**CHAPTER III**

**RESEARCH METHODOLOGY**

* 1. **Research Method and Design**
		1. Method

The writer applied an experiment method, uses quasi experiment, it is compare the result of two groups between experimental and control class for conducting this research. Singh said that “Experimental method is a scientific method. It is oriented to the future in the sense that the researcher is seeking to evaluate something new. It is a process of contribution to the already acquired fund of knowledge.”[[1]](#footnote-2)

The writer will explain the types of experiments and its characteristic briefly. First is Pre-experiment that may have pre- and -post treatment, but lacks of control group. Second is Quasi-experiment that has both pre- and post- test and experimental and control groups, but no random assignment of subjects. And the last is true experiment that the writer uses in this research which has both pre- and posttest and experimental and control groups, and random assignment of subjects.[[2]](#footnote-3)

* 1. **Design**

The design for applying this research, The writer used the test as an instrument to collect the data. There were two kinds of instruments in this study, they were: Instruments for the experimental class and for the control class. The tests were in the form of essay and multiple-choice. The multiple-choice used for the reading comprehension tests and essay used for the Pre-questioning questions. The total numbers of test items for the experimental class were 30 items and 15 test items for the control class. Below are the descriptions of content specification of the test:

27

20

## Table 3.1 Content Specification of Pre-questioning for the experimental class

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Content of the tests** | **Number of test item** | Number of item |
| 1. | Pre-questioning before reading to confirm expectations | 6 items  | 1, 3, 6,5, 10, 11 |
| 2. | Pre-questioning before reading to extract specific information | 3 items | 7, 4, 12 |
| 3. | Pre-questioning before reading for general comprehension | 3 items | 8,9,13 |
| 4 | Pre-questioning before reading to detailed comprehension | 3 items | 2, 14, 15 |
|  | Total | **15 items** | **15 items** |

1. **Instrumentation Try Out**

In order to know whether the instrument is suitable or not, the writer tried out the instrument. The try out was held on MA Darul Irfan Kota Serang.

The result of try out was useful for the following:

* 1. To decide the time allocation.
	2. To find out whether the instruction is understandable or not.
	3. To gather evidence to support the instruments validity and reliability.

Before the writer made instrument try out, there were some procedures need to be followed:

* 1. Getting the permissions letter from:

The Faculty of Education and Letters of The State Institute for Islamic Studies of Sultan Maulana Hasanudin Banten

* 1. Asking the permission from the Head Master of MA Darul Irfan Kota Serang and the second grade English teacher in IPS classes.

Thus, the instrument was tried out to the second year students of IPS classes in MA Darul Irfan Kota Serang. The writer took 2 (two) classes to become the sample of try out. The classes were: XI IPS 1 which consisted of 25 students, and XI IPS 2 which consisted of 25 students. The try out for the instrument without pre-questioning treatment was held on Tuesday, April 1st , 2014 (10.45 - 12.15 am) and with pre-questioning treatment was held on Thursday, April 10th, 2014 (08.15 - 09.45 am). The time allocation for try out was 60 minutes for each class.

In this study, the writer did not measure and use the index of items difficulty, because this study belongs to proficiency test. In other words, the writer only gave the test to measure the students’ comprehension in text.

Based on the result of try out, it can be concluded that:

1. In experimental class, the testes could answer the 30 try out items in 2 x 45 minutes, it means they did one items in 3 minutes. Based on the instruction, the time allocation provided for the sample of the study, was 2 x 30 minutes. So, the time allocation for the experimental class was added to 2 x 45 minutes.
2. In control class, the testees could answer the 15 try out items in 2 x 30 minutes, it means they did one items in 4 minutes. Based on the instruction, the time allocation provided for the sample of the study was 2 x 25 minutes. So, the time allocation for the experimental class was added to 2 x 30 minutes.
3. Based on the result of the try out, the tests could answer the test based on the instruction. As evidence, the students did not ask too much about how to answer the test. It meant the instruction of the test was not needed to be revised because it was understandable for the students.
4. From the result of the try out, the writer could get the data needed to count the reliability of the instrument. In calculating the result, the writer eliminated two of the students’ scores in XI IPS 2 from the list to make the equal group. So, the numbers of students from both of class were same.
	* 1. **Instrumentation Validity**

Sugiyono said that “Validitas merupakan derajat ketepatan antara data yang terjadi pada obyek penelitian dengan daya yang dapat dilaporkan oleh peneliti.”[[3]](#footnote-4)

In this study, the writer used two kinds of validity, they are; construct validity and content validity.

1. Construct validity

Based on Toendan (2006:133), construct validity refers to the extent to which the results of the data collection process can be interpreted in terms of underlying psychological construct. The instrument has construct validity if there is a relationship between theory and concept of the competence needed to accomplish the tests in this study. In this study, the theories are about pre-questioning and reading comprehension. Those, theories can be seen in Chapter II, Review of related literature, on page 23 (theory of pre-questioning) and on page 12 (theory of reading comprehension).

The competence in this study means that the students ability in answering the reading comprehension tests with pre-questioning treatment and without pre-questioning treatment. The instrument in this study belonged to proficiency test, it meant the test is not measure the students’ ability after learning process. The form of the reading comprehension tests for experimental and control classes are multiple choices and form pre-questioning for experimental class is essay.

* + - 1. Content Validity

According to Toendan (2006:132), content validity refers to the extent to which data collection process measures a representative sample of the subject matter or behavior that should be encompassed by the operational definition.

Related to this study, the test content is about reading comprehension, about main idea and supporting details, with or without pre-questioning. The following are the tables of content specification of test instrument:

## Table 3.1 Content Specification of Pre-questioning for the Experimental class

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Content of the tests** | **Number of test item** | Number of item |
| 1. | Pre-questioning before reading to confirm expectations | 6 items  | 1, 3, 6,5, 10, 11 |
| 2. | Pre-questioning before reading to extract specific information | 3 items | 7, 4, 12 |
| 3. | Pre-questioning before reading for general comprehension | 3 items | 8,9,13 |
| 4 | Pre-questioning before reading to detailed comprehension | 3 items | 2, 14, 15 |
|  | Total | **15 items** | **15 items** |

* + 1. **Instrumentation Reliability**

According to Arikunto (2002:154): “Reliabilitas menunjuk pada satu pengertian bahwa sesuatu instrumen cukup dapat dipercaya untuk digunakan sebagai alat pengumpul data karena instrumen itu sudah baik”. Based on that opinion, the writer measured the reliability of the instrument by using the following formula:

rxx = 1-

Where :

rxx = Coefficient Reliability

VEM = Variance Error of Measurement

Sd = Standard Deviation

VEM = 1/5 n

n = Number of Items

 (Kasiram, 1984.80)

To find out the standard deviation, the writer used following formula:

Sd = 

Where :

Sd = Standard deviation

n = Number of students tested

∑ = Sum Total

The value will be consulted to the standardization of coefficient reliability.

Where:

(+0.90) – (+1.00) : Excellent Reliability

(+0.85) – (+0.89) : Very Good Reliability

(+0.80) – (+0.84) : Good Reliability

(+0.70) – (+0.79) : Fair Reliability

Less than (+0.70) : Poor Reliability

( Soehartono, 1998: 86 )

* 1. **Location and Time of Research**

The data needed of this study were taken from the students’ scores that are collected by the test. The source of the data was collected from the Second Grade Students of MA Darul Irfan Islamic Boarding School on Jl. Raya Jakarta KM. 01 Pakupatan, Serang – Banten in academic years 2013/2014. The author was held this research on March 11th until April 10th 2014.

* 1. **Population and Sample**
		1. Population

Population is the whole of research subject.[[4]](#footnote-5) And strengthen by Nunan’s opinion, “Population is all case situations, or individuals who share one or more characteristics.” [[5]](#footnote-6) There are 50 students at the second grade of MA Darul Irfan Kota Serang Banten as the population.

* + 1. Sample

A sample is a representative of the population which studied or to generalize research results to the population.[[6]](#footnote-7) It means that sample is a part or representative of population being researched and it is called sample research if researcher aims to generalize the result of sample research. Briefly, the author concluded the research as validity of population. Meanwhile, the sample of this research is all students of second grade students of MA Darul Irfan Kota Serang in academic year 2013/2014. The author takes two classes there are Class A consists of 25 students as experimental class and Class B consists of 25 students as controlled class.

* 1. **Collecting Data Technique**

The writer used the test as an instrument to collect the data. There were two kinds of instruments in this study, they were: Instruments for the experimental class and for the control class. The tests were in the form of essay and multiple-choice. The multiple-choice used for the reading comprehension tests and essay used for the Pre-questioning questions. The total numbers of test items for the experimental class were 30 items and 15 test items for the control class. Below are the descriptions of content specification of the test:

## Table 3.2 Content Specification of Pre-questioning for the experimental class

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Content of the tests** | **Number of test item** | Number of item |
| 1. | Pre-questioning before reading to confirm expectations | 6 items  | 1, 3, 6,5, 10, 11 |
| 2. | Pre-questioning before reading to extract specific information | 3 items | 7, 4, 12 |
| 3. | Pre-questioning before reading for general comprehension | 3 items | 8,9,13 |
| 4 | Pre-questioning before reading to detailed comprehension | 3 items | 2, 14, 15 |
|  | Total | **15 items** | **15 items** |

## Table 3.3 Content specification of reading comprehension for the Experimental and Control class

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Content of test** | Number of test item | **Item number** |
| 1. | Main Idea | 10 | 1, 2,3, 4,5,6, 8, 11, 12,15 |
| 2. | Supporting Details | 5 | 7, 9, 10, 13, 14,  |
|  | Total | 1. **items**
 | **15 items** |

1. **Analyzing Data Technique**

 After collecting data, the writer qualified it based on its kind. To analyze data, the writer uses statistical approach for quantitative data. To compare the result of research between experiment class and control class, the writer used step as followed:

* 1. Qualification of data

The data from the result of test is qualified For reading pre-test and post-test, the correct answer is given score 1, and the incorrect answer is 0 in multiple choice and fill in the blanks[[7]](#footnote-8) and will assess the students' answer sheets one by one then calculated by formula scoring adopted from Purwanto as followed:

|  |  |  |
| --- | --- | --- |
| NP = | *R* | x 100 |
| *SM* |

Where:

NP : expected score

*R* : student’s score

*SM* : maximum score

*100* : constant’s number[[8]](#footnote-9)

* 1. Make frequency distribution of each class.
	2. Make polygon graphic.
	3. Calculate test of normality by Lilliefors test as followed:
* Determine mean for controlled (X) and experiment (Y) class by formula:

**X =** $\frac{∑fx}{∑f}$ **Y =** $\frac{∑fy}{∑f}$

* Determine deviation standard for controlled (X) and experiment (Y) class by formula:

SDx = $\sqrt{\frac{∑fx^{2}}{∑f}}$ SDy = $\sqrt{\frac{∑fy^{2}}{∑f}}$

* Make the table of Lilliefors test

(The formula adopted from Supardi&Darwyansyah)[[9]](#footnote-10)

* 1. Calculate t-test by formula as followed:

to= $\frac{M\_{x}- M\_{y}}{\sqrt{\left[\frac{∑x^{2}+∑y^{2}}{∑f\_{x}+∑f\_{y}-2}\right]\left[\frac{1}{∑f\_{x}}+\frac{1}{∑f\_{y}}\right]}}$

Where:

Mx = $\frac{∑x\_{different}}{∑f\_{x}}$ My = $\frac{∑y\_{different}}{∑f\_{y}}$

∑x2 = $∑x\_{different}^{2}-\frac{\left(∑x\_{different}\right)^{2}}{∑f\_{x}}$ ∑x2 = $∑y\_{different}^{2}-\frac{\left(∑y\_{different}\right)^{2}}{∑f\_{y}}$

(The formula adopted from Arikunto)[[10]](#footnote-11)

1. Yogesh Kumar Singh, *Fundamental of Research Methodology and Statistics,* (New Delhi, New Age International Publishers, 2006), p.134. [↑](#footnote-ref-2)
2. David Nunan, *Research Methods in Language Learning,* (New York: Cambridge Uni

versity Press, 1992), p.41. [↑](#footnote-ref-3)
3. Sugiyono, *Metode Penelitian Pendidikan*,(CV Alfabeta. Bandung , 2009) p.363 [↑](#footnote-ref-4)
4. *Ibid.,* p.130. [↑](#footnote-ref-5)
5. Nunan, *Op. cit.,* 231. [↑](#footnote-ref-6)
6. Arikunto, *Op.cit.,* p.131. [↑](#footnote-ref-7)
7. M. Ngalim Purwanto, *Prinsip-Prinsip dan Teknik Evaluasi Pengajaran* (Bandung: PT Remaja Rosdakarya, 2000) p.64-66 [↑](#footnote-ref-8)
8. M. Ngalim Purwanto, *Ibid.,* p.102 [↑](#footnote-ref-9)
9. Supardi&Darwyansyah, *Pengantar Statistik Pendidikan,*(Jakarta: Diadit Media, 2009) p.85 [↑](#footnote-ref-10)
10. Arikunto, *Op.cit.,* p.312-313 [↑](#footnote-ref-11)