CHAPTER III

RESEARCH METHOD

A. Research Design

This research is experimental research. According to William (in Kumar 2006:134) "An experiment usually consists in making an event occur under known conditions whereas many extraneous influences as far as possible are eliminated and close observation is possible so that relationship between phenomena can be revealed".

The design of this research was pre-experimental design which used one group of pretest – posttest design. According to Nunan (1992:41), said that the pre-experimental design may have pretest and posttest, without a control group. In addition to Cohen et al (2007: 282) Pre-experimental designs: the one group pretest-post-test design; the one group posttests only design; the post-tests only nonequivalent design.

In conducting the research, the writer used one class of the first grade at Islamic Senior High School Hasanah Pekanbaru as sample. In first meeting the writer gave students pretest in order to know their reading comprehension, before using book box strategy. Then, the students were given the treatment. At the end, they were given post-test; it measured students' reading comprehension after using book box strategy.

According to Louis Cohen et al (2005:212) the one group pretest-posttest design can be represented as:

Table III.1
Research Design

Group	Pre-test	Treatment	Post-test
Class	$O1$	X	$O2$

Where:

X : Treatment

O1 : Pre-test

O2 : Post-test

B. Time and Location of the Research

This research was conducted from April to May 2016. The location of this research is Islamic Senior High School Hasanah Pekanbaru.

C. Subject and Object of the Research

1. Subject of the research

The subject of this research was the first grade students of Islamic Senior High School Hasanah Pekanbaru.

2. The object of the research

The object of the research was the effect of using book box strategy on students' reading comprehension.

D. Population and Sample of the Research

The population of this research was the first grade students at Islamic Senior High School Hasanah Pekanbaru. It had two classes.

Table III.2
Total Population and Sample of the First Grade Students at Islamic Senior High School HasanahPekanbaru

No	Classes	Population	Sample
1	VII 1	18 Students	-
2	VII 2	17 Students	17 students
Total		35 students	17 students

Based on the table III.2 the number of the population of first grade students at Islamic Senior High School Hasanah Pekanbaru was 35 students. The total number of the first grade students at Islamic Senior High School Hasanah Pekanbaru was enough to be taken as sample of the research. The writer took one class for the samples because the writer used pre-experimental design that did not need control class. The writer chose sample by using cluster random sampling. According to Cohen et al (2007:129) said that the researcher can select a specific number of schools and test all the students in those selected schools by cluster random sampling.

E. Technique of Collecting the Data

In collecting data, the writer used test that consisted of pre-test and post-test. The kind of test that writer used was multiple choice. According to Creswell (2008:297), pre-test provides a measure on some attribute or characteristic that you asses for participants in an experiment before they receive a treatment. After the treatment you take another reading on attribute

or characteristic. A post-test is a measure on some attribute or characteristic that is assessed for participant in an experiment after the treatment.

The writer used pretest to know the students' reading comprehension before being taught by using book box strategy and post-test was used to know the effect of using book box strategy to students' reading comprehension after being taught.

F. Validity and Reliability of the Test

1. Validity

According to Cohen (2005: 105) Validity is an important key to effective research. If a piece of research is invalid, then it is worthless. Validity is thus a requirement for quantitative and qualitative/ naturalistic research. Whilst earlier versions of validity were based on the view that it was essentially a demonstration that a particular instrument in fact measures what it purposes to measure. It means that, to measure students' ability need the validity.

Every test, whether it is a short, informal class room test, or a public examination should be as valid as the test constructor can make it, the instrument of the test must aim at providing a true measure of the participation skill in which it is intended to measure. The instrument of the test is valid if the instrument used can measure the thing that will be measured. In this research writer use content validity to measure validity of the test before given to the students.

According to Hughes (1989:22), "a test said to be valid if it measures accurately what it is intended to measure". 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. Historically, validity was defined as the extent to which an instrument measured what it claimed to measure.

The test given to students was considered not too difficult or too easy, often showing the low reliability. Item difficulty was determined as the proportion of correct responses. This is held pertinent to the index difficulty; it was generally expressed as the percentage of the students who answered the questions correctly. According to Arikunto (2006: 208) the formula of each item difficulty is as follows:

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

Note:

P: index of difficulty of facility

B: the number of correct answers

JS: the number of examiners of students

2. **Item Difficulties of the Test**

The standard level of difficulty used is > 0.30 and < 0.70. It means that the item will be accepted if the level of difficulty is between 0.30-0.70 and it is not accepted if the level of difficulty is below 0.30 (difficulty) and over 0.70 (easy). Then, the proportion correct is

represented by "p ", whereas the proportion incorrect is represented by

" q ".

Table III.3
Students Can Identify the Topic of the Text

Variable	Identify the Topic of the Text				N
No item	1	6	11	16	
Correct	11	9	10	11	17
p	0,65	0.53	0.59	0.65	
q	0,35	0.47	0.41	0.35	

Based on the table III.3 the proportion of correct answers for

item number 1 shows the proportion of correct 0.65, item number 6

shows the proportion of correct 0.53, item number 11 shows the

proportion of correct 0.59, item number 16 shows the proportion of

correct 0.65. Based on the standard level of difficulty " p"> 0.30 and <

0.70, it is pointed out that item difficulties in average of each items

number for identifying the topic are accepted.

Table III.4
Students Can Identify the Factual Information of the Text

Variable	Identify the Factual Information of the Text				N
No item	2	7	12	17	
Correct	10	9	10	11	17
p	0.59	0.53	0.59	0.65	
q	0.41	0.47	0.41	0.35	

Based on the table III.4 the proportion of correct answer for

item number 2 shows the proportion of correct 0.59, item number 6

shows the proportion of correct 0.48, item number 10 shows the

proportion of correct 0.59, item number 14 shows the proportion of

correct 0.55, item number 18 shows the proportion of the correct 0.55.

Based on the standard level of difficulty "p" > 0.30 and < 0.70, it is

pointed out that item difficulties in average of each items number for identifying the words meaning of a sentence are accepted.

Table III.5
Students Can Identify the Word Meaning of the Text

Variable	Identify the Word Meaning				N
No item	3	8	13	18	
Correct	10	10	10	10	17
p	0.59	0.59	0.59	0.59	
q	0.41	0.41	0.41	0.41	

Based on the table III.5 the proportion of correct answer for item number 3 shows the proportion of correct 0.59, item number 8 shows the proportion of correct 0.59, item number 13 shows the proportion of correct 0.59, item number 18 shows the proportion of correct 0.59. Based on the standard level of difficulty "p" > 0.30 and < 0.70, it is pointed out that item difficulties in average of each items number for identify the word meaning are accepted.

Table III.6
Students Can Identify Complication of the Text

Variable	Identify the Complication				N
No item	4	9	14	19	
Correct	10	11	10	9	17
p	0.59	0.65	0.59	0.53	
q	0.41	0.35	0.41	0.47	

Based on the table III.6 the proportion of correct answer for item number 4 shows the proportion of correct 0.59, item number 9 shows the proportion of correct 0.65, item number 14 shows the proportion of correct 0.59, item number 19 shows the proportion of correct 0.53. Based on the standard level of difficulty "p" > 0.30 and

<0.70, it is pointed out that item difficulties in average of each items number for identifying about complication are accepted.

Table III.7
Students Can Identify the Purpose of the Text

Variable	Identify the Purpose of the Text				N
No. item	5	10	15	20	
Correct	11	10	10	210	17
p	0.65	0.59	0.59	0.59	
q	0.35	0.41	0..41	0.41	

Based on the table III.7 the proportion of correct answer for item number 45 shows the proportion of correct 0.65, item number 10 shows the proportion of correct 0.59, item number 15 shows the proportion of correct 0.59, item number 20 shows the proportion of correct 0.59. Based on the standard level of difficulty " p" > 0.30 and < 0.70, it is pointed out that item difficulties in average of each items number for identifying about purpose of the text are accepted.

3. **Reliability**

Reliability has to do with accuracy of measurement. This kind of accuracy was reflected in obtaining of similar results when measurement was repeated on different occasions or with different instruments or by different persons.

Brown (2003:20) state that reliability has to do with accuracy of measurement. This kind of accuracy was reflected in the obtaining of similar result when measurement was repeated on different occasions or with different instruments of by different persons. The characteristic of reliability was sometimes termed consistently. Meaning that, we can say

the test was reliable when an examinee's results were consistent on repeated measurement or the reliability of a measuring instrument is the degree of consistency with which it measures whatever it is measuring.

Heaton (1988:78) states that, the reliability of the test was 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

To obtain the reliability of the test given, the writer used SPSS 17.00 to find out whether the test is reliable or not.

Table III. 8
Case Processing Summary

		N	%
Cases	Valid	17	100.0
	Excluded[a]	0	.0
	Total	17	100.0

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

Table III.9
Reliability Statistics

Cronbach's Alpha	N of Items
.973	2

From the table III.9 above, it can be seen that the value of Cronbach' Alpha is 0.973. From Heaton level above, it can be said that reliability was accepted which was $0.71 < 0.973 < 1.0$ or higher than 0.71 and lower than 1.0. It also can be stated that reliability is very high.

4. Normality of the Test

Assessing normality of data is used to describe a symmetrical, bell shaped curve, which has the greatest frequency of score in the middle with smaller frequency towards the extremes. In this research, the writer assessed the normality of data by using kolmogorov-smirnov test from SPSS 17 version. The kolmogorov-smirnov Z test is typically used to assessunivariate normality. The result of the test can be seen as follows:

Table III.10
One-Sample Kolmogorov-Smirnov Test

		PRETEST	POSTTEST
N		17	17
Normal Parameters[a,b]	Mean	66.4706	76.7647
	Std. Deviation	11.28670	8.82843
Most Extreme Differences	Absolute	.331	.362
	Positive	.260	.239
	Negative	-.331	-.362
Kolmogorov-Smirnov Z		1.363	1.492
Asymp. Sig. (2-tailed)		.049	.023
a. Test distribution is Normal.			
b. Calculated from data.			

From the table III.10 above the value (asymp.sig 2-tailed) in pretest and posttest are 0.049 and 0.23 higher than 0.05. It can be concluded that the test distribution is normal.

G. Blueprints of the Test

Table III.11
The Blueprint of the Pre-Test

Number	Indicator	Total items	Items number
1	Identify topic of the text	4 items	1,6,11,16
2	Identify factual information	4 items	2,7,12,17
3	Identify the word meaning	4 items	3,8,13,18
4	Identify the complication	4 items	4,9,14,19
5	Identify the purpose of the text	4 items	5,10,15,20

Table III.12
The Blueprint of the Post-Test

Number	Indicator	Total items	Items number
1	Identify topic of the text	4 items	1,6,11,16
2	Identify factual information	4 items	2,7,12,17
3	Identify the word meaning	4 items	3,8,13,18
4	Identify the complication	4 items	4,9,14,19
5	Identify the purpose of the text	4 items	5,10,15,20

H. Technique of data analysis

To analyze the data, the writer used score of pre-post test score. These scores were analyzed by using statistical analysis. The data were analyzed by using paired sample T-test (sample t-test) to know whether the result of the research statistically significant or not, and the data were analyzed though SPSS 17 version. The test consisted of 20 items, and the score of each number was 5. The category of score in reading test could be classified, as follows:

Table III.13
The Classification of Students' Score

Score	Categories
80-100	A
70-79	B
60-69	C
<60	D

After calculating the t-test, to know whether the t-score significant or not, the writer should know the distinction between t_o and if probability.

Statistically the hypotheses are:

H_o $= t_o <$ probability value

H_a $= t_o >$ if probability value

Finally, when the writer knows the result. The writer concludes that H_o is accepted if $t_o <$ probability value, it means that there is no significant effect of using book box strategy on students' reading comprehension at Islamic Senior High School Hasanah Pekanbaru.

H_a is accepted if $t_o >$ probability value, it means that there is a significant effect of using book box strategy on students' reading comprehension at Islamic Senior High School Pekanbaru.