

## CHAPTER III

### METHOD OF THE RESEARCH

#### A. The Method of Research

In this research the writer use experimental, experimental research is simple a way of learning something by varying some condition and observing the effect on something else.

Type of experiment research:

- a. Pre-experiment: may have pre and post treatment test, but lacks a control group.
- b. Quasi experiment: has both pre and post-test and experimental and control groups, but no random assignment of subjects.
- c. True experiment: have both and post-tests, experimental and control groups, and random assignment of subjects.

The writer conducted the research by applying quasi experiment. It is compare the result of two groups between experimental and control class. In this research the writer gave pre-test and post-test experimental. A pre-test performed to diagnose the current student's ability in writing materials before treatment is applied. Meanwhile, post-test used to measure the effectiveness of learning after applying treatment.

In applying this research, the writer teaches about using problem based learning approach on writing ability as experimental class, and for class control use traditional strategy to

compare students' learning outcomes in "giving opinion" material.

### **B. Place and time of the research**

The writer takes SMA Al-Khairiyah Kelapian as the object of research. SMA Al-Khairiyah Kelapian located Kp. Kelapian, Kec. Pontang, Serang. The writer chooses this school as place of the research because of the writer would like to know the effectiveness of Problem-Based Learning approach as one approach in recommended curriculum 2013.

### **C. Population and Sample**

Population is case situation or individual who share one or more characteristic.<sup>1</sup> The population of this research is the whole student at the second grade of SMA Al-Khairiyah Kelapian that consisted of experiment class 25 students and control class 22 students. So, the total numbers of population are about 47 students.

The taking sample, the writer gates with quasi experiment method were has both pre and post-test and experimental and control groups, but no random assignment of subject. The writer uses two classes which have 47 students. The first is experimental class and the second is a control class. The writer chose class XI

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<sup>1</sup> David Nunan, *Research Method in Language Learning*, (Cambridge: Cambridge University Press, 1992), p. 231

MIA which consist of 25 students as experimental class and class XI IIS which consist of 22 students as control class.

#### **D. Instrument**

The researcher used writing test instrument to get the data. The writing test was chosen because the researcher required understanding of the students' ability to explor their tought and their ideas. The writing test were related to the particular material. The material was "giving opinion".

There were several ways in administering the test. First, the researcher gave the text. Second, students read and found the problem in the text, than discussed the problem, they developed the result by looking for material problems from other sources, such as magazine, television, newspaper and so on. The last, they analyzed and evaluated the result from problem solving as principed in problem-based learning.

#### **E. Data Collection**

In this research, the writer used writing test in gathering data those are pre-test and post-test, the test gave to the students.

#### **Test**

The writer uses pre-test and post-test as an instrument, the writer takes the students' score data collecting. Pre-test and post-test doing at both classes to compare the result of two groups. After pre-test the researcher giving treatment using problem

based learning for experimental class and using traditional method in control class.

### **F. Data Analysis**

Data analysis is the procedure of experiment, to find out the differences of the student score the writer use t-test. Test “t” or t-test is one statistic test which use to find out the truth or falseness null hypothesis which explain that takes sample research randomly from the same population, there is no different significant.

After take in data from the observation, pre-test and post-test they were analysing and processed by using statistic calculation of the t-test formula with the significance degree 5% the researcher used the step below:

1. Determine variable as the analysis technique for comparative research test.

Determining mean distribution score of both variables, with using:  $MX = MX1 - MX2$  and  $MY = MY1 - MY2$

2. Determining the percentage distribution score of both variables, with using

Determining the percentage of the average score of variable X:  $\% = \frac{MX}{(MX+MY)} \times 100\%$

3. Determining the percentage the average score of variable Y:  $\% = \frac{MY}{(MX+MY)} \times 100\%$

4. The test analysing is determine t-test by formula:

$$t_0 = M_D / (SE_{MD})$$

“T” test is formula to analysis between two variables with using t test to know the influence of using problem based learning in teaching writing ability.

Determination mean of difference (MD), by formula:  
 $M_D = \Sigma D / N$

Determining standard deviation:  $SD_D = \sqrt{((\Sigma D^2) / N - (\Sigma D / N)^2)}$

Determining standard error from mean of difference:

$$SE_{MD} = (SD_D) / \sqrt{(N-1)}$$