CHAPTER III

RESEARCH METHODE

In this chapter, we will discuss about subjects of the study, data of research, data collection technique and data analysis. And each of them will discussed as:

3.1 Research Design

The design of this study use a descriptive research. It means that the study just describes the existence or quality of the teacher made English test. Descriptive research only describes the phenomena, situation and condition that happen during the study and the nature of a situation at the time of study.

3.2 Object of the Research

The object of this research is the English *UAS* test semester 2 2008/2009 the first year students of *SMA* Muhammadiyah 2 Sidoarjo in X-1 and X-2 class there are 44 students, each class. And I use random sampling technique to get this class

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3.3 Data and Source of the Data

The source of the data is the teacher made English test in *UAS* semester 2 2008/2009 for the first year students of *SMA* Muhammadiyah 2 Sidoarjo. Still to be questioned the test is following the right principles or not. Because the test is used to know the final quality of students achievement of the instructional program. From the source of the data, the data of this study:

1. The form questions of the teacher made English test items in *UAS* semester 2 2008/2009 for the first year students and the key answers.
2. The student's answers of the teacher made English test items in *UAS* semester 2 2008/2009 for the first year students.
3. The students' scores of the teacher made English test in *UAS* semester 2 2008/2009 for the first year students.

3.4 The step of Data Collection

First, the teacher are made the test by following the objectives stated in English curriculum. Then it is given to the students, and the test will be given to the students and they answer. After that the answer is collected and scored. The test and the answers of the students' scored and analyzed and find the result.

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3.5 The steps of Data Analysis

The data must be analyzed in order to get the empirical evidence of the research. Statistic method will be used for analyzing the content validity, reliability, the index of difficulty, and index of discrimination, it shows information in form of number.

3.5.1 Analyzing Content Validity

Present the way of how to analyze the content validity of a test by checking up of every item of the test with the specific objectives as stated in the curriculum.[61] And the follow steps are taken:

1. Use the table of specification based on the objectives of teaching learning of the first year students of senior high school stated in the English curriculum.
2. Match the items in the test and the objectives of teaching learning stated.
3. Place each item number in an appropriate intersection of the objectives in the English curriculum to identify the representative samples.

Analyzing the Reliability

The steps to analyze reliability of the objective test:

[61] Arikunto, Suharsimi. 2003. *Prosedur Penelitian Suatu Pendekatan Praktik.* Jakarta : PT. Rineka Cipta.pg.67

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1. Making tabulation of the testees' scores for each item.
2. Measuring the mean of the testees' scores. It is obtained by dividing the sum of separate scores with the total number of testees'.

   Measuring the standard deviation by using the formula:[62]

   $$s.d = \frac{\Sigma}{\sqrt{N}}$$

   Where:

   s.d = standard deviation

   d = the deviation of each score from the mean

   N = the number of testees

3. Measuring the coefficient of reliability since it uses than other method of estimating reliability since it to avoid trouble some correlation and involves only the mean and the standard deviation of the scores. Also, this formula is the least of all the reliability estimation procedures.[63]

   $$r = \left[\frac{N}{N-1}\right]\left[1 - \frac{m\ (N-m}{Nx^2}\right]$$

[62] Heaton, J.B. 1988. *Writing English Language Test.* New York: Longman.pg.170
[63] Heaton, J.B. 1988. *Writing English Language Test.* New York: Longman.pg.157

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Where:

r = Coefficient reliability

N = The number of items in the test

M = The mean score on the test for all the testees

x = The standard deviation of all the testees score

4. Checking the result of the reliability with the criteria given whether the test item is reliable or not.

The steps analyze reliability of the subjective test:

a. Making tabulation of the testees' score for each test item.

b. Measuring the variance of each item by using the fomula:

$$\sigma^2 = \frac{\Sigma X^2 - \frac{(\Sigma X^2)}{N}}{N}$$

Where

σ^2 = The variance

X^2 = Total square of the score

N = The number of testees

X = The total square

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5. Sum the variance of each item. Then, calculate the reliability of the essay test by using the formula:

$$r = \frac{n}{n-1} \left[1 - \frac{\sum \sigma i^2}{\sigma^2 t} \right]$$

Where:

r = The reliability

$\Sigma \sigma i^2$ = The sum of rater variances for all questions

$\Sigma^2 t$ = The variance of total essay test score

4. Checking the result of the reliability with the criteria to determine whether or not the test is reliable.[64]

3.5.3 Analyzing the Item Difficulty

The index of difficulty shows how easy of difficult the particular items proved in the test.

a. Arranging the students' scores from the highest scores to the lowest one.
b. Finding the top and the bottom of the students' score, as upper and lower groups. Dividing the scripts in rank order of total score into two groups of equal size, i.e., the top half as upper group and the bottom half as the lower group. Each group consist of 20 students.

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[64] Arikunto, Suharsimi. 2003. *Prosedur Penelitian Suatu Pendekatan Praktik.* Jakarta : PT. Rineka Cipta.pg.109

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c. Computing the items' difficulty by using the formula:[65]

$$F.V = \frac{CorrectU + CorrectL}{2n}$$

Where :

F.V	= The facility value or the index of difficulty
Correct U	= The number of students in upper group who answered the items correctly
Correct L	= The number of students in lower group who answered the items correctly
N	= the number of students in each group

3.5.4 Analyzing the Discriminating Power

The discriminating power of the test item is its ability to differentiate between the students who have achieved well (upper group) and those who have achieved poorly (lower group). To estimate the items discriminating power is by comparing the number of students in the upper group and the lower group who answered the item correctly. Then I will computing the discrimination index by using the formula:[66]

[65] Heaton, J.B. 1988. *Writing English Language Test*. New York: Longman.pg.176
[66] Heaton, J.B. 1988. *Writing English Language Test*. New York: Longman.pg.174

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$$D = \frac{\text{CorrectU} + \text{CorrectL}}{n}$$

Where:

D = discrimination index

Correct U = The number of students in upper group who answered the items correctly

Correct L = The number of students in lower group who answered the items correctly

N = the number of the students taking the test

3.5.5 Analyzing the Effectiveness of the Distracters

The analysis of the effectiveness of distracters is done by comparing the number of the students in the upper and the lower group who selected each incorrect alternative. A good distracter would attract more students' from the lower group than the upper group.

Procedure for calculating an index for distracters items as follows:

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Table 1: The Example of Analyzing the Effectiveness of Distracters.

Items	Upper Group	Lower Group
A		
B		
C		
D		

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