

CHAPTER III

RESEARCH METHODS

This part clarifies research design and how to collect the data from the samples. The researcher encloses the procedure of this research and data collecting technique. The researcher also gives the scoring system and how the data are analyzed.

3.1 Research Design

This research saw the difference between the result before and after the application of drills as the technique. Therefore, a quantitative study that applies one-group pretest-posttest was chosen as the design. The research design is outlined as follows:

T1 X T2

Where:

T1 : Pre-Test (a test that is given before the treatment is applied)

X : Treatments (teaching listening through drill technique)

T2 : Post-Test (a test that is given after the treatment is applied)

(Hatch and Farhady, 1982: 20)

The researcher used one class as the experimental group which was selected by using simple probability sampling. It was carried out in order to see find the result of the application of drills technique for increasing students' micro skills of listening.

3.2 Population and Sample

The population of this research was the second year students of SMPN 3 Bandar Lampung which consists of seven classes VIII-a until VIII-g. The total number of students were 238 students. Each class consists of 32-36 students. In relation to the design, the researcher took two classes, VIII-e as the experimental class, and try out was conducted in VIII-b. Those classes were chosen randomly by lottery. It was applied based on consideration that every class in the population has the same chance to be chosen and in order to avoid subjectivity in the research (Setiyadi, 2006: 39). So, there is no ranking of the classes from superior to poor.

3.3 Research Procedures

The writer used some following procedures to get the best result of the research:

a) Administering the try out test

The tryout test was given to the students in order to know the quality of the test as the instrument of this research. It was administered to find out the test before it was used, whether the items are good or not in validity, reliability, level of difficulty, and the discrimination power. The tryout test was multiple choices that consist of 50 items with four alternative options A, B, C, and D. The try out test was conducted for 120 minutes.

b) Administering the pretest

The research was administered this test before giving treatments by using drills. There were 40 items of multiple choices test. It was conducted for 90 minutes.

c) Conducting the treatment

After the pretest, the researcher conducted the treatments for three meetings that took 90 minutes in every meeting. The researcher is going to teach listening that focused on micro skills by using drills as the technique to the students' experimental class.

d) Administering the posttest

The posttest was given to evaluate the students' micro skills of listening achievement after giving the treatments. The test was in the form of multiple choices that consist the 40 items and it was conducted for 90 minutes.

e) Analyzing the data

Both pretest and posttest results were analyzed by using Repeated Measures t-test to compare the data of the two means score (Hatch and Farhady, 1982:108). The researcher analyzed the improvement by comparing the scores of pretest and posttest from the experimental class. If the score of posttest was better than pretest, it means that there was a progress of students' micro skills of listening achievement.

f) Concluding and reporting the result of the data analysis

After analyzing the results of both pretest and posttest, the researcher drew the conclusion and the results of this research was reported in the script including suggestion from the researcher.

3.4 Data Collecting Technique

In this research, the instrument for data collection was in the form of questions of listening tests which included some aspects of micro skills. The questions were used as the measurement that consisted of a number of conversations with 40 multiple choices items. Each item had four options (A, B, C, and D) with one correct answer and three distracters. Then, to carry out the research, the researcher used the following techniques to collect the data, as follows:

3.4.1 Pretest

The pretest was given before the treatment was applied (teaching listening through drills technique). The purpose of this test was to know how far the students' ability in mastering micro skills of listening before the treatment. The researcher uses this test as an objective test in the form of multiple choice test. Because listening can generally be included in an objective test that a subjective test. The material that was tested was related to the School Based Curriculum or KTSP which was suitable with their level. The number of item in pretest was 40 items and was held for 90 minutes.

3.4.2 Posttest

The posttest was conducted after the treatments. The purpose of this test was to know the students' increase in listening after the research gave the treatments through drill technique. The technique of giving posttest was the same with pretest because the researcher wanted to know how far the students can develop their micro skills of listening after being given pretest and posttest. The questions were same but the order of the number are different. The pretest-posttest result was gained as a supporting data in showing the students' listening ability after they were taught listening through drill technique.

3.5 Try out

Try out test was used to know the quality of the test in order to take the data. The try out was conducted in the first meeting. The class that was used for the try out test was the class which did not include in the experimental class. The number of the test items was 50 items and time allocated was 120 minutes. This test was given to the students in order to know the quality of the test before it was used to get the data on the research. The try out test was said to have a good quality if it has good reliability and good validity, and the test was not too easy and too difficult.

3.5.1 Validity

A test can be considered valid if the test measure the object to be measured and suitable with the criteria (Hatch and Farhady, 1982; 250). According to the Hatch and Farhady (1982; 281) there are two basic types of validity; content validity and construct validity.

a. Content validity

Content validity is concerned with whether the test is sufficiently representative and comprehensive for the test. In the content validity, the material is given suitable with the curriculum. The content validity is constructed by including listening material. So, in this research, the researcher arranged the instrument based on the material already given. If the measuring instrument had represented all the ideas that connected with the material that was measured, that measuring instrument had fulfilled the aspect of content validity.

b. Construct validity

Construct validity is concerned with whether the test is actually in line with the theory of what it means to know the language that is being measured, it will be examined whether the test question actually reflect what it means to know a language. In this research, the researcher focused on micro skills of listening in form of listening test which be adopted from students' hand book. In other words, the researcher will write and make the test based on the material in the English curriculum for Junior High School.

In order to fulfill the criteria of construct validity, the table of specification of listening aspect which was modified from the theory proposed by Richard (1983, cited in Omaggio, 1986. P. 126), the test instrument can be seen below:

Table 1. Specification of Micro Skills in Pre-test

No	Objective	Number of Items	Percentage
1.	Discrimination among sounds	1,3,5,6,13,18,25,30	20%
2.	Recognition of vocabularies	2,7,8,11,14,16,17,21,23,26,	25%
3.	Detecting key words	4,9,10,12,15,19,20,22,24,27,29,39	30%
4.	Recognition of grammatical structure	28,31,32,33,34,35,36,37,38,40	25%
	Total	40	100%

Table 2. Specification of Micro Skill in Post-test

No	Objective	Number of Items	Percentage
1.	Discrimination among sounds	2,13,16,17,24,30,37,40	20%
2.	Recognition of vocabularies	6,7,9,10,14,19,27,32,38,39	25%
3.	Detecting key words	1,8,11,12,15,18,22,25,26,28,29,31	30%
4.	Recognition of grammatical structure	3,4,5,20,21,23,33,34,35,36	25%
	Total	40	100%

3.5.2 Reliability

Reliability of test can be defined as the extent to which a test produces consistent result when administrated under similar conditions (Hatch and Farhady, 1982: 243). To estimate the reliability of the test this research used split-half technique. In measuring the reliability of this test, the researcher will use the coefficient of the reliability between odd and even group used the *Spearman Brown Formula* which was formulated below:

$$R_x = \frac{N \sum XY - \sum X \sum Y}{N \sum X^2 - (\sum X)^2 \quad N \sum Y^2 - (\sum Y)^2}$$

Note:

R : Coefficient of reliability between odd and even numbers

N : Number of the students

X : Square of x

Y : Square of y
 $\sum X$: Total score of odd number
 $\sum Y$: Total score of even number
 The criteria of reliability are:
 0.80-1.00 = Very high
 0.60-0.79 = High
 0.40-0.59 = Average
 0.20-0.39 = Low
 0.00-0.19 = Very low

(Hatch and Farhady, 1982: 198)

Then this research used “Spearmen Brown’s prophecy formula” to know the coefficient correlation of whole items.

The formula (Hatch and Farhady, 1982: 246)

$$r_k = \frac{2r_{xy}}{1 + r_{xy}}$$

Where:

r_k : the reliability of the test

r_{xy} : the reliability of half the test

In this research, the result of reliability of the try-out test was 0.78 (see appendix 4). It could be inferred that the test had high level of reliability, in the range 0.60-0.79. It indicated that this instrument would produce consistent result when it was administered under similar condition, to the same participants, and in different time (Hatch and Farhady, 1982: 286). So, it can be concluded that the test was reliable.

3.5.3 Level of Difficulty

The level of difficulty is important to be known since the students who take the test. If the test items are too easy, we can not know about differences is discarded. To see the level of difficulty, the researcher will use this formula :

$$LD = \frac{R}{N}$$

Where:

LD: level of difficulty

R: the number of students who answer correctly

N: the total number of students following the test

The criteria:

<0.03 = difficult

0.30-0.70 = average

>0.70 = easy

(Shohamy, 1985: 79)

Based on the criteria above, there were 6 easy items in the try-out test (6, 16, 17, 32, 41, and 46). There were 4 difficult items (4, 21, 27, and 29). And, there were 40 satisfactory items. (see appendix 5)

3.5.4 Discrimination Power

The discrimination power (DP) refers to the extent to which the item differentiates between high and low level students on the test. A good item according to this criterion is one which good students do well on and bad students fail. To know the discrimination power of the test, the researcher will use the following formula:

$$DP = \frac{\text{correct } U - \text{correct } L}{1 \ 2 \ N}$$

Where:

DP : discrimination power

U : the proportion of upper group students

L : the proportion of lower group students

N : total number of students

The criteria are:

0.00-0.20 = Poor items

0.21-0.40 = Satisfactory items

0.41-0.70 = Good items

0.71-1.00 = Excellent items

- (negative)= Bad items, should be omitted

(Heaton, 1975:180)

Based on the criteria above, there were 10 items in the try-out test (4, 6, 16, 17, 21, 27, 29, 32, 41, and 46) which did not fulfill the standard of discrimination power, since those items had discrimination index under 0.20 which meant that the items had poor discrimination power. By looking discrimination power and level of difficulty index, the total items that were administered were 40 items (1, 2, 3, 5, 7, 8, 9, 10, 11, 12, 13, 14, 18, 19, 20, 22, 23, 24, 25, 26, 28, 30, 31, 33, 34, 35, 36, 37, 38, 39, 40, 42, 43, 44, 45, 47, 48, 49, and 50). (see appendix 5)

3.6 Scoring System

This research used Lyman's formula to know the students' result of the test.

The score of pretest and posttest will be calculated by using this formula:

$$X_{\%c} = 100 \frac{R}{T}$$

Note:

$X_{\%c}$ = Percentage of correct scores

R = Number of right answers

T = Total number of items on test

(Lyman, 1971: 95)

3.7 Data Analysis

After collecting data from conducting pretest and posttest, the researcher analyzed the data to know whether there was any significant increase of students' micro skills of listening after they were taught by using drill technique at SMPN 3 Bandar Lampung. The researcher used these steps to examine the data:

- a. Scoring the pre-test and post-test.
- b. Tabulating the result of the test and finding the mean of the pre-test and

post-test. it was calculated by applying: $X = \frac{\Sigma X}{N}$

Note:

X = Mean

ΣX = Total score of the students

N = Number of students

- c. Drawing conclusion from the tabulated result of the pretest and posttest administering, that was statistically analyzed using SPSS (Statistical Program for Social Sciences) in order to test whether improve of the students' gain was significant or not.
- d. Analyzing the data used t-test. It was important to find out whether the data from experimental class were random and normally distributed or not. In this research, the random and normality test were used to know whether the data in the experimental class are random and distributed normally or not. The researcher used SPSS 17.0 for Windows with level of significant 0.05. The data are determined random and accepted the normality if the H_0 is higher than 0.05 (Sig.> α). From the result of the test, it showed that the data were random and distributed normally. (see appendix 11 and 12)

3.8 Hypothesis Testing

The researcher used SPSS (Statistical Package for Social Science) version 17.0. Then, the t-test was chosen to prove whether the hypothesis that proposed by the researcher was accepted or not, that was, Paired Samples T-test in order to know the significance of the treatments' effect by comparing the mean of pre-test and post-test in which the significance was

determined by $p < 0.05$. Therefore, the hypothesis which can be cited is as follows:

The criteria are:

- H_0 (null hypothesis) is accepted if t-ratio is lower than t-table ($t\text{-ratio} < t\text{-table}$). It means that there is no significant improvement of students' micro skills of listening after being taught through drills technique.
- H_1 (alternative hypothesis) is accepted if t-ratio is higher than t-table ($t\text{-ratio} > t\text{-table}$). It means that there is a significant improvement of students' micro skills of listening after being taught through drills technique.

The hypothesis testing (see appendix 13) showed that t-ratio is higher than t-table ($9.229 > 2.042$).