

CHAPTER III

RESEARCH METHOD

In this chapter, the writer presents the research method that is used in this study. It consists of research design of the study, population and sample of the study, instrument of study, try-out test, data collection, and data analysis.

3.1 Design of the Study

The design of this study is descriptive research. The writer used a combination of qualitative and quantitative approach. It is because the purposes of this study were to identify and classify the types of the structures of modification's errors and also to find the frequency of the occurrence of each type of the structures of modification's errors made by the 8th grade students of SMPN 4 Gresik. According to Creswell (1994: 178), one of the design models of the qualitative and quantitative studies is the mixed-methodology design, in which the research combines qualitative and quantitative approaches throughout the study, such as in introduction, the purpose statement, the research questions, and the method. To identify and classify the types of the structures of modification's errors, the writer used qualitative procedures, whereas, to find out the frequency of occurrence of each type of the structures of modification's errors, the writer used quantitative procedures.

3.2 Population and Sample

All 8th grade students of SMPN 4 Gresik was chosen as the population

of this study because the writer wanted to know the structures of modification's errors made by the students and also the frequency of the occurrence of each type of the errors that were made by them. Besides, there is no research study yet that tried to find the structures of modification's errors made by the 8th grade of SMPN 4 Gresik.

In this study, the writer used sample to represent the population because the population is big and homogenous. There are many kinds of methods to get sample in a research but in this study, the writer used the random sampling. By using random sampling, the students will get a same chance to be selected.

The population of this study consisted of eight classes of the 8th grade. They were class A until class H. Then, by using random sampling, the writer wrote students name on papers. After that, the writer took forty students randomly from the total of the population as the sample of this study. According to Darsono (1999: 148), in quantitaive research most researchers determine the minimum numbers of subject are thirty.

3.3 Instrument of the Study

The instrument used by the writer was test. The test was grammatical test. The forms of the test were multiple choices and combining words into phrase. In the multiple choice form, the students were asked to choose a correct English phrase. In combining words into phrase, they were asked to arrange English phrase from the words in the bracket that had been provided by the writer. The total numbers of items were fifty items and the students were given 45 minutes to finish the test. The test items consisted of twenty five items of multiple-choice and

twenty five items of combining words into phrase. The test was administered to 40 students of the 8th grade students of SMPN 4 Gresik that had been selected as the sample of this study. In this test, the writer gave fifty items of structures of modification. It means each type of structures of modification is represented by two items which is drawn in table 3.3.1.

Table 3.3.1. Identification of Structures of Modification used in the Test Items

Struc. of Modification	List of Struc. of Mod. in the Items	Struc. of Mod. in the Items	Items Number
Noun as head	Noun as noun-modifiers	-birthday party	7
		-Dewi Sri restaurant	27
	Verb as noun-modifiers	-money to buy	14
		-the way to keep	45
	Adjective as noun-modifiers	-smart girl	1
		-popular sport	42
	Adverb as noun-modifiers	-discussion yesterday	17
-restaurant here		26	
Preposition phrase as noun-modifiers	-story about a princess	3	
	-foods from Indonesia	29	
Function word as noun-modifiers	-its eyes	19	
	-my suggestion	28	
Verb as head	Noun as verb-modifiers	-costs Rp 45.000	16
		-run 1 kilometer	46
	Verb as verb-modifiers	-like to visit	2
		-go to fish	47
	Adjective as verb-modifiers	-fall flat	10
-came true		40	
Adverb as verb-modifiers	-sing beautifully	6	
	-speak well	32	
Preposition phrase as verb-modifiers	-live without friends	4	
	-walk along this road	36	
Adjective as head	Noun as adjective-modifiers	-sky blue	20
		-iced cold	30
	Verb as adjective-modifiers	-nice to meet	9
		-nice to know	41
Adjective as adjective-modifiers	-bright blue	21	
	-light green	38	
Adverb as adjective-modifiers	-fresh here	5	
	-always popular	43	

	Preposition phrase as adjective-modifiers	-beautiful like a princess -good for my health	11 44
	Function word as adjective-modifiers	-very beautiful -cheap enough	25 33
Adverb as head	Noun as adverb-modifiers	-two miles away -ways up	22 49
	Adverb as adverb-modifiers	-usually honestly -really politely	8 31
	Preposition phrase as adverb-modifiers	-outside in the dark night -today in the sunny day	15 48
	Function word as adverb-modifiers	-rather loudly -very easily	12 35
Func. Word as head	Noun as function word-modifiers	-1 kilometer from my house -100 meters from here	23 37
	Adverb as function word-modifiers	-exactly over -soon before	18 50
	Preposition phrase as function word-modifiers	-very like an actress -enough for your information	13 39
	Function word as function word-modifiers	-rather more (expensive) -so many	24 34

3.4 Try-out Test

Try-out test was conducted by the writer on Saturday, 14th, November 2009 and it was administered to 40 students of the 8th grade students of SMPN 4 Gresik that were not selected as the sample of this study. The total numbers of items in try-out test were sixty items and the students did the test in 45 minutes. It consisted of thirty items of multiple-choice and thirty items of arranging words into phrase. The instructions were given clearly in English and Indonesian language in order that the students understood how to do the test. From the result of the try-out, the reliability, validity, the level of difficulty and the discrimination indexes of the test were estimated.

The students' answers were collected and analyzed to determine their effectiveness in terms of item difficulty and item discrimination. The item difficulty is used to show percentage of the subjects who answer each item correctly, while the item discrimination was used to reveal how good each item discriminates the good subjects from the poor one.

3.4.1 Difficulty and Discrimination Indexes

According to Heaton (1975: 176), in determining the items' difficulty, the following formula was used:

$$FV = \frac{\text{Correct U} + \text{Correct L}}{2n}$$

FV = the index of difficulty

U = the number of correct answer of upper group (e.g. the top 27.5 percent) on the particular items.

L = the number of correct answer of lower group (e.g. the bottom 27.5 percent) on the particular items.

N = the number of students in one group.

The interpretation of the FV indices is based on the difficulty levels which range from .10 to .90. The suitable index of difficulty for the accepted items is to the one which facilitated values between .10 and .90. If the index of difficulty is below .10, it is considered too difficult, while if it is more than .90, it is considered to be too easy. In this study, only those items which possessed difficulty indices between .10 and .90 were collected. It means:

Less than 0.20 : too difficult

0.20 – 0.80 : accepted

More that 0.80 : too easy

Besides, the discrimination index of a test is one of the important features of a test. Item discrimination index of each item is also analyzed to get information to which extent the item discriminates between those students who perform well and those who perform poorly on the whole test (Heaton, 1975: 174). In this study, the formula used to analyze the item discrimination index was the one suggested by Heaton:

$$D = \frac{\text{Correct U} - \text{Correct L}}{N}$$

D = Discrimination index

U = Upper half (27.5 percent of upper group answering correctly)

L = Lower half (27.5 percent of lower group answering correctly)

N = Number of candidates in one group

According to Heaton (1975: 175), the degree of discrimination power can range from -1 (=an item which is entirely that wrong way) up to +1 (=an items which discriminates perfectly); where 0 shows that it is an item which does not discriminate in any way at all. In this study, according to Djiwandono (1996:144), the level of discrimination index of item as follow:

0.50 - more = good

0.20 - 0.50 = fair

Less than 0.20 - 0.20 = poor

0	= no discrimination
Negative	= negative

Thus, the result of the analysis which showed the items of the try-out test, which did not fulfill the criteria of acceptability in terms of item difficulty and the item of discrimination were discarded. From the data, we know that there are 25 items that are accepted between 0.2 and 0.8 in multiple choice items. There are 5 items that must be revised that are number 9, 10, 16, 17, and 20. There are 26 items that are accepted in arranging words into phrase items. There are 4 items that must be revised that are number 40, 46, 47, and 50. The difficulty and discrimination indexes of try out test can be seen in appendix 4.

3.4.2 The Reliability of Test

Test reliability refers to the degree to which a test is consistent and stable in measuring what it is intended to measure. Reliability is a necessary characteristic of any good test. The formula of reliability of test that the writer used is Kuder Recharadson Method – using $T = 1$, $F = 0$ (Djiwandono: 152 and Heaton: 164).

$$R_{ii} = \frac{N}{N-1} \left[1 - \frac{(M(N-M))}{Nx^2} \right]$$

N = the number of the item

M = the mean score

X = the standard deviation

rii = reliability

The reliability coefficient of a test range is from zero to one in terms of

value. A reliability of 1.00 would indicate that a test is perfectly reliable, while quotient of zero would indicate a complete absence of reliability.

To know the mean of the test, the writer calculated it by using the formula below:

$$\text{Mean} = \frac{\sum fx}{N}$$

x = score

N = the number of testee

M = mean

f = frequency

The writer also used the formula below to know the standard deviation of the try out test.

$$sd = \sqrt{\frac{\sum d^2}{N}}$$

s.d = standard deviation

d = mean deviation

N = the number of the testee

The result of calculating the reliability of the try out test showed that the reliability coefficient was 0.8 (See Appendix 5). From the data, we can know this test has high reliability and it shows the consistent scores. So, this try out test is reliable to be tested to the students.

3.4.3 The Validity of Test

According to Heaton (1975: 153) the validity of a test is the extent to which it measures what it is supposed to measure and nothing else. The test must

aim to provide a true measure. The result of validity should contain the degree to which a test measures what it is intended to measure.

This study was aimed to analyze the language acquisition difficulty through errors made by the students in structures of modification. Each item of the test was designed to represent each type of structures of modification. There were sixty items represented thirty items for multiple-choice and thirty items for constructing phrase. Each type of structures of modification was represented by two items. Therefore, the test would be representative of the objective of the study. In other words, the test was valid.

3.5 Data Collection

The data was collected by administering the test on structures of modification to the 8th grade students of SMPN 4 Gresik after giving the try out test. The test was conducted on Saturday in 21st, November 2009. The writer collected the data with the help of two English teachers of SMPN 4 Gresik who were teaching the 8th grade.

3.6 Data Analysis

The data from the results of the students' work on the test were analyzed in three steps. The first step was identification of error, the second was classification into error types and the last one was tabulation the error. The analysis was done with the following procedures.

3.6.1 Identifying of the Errors

Errors made by the students were identified in this step. In this study, errors are defined as any deviation in constructing structures of modification found in the

students' works. When the students' answers were not in agreement with what were expected from the answer key, they were identified as errors. All of the errors were then added up to know the total number of errors made by the students.

3.6.2 Classifying into the Error Types

Errors were classified into their types after identifying them. The classifications of errors were based on each types of English structures of modification and based on surface strategy taxonomy in which errors can be classified as omission, addition, misformation and misordering.

3.6.3 Tabulating of the Errors

Quantitative analysis was used in order to find out the frequency of the occurrence of the structures of modification errors. The occurrence of the errors were counted and tabulated. The numbers of errors were presented in the form of percentage. The quantitative data were expected to show the students difficulties in structures of modification. The higher percentage of the errors is the more difficult structures of modification for the students.

To figure out the frequency of the occurrence of each error types, the writer used the following formula:

$$\frac{\text{Number of Errors of each type}}{\text{The total number of errors}} \times 100\%$$