CHAPTER III

RESEARCH METHODOLOGY

A. The Research Design

The method of this research is experimental research, precisely quasi experimental research. According to Cresswell, "experimental is you test an idea (or practice or procedure) to determine whether it influences an outcome or dependent variable".[1] This research consisted of two variables, independent variable and dependent variable. Independent variable used Story Map with Characters' Perspectives (SMCP) strategy called variable X. And dependent was students' reading comprehension in narrative text called variable Y. Louis Cohen et al state an experiment involves making a change in the value of one variable – called the independent variable – and observing the effect that changes one another variable – called the dependent variable.[2]

Table III.1
The Research Design

Independent variable (X) Used Story Map with Characters' Perspectives (SMCP) strategy		Dependent variable (Y) Students' reading comprehension in narrative text

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[1] Jhon W. Creswell. *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research.* (Nebreska: University of Nebraska, 2008), p. 60.
[2] Louis Cohen, et al. *Research Methods in Education Sixth Edition*. (London and New York: Routledge.2007), p. 272.

Gay and Airasian stated 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] There are two kinds of quasi experiment; they are pre- and post test design and post test only design.[4] The writer used pre- and post test design in this research. The writer assigned intact group the experiment and control groups, for a pre test to both groups, giving treatment for experiment group only, and then the writer administer a post test to assess the difference between two groups.[5]

The research involved two equal qualifications of sample group, they were an experimental and control groups. The experimental group was treated by Story Map with Characters' Perspectives (SMCP) strategy. Both of two classes were given pre-test and post-test, but only the experimental class was treated by using Story Map with Characters' Perspectives (SMCP) strategy. In brief, this research was designed by the following table:

Table III.2
The Research Design

Class	Pre-test	Treatment	Post-test
Experimental	T1	X	T2
Control	T1	-	T2

Note:

    T1   : pre- test to experiment and control class

    T2   : Post-test to experiment and control class

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[3] L.R. Gay and Peter Airasian, *Educational Research: Competencies for Analysis and Application* (New Jersey: Prentice-Hall Inc, 2000), p.367.

[4] Jhon W. Creswell. *Op.Cit*, p. 314.

[5] Ibid, p. 313- 314.

X   : Receiving treatment

-    : No treatment

B. The Location and Time of the Research

The location of this research was at Islamic Senior Boarding School Daarun Nahdhah Bangkinang. The research was conducted from 27 August to 20 September 2013.

C. The Subject and the Object of the Research

Based on the title of the research, the subject of this research was the second year students at Islamic Senior Boarding School Daarun Nahdhah Bangkinang. Then, the object of the research was reading comprehension in narrative text and Story Map With Characters' Perspectives strategy.

D. The Population and The Sample of the Research

The population of this research was the second year students at Islamic Senior Boarding School Daarun Nahdhah Bangkinang in 2013/2014 academic years. There were 5 classes which consisted of 1 class of natural science and 4 classes of social science. The total number of the second year students of Islamic Senior Boarding School Daarun Nahdhah Bangkinang was 162 students. The population above is large enough to be all taken as sample of the research. Based on the limitation of the research, the writer took only 2 classes after doing Cluster Sampling. According to

Gay, Cluster Sampling randomly selects groups, not individuals. All the members of selected groups have similar characteristics.[6]

Therefore, the researcher took two classes to represent the population having similar characteristics. The similar characteristics intended for the both of class are: the students were taught by the same teacher of English, the students had the same level, and the students had the same material about learning of listening. Here, the researcher will take class IPS 1 and IPS 2 as sample. The specification of the population can be seen on the table below:

Table III.3
The Total Population of the Second Year Students at Islamic Senior Boarding School Daarun Nahdhah Bangkinang 2013-2014

Class	Female	Male	Total
XI IPA I	18	12	30
XI IPS I	32	-	32
XI IPS II	32	-	32
XI IPS III	15	19	34
XI IPS III	-	34	34
TOTAL	97	65	162

The technique used in taking the sample was cluster random sampling. Having the sample, the writer used lottery by passing out small rolled paper marked by the sequence name of the class. Then after passing out the paper, the sample for the research was class XI IPS 2 as a control class and XI IPS 1 as an experimental class.

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[6] L. R. Gay and Peter Airasian, *Op .Cit*, p.129

Table III.4
Sample of the Research

Class	Male	Female	Total Number of Students
XI IPS I	-	32	32
XI IPS II	-	32	32
TOTAL	**-**	**64**	**64**

E. The Technique of Collecting Data

In this research, the writer gave the test to the students. The test was used to determine the students' reading comprehension. The type of the test was multiple choice test. A multiple choice item requires the students to select a correct answer out of a number of options[7]. The test was given to the experimental class and the control class in order to find out the effect of using Story Map with Characters' Perspectives (SMCP) strategy toward reading comprehension in narrative text of the second year students at Islamic Senior Boarding School Daarun Nahdhah Bangkinang.

After the students did the test, the writer then took the total score from the result of the reading comprehension test. The classification of the students' score is shown below:[8]

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[7] Elana Shohamy. *A Practical Handbook in Language Testing for the Second Language Teacher.* (Israel: Tel-Aviv Universityy. 1985), p. 38.

[8] Suharsimi Arikunto. *Dasar-dasar Evaluasi Pendidikan.* (Jakarta: Bumi Aksara: 2009), p. 245.

Table III.5
The Classification of Students' Score

THE SCORE LEVEL	CATEGORIES
80-100	Very Good
66-79	Good
56-65	Enough
40-55	Less
30-39	Fail

F. The Validity, and Reliability of the Test

1. Validity

Before the tests were given to the sample of this research, both of the tests were tried out to 30 students of the second year in the natural science major. The purpose of the try out was to obtain validity and reliability of the test. The test is said to be valid if it measures accurately what it is intended to measure[9]. It was determined by finding the difficulty level of each item. The formula of item difficulty is as follows:[10]

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

Where:

P   = Difficulty level

B   = The number of correct answer

JS = The number of students

The difficulty level of an item shows how easy or difficult particular item in a test. The items that do not reach the standard level of difficulty are

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[9] Arthur Hughes., *Op.Cit.*, p. 26.
[10] Suharsimi Arikunto., Op.Cit., p. 209.

excluding from the test and they are changed with new items that are appropriate.

The standard level of difficulty used is < **0,30** and > **0,70**. It means that an item is accepted if the level of difficulty is between 0,30-0,70 and it is rejected if the level of 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 calculation of item difficulty can be seen from the following table:

Table III.6
The Students Identify Main Idea of the text

Variable	Identify Main Idea in Narrative text					N
Item no	1	6	11	16	21	
Correct	18	17	15	15	16	
P	0.60	0.56	0.50	0.50	0.53	30
Q	0.40	0.44	0.50	0.50	0.47	

Based on the table 3.6, the proportion of correct answer for item number 1 shows the proportion of correct 0.60, item number 6 shows the proportion of correct 0.56, item number 11 shows the proportion of correct 0.50, item number 16 show the proportion of correct 0.50. Item number 21 show the proportion of correct 0.53. Based on the standard level of difficulty "p" <0.30 and >0.70, it is pointed out the item of difficulty level of each item number for identifying the main idea of the text is accepted.

Table III.7
The Students Identify the Sequence of Events of the Text

Variable	Identify the sequence of events of the text					N
Item no	2	7	12	17	22	
Correct	14	15	17	15	15	
P	0.46	0.50	0.56	0.50	0.50	30
Q	0.54	0.50	0.44	0.50	0.50	

Based on the table 3.7, the proportion of correct answer for item number 2 shows the proportion of correct 0.46, item number 7 shows the proportion of correct 0.50, item number 12 shows the proportion of correct 0.56, item number 17 shows the proportion of correct 0.50. Number 22 shows the proportion of correct 0.50 .Based on the standard level of difficulty "p" <0.30 and >0.70, it is pointed out the item of difficulty level of each item number for identifying the sequence of events of the text is accepted.

Table III.8
The Students Identify the Characters From the Text

Variable	Identify the characters from the text					N
Item no	3	8	13	18	23	
Correct	18	18	15	16	16	
P	0.60	0.60	0.50	0.53	0.53	30
Q	0.40	0.40	0.50	0.47	0.47	

Based on the table 3.8, the proportion of correct answer for item number 3 shows the proportion of correct 0.60, item number 8 shows the proportion of correct 0.60, Item number 13 shows the proportion of correct 0.50, item number 18 shows the proportion of correct 0.53. Number 23 shows the proportion of

correct 0.53. Based on the standard level of difficulty "p" <0.30 and >0.70, it is pointed out the item of difficulty level of each item number for identifying the characters from the text is accepted.

Table III.9
The Students are Identify Communicative Purpose of the Text

Variable	Identify comminicative purpose of the text					N
Item no	4	9	14	19	24	
Correct	14	16	17	15	15	30
P	0.46	0.53	0.56	0.50	0.50	
Q	0.54	0.47	0.44	0.50	0.50	

Based on the table 3.9, the proportion of correct answer for item number 4 shows the proportion of correct 0.46, item number 9 shows the proportion of correct 0.53, item number 14 shows the proportion of correct 0.56, item number 19 shows the proportion of correct 0.50, number 24 shows the proportion of correct 0.50. Based on the standard level of difficulty "p" <0.30 and >0.70, it is pointed out the item of difficulty level of each item number for identifying comminicative purpose of the text is accepted.

Table III.10
The Students are Identify Generic Structure of the Text

Variable	Identify generic structure of the text					N
Item no	5	10	15	20	25	
Correct	14	15	14	14	14	30
P	0.46	0.50	0.46	0.46	0.46	
Q	0.54	0.50	0.54	0.54	0.54	

Based on the table III.10, the proportion of correct answer for item number 5 shows the proportion of correct 0.46, item number 10 shows the proportion of correct 0.50, item number 15 shows the proportion of correct 0.46, item number 20 shows the proportion of correct 0.46. Number 25 shows the proportion of correct 0.46. Based on the standard level of difficulty "p" <0.30 and >0.70, it is pointed out the item of difficulty level of each item number for identifying the generic structure text is accepted.

2. Reliability

According to H. Douglas Brown[11], reliability has to do with accuracy of measurement. This kind of accuracy was reflected in obtaining similar results when measurement was repeated on different occasions or with different instruments or by different persons. The characteristic of reliability was sometimes termed consistency. Meaning that, we can say the test was reliable when an examinee's results were consistent on repeated measurement.

To obtain the reliability of the test, it must be known the Mean and Standard Deviation of test. Validity in general refers to appropriateness of a given test or any of its component parts as a measure of what it was purposed to measure. It means the test was valid to the extent that was measured what it was supposed to measure.

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

The reliability coefficients for good identified kinds of text structure text and reading comprehension test were expected to exceed 0.0 and closed 1.00. Heaton states that, the reliability of the test was considered as follows:

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[12]

To obtain the reliability of the test given, the researcher used the formula as follows[13]:

$$KR\ 20: ri = \frac{n}{(n-1)} \ \frac{s^2 - \sum pq}{s^2}$$

Where:

n   : number of items on the instrument
Pi   : proportion of subjects who answered the item correctly
Q   : proportion of subject who answered the item wrong (1-Pi)
$\sum pq$: the multiplication result between p and q
S^2 : total variance

Furthermore, to obtain the reliability of the test given, the data should be looked for first and then analyze it manually by the formula of statistic above (see the appendix to know the process of finding data). The data that were needed had been found after they were calculated, they are as follows:

N   = 25
M   = 52,66
S   = 4.64

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[12]J.B. Heaton, *Writing English Language Test.* (New York: Cambridge University Press, 1988), p. 164.

[13] Sugiyono. *Statistik untuk Penelitian.* (Bandung: Alfabeta. 2007), p. 359.

In calculating by reliability test. The researcher used the formula as follows[14]:

KR 20:

$$ri = \frac{n}{(n-1)} \frac{s^2 - \sum pq}{s^2}$$

$$= \frac{25}{25-1} \frac{4.64^2 - 6.09}{4.64^2}$$

$$= 1.04 \frac{21.52 - 6.09}{21.52}$$

$$= 1.04 \frac{15.45}{21.52}$$

$$= 1.04 \, (0.717)$$

$$= 0.745$$

Then, the score obtained (0.745) comparing to the r product moment at the 5% significant is 0.444 and the 1% significant is 0.561. whereas the N is 25. Thus, it can read 0.444<0.745>0.561. this mean the test of reading comprehension is reliable.

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

G. Technique of Data Analysis

The data were analyzed by using the statistic analysis, in order to find out whether or not there is a significant effect of using Story Map With Characters' Perspectives Strategy toward reading comporehension in narrative text of the second year students at Islamic Senior Boarding School Daarun Nahdha Bangkinang. In analyzing the data, the writer used score of experimental class and control class. The

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[14] Ibid. p. 359

technique of data analysis used in this research was T-test formula. According to

Hartono, T-test is one of the statistic tests that are used to know whether or not there

is significant difference of the two samples of mean in two variables.[15] Based on the

formulations of the problem, the writer analyzed the data through the following

procedures for each problem by using SPSS:

1. Independent sample t-test

The t-test for independent sample is used to determine the first and the second

of the formulation of the problem, whether or not there is probably a significant

difference between the means of two independent sample.[16] The different mean is

analyzed by using T-test formula:[17]

$$t_{0} = \frac{M_{x} - M_{y}}{\frac{SD_{x}}{\sqrt{N-1}}^{2} + \frac{SD_{y}}{\sqrt{N-1}}^{2}}$$

Where:

t_{o} : the value of t-obtained

M_x : Mean X

M_y : Mean Y

SD_x : Standard Deviation X

SD_y : Standard Deviation Y

N : The number of the students

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[15] Hartono, *Statistik untuk Penelitian*, (Yogyakarta: Pustaka pelajar, 2009), p. 208
[16] Ibid. p. 484
[17] Ibid p. 178

The t-table is employed to see whether or not there is a difference between the mean score of both experiment and control class. The t-obtained value is consulted with the value of t-table by using degree of freedom. The formula at the degree of freedom is as follows:[18]

df = (Nx + Ny) – 2 statically hypothesis:

H_a : t_o > t_{table}

H_o : t_o < t_{table}

Where:

df = degree of freedom

Nx = Number of students in experimental class

Ny = Number of students in control class.

Ha is accepted if to > t-table or there is an effect of using Story Map With Characters' Perspectives Strategy (SMCP) toward reading comprehension in narrative text.

Ho is accepted if to > t-table or there is no effect of using Story Map With Characters' Perspectives (SMCP) Strategy toward reading comprehension in narrative text.

2. Paired sample t-test

The writer used this formula to answer the third formulation of the problem. L.R. Gay states that t-test for non independent sample is used to compare groups that

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[18] Ibid, p. 22

are formed by some types of matching or to compare a single group's performance on

a pre- and post-test or on two different treatments.

$$t = \frac{M_D}{\sqrt{\frac{\sum D^2 - \frac{(\sum D)^2}{N}}{N(N-1)}}}$$

To identify the level of the effect of using story map with characters'

perspectives strategy toward reading comprehension in narrative text of the second

year students at Daarun Nahdha Bangkinang, it was done by calculating coefficient

(r^2) by using the following formula:[19]

$$r^2 = \frac{t^2}{t^2 + n - 2}$$

To find out the percentage of coefficient effect (K_p) , it the following formula was

used:

$$K_p = r^2 \times 100\%$$

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[19] Riduwan. *Rumus dan Data dalam Analisis Statistik.* (Bandung: Alfabeta, 2008), p.125