

## CHAPTER III

### RESEARCH METHOD

#### A. Research Design

The type of the research is experimental research. According to Creswell, experiment is test an idea (or practice or procedure) to determine whether it influences an outcome or dependent variable.<sup>1</sup> This research used two variables. They were variable X and Y, which are; variable X was the effect of using Text Mapping strategy and variable Y was the students' reading comprehension of narrative text.

The design of this research was pre-experimental design, which used the one group of pretest-posttest design. The characteristics of pre-experimental design are this design may have pre- and posttest, without a control group.<sup>2</sup> According to Gay and Airasian<sup>3</sup>, the one group pretest and posttest design takes a group that is pretested, exposed to treatment, and post tested. In conducting the research, the writer used one class of the second year students at MA Darul Ulum Tandun as sample. In the first meeting, the students were given the pretest in order to know their comprehension in reading before using text mapping strategy. Then, the students were given the treatment. At the end, they were given posttest; it

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

<sup>2</sup> David Nunan. *Research Method in Language Learning*.(New York: Cambridge University press, 1992). p. 41

<sup>3</sup>L.R., Gay, & Peter Airasian. *Educational Research: Competencies for Analysis and Application*. (6<sup>th</sup>ed.). (Upper Saddle River, New Jersey: Merrill Publishing Company, 2000). p.372

measured students' reading comprehension after using text mapping strategy.

According to Sugiyono<sup>4</sup>, the type of pre-experimental design of this research is comparing the result after and before giving treatment. The writer only compared score of pretest and posttest, where the first was before using Text Mapping Strategy and the second was after using Text Mapping Strategy. According to Donald T. Campbell and Julian C. Stanley, the types of this research can be designed as follows:<sup>5</sup>

**TABLE III. I**  
**Research type**

<b>Group</b>	<b>Pre-test</b>	<b>Treatment</b>	<b>Post test</b>
E	O <sub>1</sub>	X	O <sub>2</sub>

Where:

E = experimental group

O<sub>1</sub> = pre - test

X = treatment

O<sub>2</sub> = post - test

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<sup>4</sup>Sugiyono. *Metode Penelitian Administrasi*. (Bandung: CV Alfabeta, 2005),p.108

<sup>5</sup>Donald T. Campbell and Julian C. Stanley. *Experimental and Quasi Experimental Designs for Research*, Houghton Mifflin Company, U.S.A, 1963, p. 13

## B. Time and Location of the Research

This research was conducted at MA Darul Ulum Tandun Rokan Hulu Regency. It was done from September to October 2013

## C. Subject and Object of the Research

Subject of the research was the second year students at MA Darul Ulum Tandun. The object of this research was the effect of using text mapping strategy toward students' reading comprehension.

## D. Population of the Research

The population of this research was the second year students of MA Darul Ulum Tandun. It consisted of 26 students, they were in one class. Arikunto states that amount of the subject is less than 100, it is better to take all the population and if the amount of the subject is more than 100 respondents, we take 25% or more than it.<sup>6</sup> For this condition, the writer took the total number in population as sample. The technique used in taking the sample was total sampling.

**TABLE III.2**  
**Distribution of the Research Population and Sample**

No	Class	female	Male	Population
1	XI	15	12	28
Total				28

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<sup>6</sup>Suharsimi Arikunto, *Prosedur Penelitian: Suatu Pendekatan Praktik*. Edisi Revisi VI. (Jakarta:Rineka Cipta, 2006.), p. 134.

## **E. Technique of Collecting Data**

The data collected by using pretest and posttest. Pre-test was given to the students in the beginning of the research. Then, the post-test was given to the students at the end of the research.

The procedures of collecting data are as follows:

### **1. Pre-test**

The pretest was done before treatment intended to obtain students' reading comprehension in narrative text of second year at MA Darul Ulum Tandun. Items used for pre-test consisted of 20 items with 5 texts. The test was about reading comprehension which was appropriate with indicators of reading comprehension.

### **2. Treatment**

The treatment is Text Mapping Strategy to increase students' reading comprehension in narrative text. The time to apply this strategy was about eight meetings.

### **3. Post-test**

The posttest was given at the end of research. The items used for posttest consisted of 20 items.

## F. Technique of Data Analysis.

In this research, the writer analyzed the data by using statistical method. To find out the students' individual score, the writer used a formula as follows:

$$\text{Students score} = \frac{\text{correctanswer}}{\text{totalnumberofquestion}} \times 100$$

Then, to interpret the score, the writer used the criteria of measuring the test score to find the effect of using text mapping strategy towards students' reading comprehension strategy on narrative text of the second year at MA Darul Ulum Tandun, the criteria can be seen as follows:<sup>7</sup>

**TABLE III.3**  
**The Criteria Students' Score in Reading Comprehension**

The score of comprehension	Categories
80-100	Very good
66-79	Good
56-65	Enough
40-55	Less
30-39	Fail

The writer used t-test to know whether or not the result of research had statistically significant. According to Hartono, t-test is one of the statistic tests used to know whether or not there is significant difference of the two samples of mean in two variables.<sup>8</sup> . The data were analyzed by using statistical analysis. The different mean was analyzed by using paired sample t-test on SPSS v.16. Next, give interpretation to the *t* value in which the formula for **degrees of freedom** is  $df = N-1$

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<sup>7</sup>Suharsimi Arikunto, *Dasar-dasar Evaluasi Pendidikan*. Edisi Revisi, (Jakarta: Bumi Aksara, 2009.), p. 245.

<sup>8</sup>Hortono. *Statistik Untuk Penelitian*. Yogyakarta: Pustaka pelajar. 2011. p. 178

The analysis of t-test formula described whether the hypothesis is accepted or rejected. If the t-calculated is the same or less than the critical value of t-table, it means the null hypothesis is accepted. However, if the value of t-calculated is bigger than t-table, it means the alternative hypothesis is accepted.

### **G. The item difficulties, validity and reliability of the test**

#### 1. The item difficulties

To find out the result of validity, the writer gave tried out to 20 students before the test was given to the sample of this research. The purpose of try out was to obtain validity and reliability of the test. The test was given to the students was considered not too difficult or not too easy. According to Arikunto, the test is accepted if the degree of difficulty is between 0.30 – 0.70<sup>9</sup>. It is determined by finding of the difficulty level of each item. The formula for item difficulty is as follows:<sup>10</sup>

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

In Which:

P : Index of difficulty

B : The number of correct answer

JS : The number of students

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<sup>9</sup>Suharsimi Arikunto, *Dasar-Dasar Evaluasi Pendidikan*, (Bumi Aksara, Jakarta,2009), p.210

<sup>10</sup>*Ibid.* p 208

Then, the proportion correct was represented by “p” , whereas the proportion incorrect was represented by “q”.

**TABLE III.4**  
The standard level of validity used is<sup>11</sup>:

No	Classification	Standard level
1	Difficult	1.00-0.30
2	Accepted	0.30-0.70
3	Easy	0.70-1.00

## 2. Validity

The instrument of the test is valid if the instrument that used measures what it purpose to measure<sup>12</sup>.The writer did try out twice. The purpose of try out was to obtain validity and reliability of the test. It was determined by finding the difficulty level of each item. To find out validity of the test, the writer use correlation product moment follows the formula by Arikunto:<sup>13</sup>

$$r_{xy} = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$$

Where:

$r_{xy}$ = correlation product moment x and y

$\sum xy$ = total x and y

$\sum X^2$  = X quadrant

$\sum Y^2$  = Y quadrant

<sup>11</sup>Suharsimi Arikunto, *Op.cit.* 210

<sup>12</sup>Suharsimi Arikunto, *Dasar-Dasar Evaluasi Pendidikan*, (Bumi Aksara, Jakarta,2009), p.

<sup>13</sup>*Ibid*, 70

$$r_{xy} = \frac{1463,5}{1880 \cdot 1455}$$

$$r_{xy} = \frac{1463,5}{\sqrt{2735400}}$$

$$r_{xy} = \frac{1463,5}{1653,90} = 0.88$$

According to Suharsimi Arikunto state the ranges of validity are<sup>14</sup>:

**TABLE III.5**  
**Classifications of Validity**

<b>Classification</b>	<b>Score</b>
Excellent	0,800-1,00
Good	0,600-0,800
Fair	0,400-0,600
Poor	0,200-0,400
Very Poor	0,00-0,200

The result of the validity tests in 0.88, so the validity is **Excellent**.

### 3. Reliability

Reliable instrumentation showed that there was a trustworthy or reliable of the test to take the data. Arikunto stated that it is possible for the test is reliable but it is not valid, whereas the test is valid automatically, it is reliable. To obtain the reliability of the test given, the writer used Spearman-Brown formula as follows<sup>15</sup>:

<sup>14</sup>Suharsimi Arikunto, *Op. Cit.*, p.75

<sup>15</sup> Sugiyono ,2010, *Statistic Untuk Penelitian*, (Bandung: Alfabeta), p. 359



$$r_{11} = \frac{2 r_b}{1 + r_b}$$

Where :

$r_{11}$ : Instrumen of reliability

$r_b$  :  $r_{xy}$  that mean as correlation of product moment

$$r_{11} = \frac{2 \times 0.88}{1 + 0.88}$$

$$r_{11} = \frac{1.76}{1.88} = 0.93$$

According to Susetiyono state the ranges of reliability are<sup>16</sup>:

**TABLE III.6**  
**Criteria of reliability<sup>17</sup>**

<b>Classification</b>	<b>Score</b>
Excellent	$0,80 < r_{11} \leq 1,00$
Good	$0,60 < r_{11} \leq 0,80$
Fair	$0,40 < r_{11} \leq 0,60$
Poor	$0,20 < r_{11} \leq 0,40$
Very Poor	$0,00 < r_{11} \leq 0,20$

Based on the table classification above, it can read  $0,80 < 0.93 \leq 1,00$ .

So, reliability was classified into **excellent** level.

<sup>16</sup>Suharsimi Arikunto, *Op. Cit.*, p.75

<sup>17</sup>Susetiyono, et.al, 2010, *Berkala Fisika Indonesia: Penerapan Model Syndicate Group*, (Pdf Version by Dr. Raden Oktova) Retrived on 24 October 2013