0.45, item number 9 shows that the proportion of correct 0.55, item

number 15 shows that proportion of correct 0.45, item number 18 shows that the proportion of correct 0.5. Based on the standard level of difficulty " $p < 0.30$ and " $q > 0.70$ ", the items were not too easy and not too difficult, it is pointed out that the difficulty in average of each item number for identify generic structure is accepted.

TABLE III.8
The Students are Able to Find Infer meaning of an unknown of the text

Variable	Infer meaning				N
Item no	3	7	13	19	20
Correct	8	11	9	8	
P	0.4	0.55	0.45	0.4	
Q	0.6	0.45	0.55	0.6	

Based on the table above, the items number 3, 7, 13, and 19 were to find infer meaning from 20 questions. The proportion of correct answer for item number 3 shows the proportion of correct 0.4, item number 7 shows the proportion of correct 0.55, item number 13 shows the proportion of correct 0.45, item number 19 shows that the proportion of correct 0.4. based on the standard level of difficulty " $p < 0.30$ and " $q > 0.70$ ", the items were not too easy and not too difficult, it is pointed out that the difficulty in average of each item number for infer meaning is accepted.

TABLE III.9
The Students are Able to Making inferences

Variable	Making inferences				N
Item no	5	10	14	20	20
Correct	10	10	8	10	
P	0.5	0.5	0.4	0.5	
Q	0.5	0.5	0.6	0.5	

Based on the table above, the items number 5, 10, 14, and 20 were to making inferences from 20 questions. The proportion of correct answer for item number 5 shows the proportion of correct 0.5, item number 10 shows the proportion of correct 0.5, item number

14 shows the proportion of correct 0.4, item number 20 shows that the proportion of correct 0.5. based on the standard level of difficulty "p"<0.30 and">0.70, the items were not too easy and not too difficult, it is pointed out that the difficulty in average of each item number for making inferences is accepted.

2. Reliability

According to Douglas Brown, a reliable test is consistent and dependable¹⁰. It also has accuracy of measurement, it means that obtaining similar result when measurement is on different occasions or with different person or by different instruments. The characteristic of reliability is sometimes termed consistency. It means that the test is reliable when examiners results are consistent on repeated measurement.

To obtain the reliability of the test given, the researcher used Kuder-Richardson (K.R 20) and the formula as follows¹¹:

$$\text{KR 20: } r_i = \frac{k}{(k-1)} \frac{s_t^2 - \sum p_i q_i}{s_t^2}$$

Where:

K : number of items in the instrument

Pi : proportion of subject who answered the item correctly

Qi : proportion of subject who answered the item wrong (1-pi)

piqi : the multiplication result between p and q

S_t² : total variance

Firstly the writer calculated the total of variance

Where:

¹⁰ H. Douglas Brown. *Language Assessment: Principles and Classroom Practices*. (San Francisco: Pearson Longman, 2003), P. 20

¹¹Sugiyono. *Statistika Untuk Penelitian*. (Bandung: Alfabeta, 2011), P. 359

TABLE III.10
Descriptive Statistics of Reliability

	N	Minimum	Maximum	Mean	Std. Deviation
Tryout	20	30	70	47.75	8.807
Valid N (listwise)	20				

$$r_i = \frac{k}{(k-1)} \frac{s_{t^2} - \sum p_i q_i}{s_{t^2}}$$

$$r_i = \frac{20}{(20-1)} \frac{8.807^2 - 4.86}{8.807^2}$$

$$r_i = \frac{20}{19} \frac{72.703}{77.563}$$

$$r_i = 1.05 \times 0.93$$

$$r_i = 0.97$$

Based on the result above, it can be stated that the reliability was high.

F. Technique of Data Analysis

In analyzing the data in this research, the researcher used t-test formula. According to Hartono, t-test is one of the statistic tests that is used to know whether there is or not a significant effect of two samples of mean in two variables¹². T-test was used in order to find out whether there is a significant effect of students' reading comprehension on narrative text taught by using Concept Attainment strategy and students' reading comprehension on narrative text taught without using Concept Attainment strategy. The data were statistically analyzed by using SPSS 16.0 version.

¹² Hartono. *Statistik Untuk Penelitian*. (Yogyakarta: Pustaka Pelajar, 2008). P. 171

The t-table was employed to see whether or not there was a significant effect of gain score both experimental and control class.

Statistically hypothesis:

H_0 : variance population identic

H_a : variance population not identic

H_a : $t_0 > t\text{-table}$

H_0 : $t_0 < t\text{-table}$

H_a is accepted if $t_0 > t\text{-table}$ or there is a significant effect of using Concept Attainment strategy on students reading comprehension on narrative text of eleventh grade students of MA Hidayatullah Lubuk Dalam.

H_0 is accepted if $t_0 < t\text{-table}$ or there is no significant effect of using Concept Attainment strategy on students reading comprehension on narrative text of eleventh grade students of MA Hidayatullah Lubuk Dalam.