### **CHAPTER III**

### RESEARCH METHOD

This study aims to know whether there is any difference on students' English writing achievement between those taught by guiding question technique and traditional technique. This chapter presents the description of the research method used in this study.

The discussion covers the research design, hypothesis, research variable, the population and sample, setting of the study, research instrument, research procedure, data collection technique, and data analysis technique.

### A. Research Design

According to Trochim, research design provides the glue that holds the research project together. A design was used to structure this research, to show how all the major parts of the research project-the samples of groups, measures, treatments or programs, and methods of assignment-work together to address the central research questions. This study was a quantitative research. Quantitative research method can be interpreted as research method that based on positivism philosophy, used to research on certain population or sample, data collection uses research instrument, data analysis was quantitative/statistic characteristic, in

<sup>&</sup>lt;sup>1</sup> William M. K. Trochim, *The Research Methods Knowledge Base*, 2<sup>nd</sup> Edition (Ithaca, N.Y: Cornell Custom Publishing, 1999) 171

purpose to testing hypothesis that had been settle.<sup>2</sup> As this research aims at the effectiveness of guiding question techniques in teaching English writing text, the quantitative method suit the purpose of this research.

Quasi experimental design was applied in this research. Experimental research was the way to find a causal relationship between two factors that are deliberately caused by the researcher by reducing or setting aside other factors that interfere. Experiments are always done with the intent to see a treatment.<sup>3</sup> A quasi experimental design is one that looks a bit like an experimental design but lacks the key ingredient-random assignment.<sup>4</sup> In this design, the subject can not be randomly assigned to either the experimental or the control group.<sup>5</sup>

With this quasi experimental design, two classes of tenth grade in SMK NU Lamongan selected as the control group and experimental group. The control group was taught by traditional technique and the experimental group was taught by guiding question technique. The purpose of pretest was to know both of groups were has similar ability or not before the implementation of guiding question technique. While the purpose of posttest was to know is guiding question more effectiveness that traditional technique or not. The design of pretest and post-test, control and experimental group are presented as follows

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<sup>&</sup>lt;sup>2</sup> Sugiyono, Statistika untuk Penelitian (Bandung: Alfabeta Bandung, 2010) 8

<sup>&</sup>lt;sup>3</sup> Suharsimi Arikunto, *Prosedur penelitian Suatu Pendekatan Praktek* (Jakarta:Bima Aksara, 1987) 3 <sup>4</sup> William M. K. Trochim, *The Research Methods Knowledge Rase* 2<sup>nd</sup> Edition (Ithaca, N.Y. Cornell

<sup>&</sup>lt;sup>4</sup> William M. K. Trochim, *The Research Methods Knowledge Base*, 2<sup>nd</sup> Edition (Ithaca, N.Y: Cornell Custom Publishing, 1999) 215

<sup>&</sup>lt;sup>5</sup> (http://eprints.umm.ac.id/1921) Browsed on Thursday, 11 May 2012 at 8.48 A.M

Table 3.1

The Process of Experimental Research

Group	Pretest	Treatment	Post-test
A	$O_1$	X	$P_1$
В	$O_2$	-	$P_2$

## Explanations:

A : The experimental group

B : The control group

O<sub>1</sub> : The pretest given before treatment in experimental group

O<sub>2</sub> : The pretest given in control group.

X : The treatment using probing and prompting technique

P<sub>1</sub> : The posttest given after treatment in experimental group

P<sub>2</sub> : The post-test given in control group.

The control group is coded as B while the experimental group is coded as A. Both classes, was do pretest  $(O_1 \text{ and } O_2)$ . It is administered in order to know students' English writing achievement before the treatment. After that, the treatments (X) conducted to the experimental groups who were taught by guiding question technique. At the end of the treatment, posttest  $(P_1 \text{ and } P_2)$  administered

to both the experimental and the control group to know the students' English writing achievement. Therefore, the purpose of this study was to answer the research problem as written in the first chapter, exactly to find the effectiveness of guiding question technique in teaching English writing text among students year X of SMK NU Lamongan.

### **B.** Research Hypothesis

This study consist of two hypotheses, they are:

Ha: There is a significant difference in students' English writing achievement taught by guiding question technique and traditional technique at the tenth group of SMK NU Lamongan.

Ho: There is no significant difference in students' English writing achievement taught by guiding question technique and traditional technique at the tenth group of SMK NU Lamongan.

Explanations:

Ha will be accepted if t-value < t-table

Ho will be accepted if t-value > t-table

T-table is the score gotten from t distribution, while t-value is the score gotten from calculation using the formula of t-test.

#### C. Research Variable

This research consists of two variables; they are the independent variable and the dependent variable. The independent variable is the single variable that is not influenced by other variables, while the dependent variable is a kind of variable that is affected by other variables.<sup>6</sup>

## 1. Independent Variables

The independent variable in this research is the guiding question technique that will be use to make students more interest in teaching and learning process of English writing.

### 2. Dependent Variables

The dependent variable is the English writing achievement of students year X at SMK NU Lamongan.

### D. Population and Sample

#### 1. Population

Before carrying out this research, the writer determines the respondent first. Population was the total of subject research.<sup>7</sup> In this research, the population is the students year X at SMK NU Lamongan which consists of four departments. The first department is office administration department

<sup>&</sup>lt;sup>6</sup> Cholid Narbuko - Abu Ahmad, *Metodologi Penelitian* (Jakarta: Bumi Aksara 1997) 119

<sup>&</sup>lt;sup>7</sup> Suharsimi Arikunto, *Prosedur penelitian Suatu Pendekatan Praktek* (Jakarta:Bima Aksara, 2006) 130

(APK), the second department is accounting department (AK), the third department is computer engineering and networking department (TKJ) and the last department is multimedia department (MM). There are two classes from APK department, one class from AK department, three classes from TKJ department and two classes from MM department. So, there are eight classes of year X at SMK NU Lamongan that consist about 264 students.

## 2. Sample

Sample was a smaller group or the objects selected from a large group (Population)<sup>8</sup>. The researcher was taken the sample using cluster (area) random sampling. In this research, APK department was taken as the sample because writing was related to the administration activities, such as administration of letter. There are two classes, they are A and B class. Each class consists of about 40 students. So the total number of the sample is 80 students. These classes are chosen because they are in the same major and their ability is almost same.

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<sup>&</sup>lt;sup>8</sup> Ibid, p.132

# E. Research Setting and Subject

The subject and setting of this study is the first grade of SMK NU Lamongan. SMK NU Lamongan was located in Jl.Veteran No.55 A Lamongan. The students from APK department were selected as the subject of this study because they get a specific learning based on their department. One of them is writing letter.

#### F. Research Procedure

The procedure of this study covered the following steps, namely: pretest, treatment 1, treatment 2 and posttest. To answer the research question of this study, pretest and posttest was collected. Pretest was conducted before treatment while posttest was conducted after treatment. Before the treatment was given to the experimental group, the researcher has been given some information to the teacher about guiding question and how to teach using guiding question because the researcher become an observer in the learning process. The English teacher of SMK NU Lamongan has been taught the students in the experimental group using guiding question technique. Such activities were conducted to both groups to see the differences achievement both of group. The research schedule is figured out in the text following table:

Table 3.2

The Research Procedure

NO	Experime	ntal Group	Control Group		
	Date	Theme/Material	Date	Theme/Material	
1	8 <sup>th</sup> June	Pretest	8 <sup>th</sup> May	Pretest	
2	18 <sup>th</sup> June	Treatment 1	18 <sup>th</sup> June	Treatment 1	
		Taught using		Taught using	
		guiding question		Traditional	
		techniques with		techniques with	
		the theme office		theme the office	
		equipment.		equipment.	
3	20 <sup>th</sup> June	Treatment 2	20 <sup>th</sup> June	Treatment 2	
		Taught using		Taught using	
		guiding question		Traditional	
		techniques with		techniques with	
		the theme		the theme	
		profession		profession	
4	22 <sup>th</sup> June	Posttest	21 <sup>th</sup> June	Posttest	

The researcher was prepared the teaching process first before administering the activities above. It was undertaken two steps: First, prepared an appropriate

material for teaching writing process. Second, the researcher organized teaching procedure in the control and experimental group.

# 1. The Control Group

The control group was toughed as usual without the strategies as in experimental group. For the first meeting the students were given pretest as in experimental group and the second and third meeting the students were taught as usual without treatments. The last meeting the students were given posttest.

## a) First Treatment

The first treatment was held on 18<sup>th</sup> June, 2012. In this time the students was taught used traditional technique. The theme of this meeting was about "The office equipment" The teacher ask the students to describe mobile phone without any treatment.

The first treatment was started with the greeting and shared the purpose of the study. Then the teacher ordered the students to open the book and gave some explanation based on the subject. Teacher asked the students to describe mobile phone without any monitoring. After that, the teacher asks the students to submit the work. The teacher gives the students a home work to write about "your favorite teacher".

# b) Second Treatment

The second treatment was held on 20<sup>th</sup> June, 2012. In this time the students was taught to use traditional technique. The theme of this meeting

was about "The Profession" The teacher ask the students to describe "your favorite teacher" without any treatment.

The second treatment was started with the greeting and shared the purpose of the study. Then the teacher ordered the students to submit their home work. The teacher asks the students to open the book and explains them about generic structure of descriptive text. After that, the teacher ask the students description the profession their father. In the end, the teacher gives some question to check the students' understanding about the material.

# 2. The Experimental Group

Pretest was given to the experimental and control groups on the first meeting. The treatments for the experimental group were conducted on the second and third meeting and posttest was given on the last meeting of this research.

The treatments of this study were the use of guiding question technique for the experimental group. Guiding question technique would be a help for the students in investigating the question and it would direct students in order to choose, find and create the ideas of writing and then developing students' ideas into understand. The process of guiding question is very useful to help the students to generate and organize ideas into a good composition of writing. So, the product of writing can easier understand by the reader.

#### a) First Treatment

The first treatment was held on 18<sup>th</sup> June 2012. In this time the students would be taught to use guiding question technique. The theme of the activities was the office equipment.

The first treatment was started with the greeting and shared the purpose of the study. Before giving treatment by guiding question, the teacher shows a picture of book. He was gives some question about the picture and the students answer orally. Then the teacher was divided the students into two groups and give the first group a picture of mobile phone and the second group was given a picture of index book. The students write down the words that related to the topic for each group. The words above might help the students in writing.

Then the teacher showed a picture of mobile phone. Next, the teacher writes a question in the blackboard and give instruction the students to answer the question above by long answer as well as students can. Than, the teacher writes the second question and ask the students to answer as the first question until the last question. The following questions are;

- What do you know about mobile phone?
- What are the physical appearances of mobile phone?
- How are the characters of mobile phone?
- What are the functions of mobile phone?
- How you can use your mobile phone?

- Can you operate mobile phone?
- If you do not have mobile phone, where will you get it?

After write a description of mobile phone by answering the teacher's question, the students submitted their work. Than, the teacher give a home work for the students to make description of index book. The teacher asked them to write down the questions and the words in the black board as the escort when they were writing.

## b) Second Treatment

The second treatment was held on 20<sup>th</sup> June 2012. In this time the students would be toughed to use guiding question technique with different theme as the first meeting but the activities was similar. The theme of this meeting was the profession.

The second meeting did not so different with the first meeting. The treatment was started with the greeting and shared the purpose of the study. Then the teacher asked the students to submit their home work and the teacher shared about the theme to day. Next, the teacher writes a question in the blackboard and give instruction the students to answer the question above by long answer as well as students can. Than, the teacher writes the second question and ask the students to answer as the first question until the last question. The following questions are;

- Do you have a favorite teacher?
- Who is your favorite teacher?

- What do you know about your favorite teacher above?
- What do you think about your favorite teacher?
- What are the physical appearances his/her body?
  - Beautiful, handsome, fat, thin, etc?
  - Her/his height, hair, skin, eyes, etc?
- Do you like your favorite teacher?
- Why do like love your favorite teacher?
- What do you like from your favorite teacher?

The teacher asked students to submit their work. Then, one of students work was chosen by the teacher as the example to deliver explanation how to write and organize idea when writing.

### G. Data Collection Technique

In conducting a research, it is necessary to collect the data required. Data collecting can be done in many setting, various sources, and various means. <sup>9</sup> It also known that research was a system attempt to provide answer to problems or to question. Then, to solve the problem, pretest and posttest was taken to collect the data.

## 1. Pretest

The data was collected through pretest in both classes in order to know is the experimental group and control group having similar ability or not

<sup>&</sup>lt;sup>9</sup> Sugiyono, Statistika untuk Penelitian, (Bandung: Alfabeta Bandung, 2010) 137

before the implementation of guiding question technique. Pretest was administered to both classes to measure the students' English writing ability before the treatment. The pretest conducted on June 8, 2012.

#### 2. Posttest

After guiding question technique implemented, than the posttest was given. Posttest use to know the students' writing result after the experiment. The result of the test was scored and calculated. It was conducted on June 22, 2012.

#### H. Research Instrument

In quantitative research, instrument was applied to collect the data. Instrument of this research was applied to measure variable value that was accurate. In this research, test and observation was used to collect the data.

## 1. Pretest

In this research, the pretest was used to find the students' English writing ability in descriptive text. It was conducted to all class X APK 1 and X APK 2 at SMK NU Lamongan. They ware selected because their writing score in the middle test of second semester was similar. The mean score of class X APK 1 is 59 and the mean score of X APK 2 is 60.

#### 2. Posttest

Afterward, the posttest was conducted to measure the effect of guiding question technique used after the application of treatment in experimental

group. The use of posttest also determines whether the test was effective or not by comparing the achievement of posttest scores in both classes those experimental and control.

### I. Data Analysis Technique

In this research, there was only one question with one data. The data of the question about the significant different of increasing writing achievement between who taught using guiding question technique and who was not taught without using guiding question technique. The data was collected from observation class activity and students' test.

After collecting the data of pre-test and pos-test from the experimental group and control group, the researcher tried to find out the difference between the achievement of the experimental group and the control group. Then, the data was analyzed using statistical calculation of t-test to find out whether the differences of the score between the experiment class and the control class are significant or not. T-test is used to measure and compare the differences of means score between experimental group and control group. <sup>10</sup>

To know is there any advantages in use of guiding question technique or not in teaching writing, t-test was applied in this research. Before that, the researcher was did normality test and homogeneities test. The normality test

<sup>10</sup>A.E.Bartz, *Basic Statistical Concepts in Education and the Behavior Sciances* (Minneapous: Burgess Pub, Co, 1976), p.293

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was used to check whether the posttest score of experimental group and control group were normally distribution or not. While homogeneity test was used to calculate the homogeneity of variance of both experimental and control group posttest score.<sup>11</sup>

### 1. Normality test

The normality test was used to check whether the posttest score of experimental group and control group were normally distribution or not, the following steps are:

- a. Determine the number of intervals class. For normality using
   Chi Square test, the number of interval is 6. This appropriate
   with 6 fields in Baku Normal Curve.
- b. Determine the limitation of interval class, the formula is,

  The long interval class =
- c. Arrange into a frequency distribution table

Table 3.3 Normality Test table

Interval	EI Stan	E1 9/15 24	#E E5 E1 ## \$10 P4 S	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Total				

<sup>11</sup> Zaenal Arifin, Metodologi Penelitian Pendidikan (Suranaya: Lentera Cendikia, 2009) 123

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# Explanation:

- frequency / the number of data from the result of pretest
- the number / frequency of the expected (percentage area of each field multiplied by n)
- the differences between and
- d. Calculate the frequency of the expected)
- e. Calculate  $\square$  based on the percentage area of each field in normal curve, than multiplied by the number of data from the result of pretest (the number of individuals in the sample). Number of individuals in the sample = n.
  - 1) The first line:  $2.7 \% \times n$
  - 2) The second line :  $13,53 \% \times n$
  - 3) The third line :  $34,13 \% \times n$
  - 4) The fourth line : 34,13 % x n
  - 5) The fifth line: 13,53 % x *n*
  - 6) The sixth line:  $2.7 \% \times n$
- f. Include the value of to the table columns and than calculate the value of and .

g. Compare the value of with with label. If smaller than with larger otherwise normal distribution of data, and when

# 2. Homogeneity Test

The homogeneity test was used to check whether the posttest score of experimental group and control group have same variants or not. The following steps of homogeneity test as followed:

a. Find the biggest variant score and the smallest variant score, the

formula is:
$$F \ \boxed{\frac{S_L^2}{S_S^2}}$$

Explanation:

 $S_L^2$  = the larger of variance

 $S_S^2$  = the smaller of variance

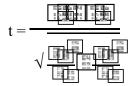
b. Compare  $F_{score}$  with  $F_{tabel}$ , the criteria is  $F_{score} < F_{tabel}$ . It is mean the homogeneity and comparative test will go on.<sup>12</sup>

#### 3. T-Test

T test was used to find out the difference of the students' English writing achievement in the experimental and control group. Next, the students' score in posttest calculate using the formula bellow:

<sup>12</sup> Zaenal Arifin,.....125

a. To test the result of posttest between experimental and control group. The formula is:



### Explanation:

- The average score of control group
- The average score of experimental group
- The derivation of control group
- The derivation of experimental group
- The variant of control group
- The variant of experimental group. 13
- b. After all data calculate, the number of degree of freedom calculates. The formulas is:

$$df =$$

Explanation:

df = Degree of freedom

N1= Number of Individual in experimental group

N2 = Number of individual in control group

 $^{\rm 13}$ Sugiyono, Statistik Untuk Penelitian (Bandung: Alfabeta, 2010) 122