

III. RESEARCH METHOD

This chapter discusses certain points; research design, sample and population, data, collecting data technique, instrument of the research, data analysis, data treatment, and hypothesis testing, as the explanation follows:

A. Research Design

In this research, the researcher intended to find out the significant increase of students' listening ability before and after being taught through picture dictation. Thus, the researcher used quantitative research based on the experimental design. A quantitative research was used to measure the students' achievement in listening ability. The researcher used one group pre-test and post-test design which took two classes as the experimental class and the try out class.

Before administering the pre-test, the researcher firstly administered a try-out test in the try out class to measure the quality of the test which was used in taking the good and reliable data for the pre-test and the post-test. After the try-out test, the pre-test was administered to measure students' listening ability before the treatments. After the posttest, the researcher administered tree treatments to see the improvement of students' listening ability. After the treatments were finished, the posttest was administered to know students' improvement of students' listening ability.

In this research, the researcher only selected one class as experimental class which had three treatments in the listening activity. The research design is presented as follows:

T1 x T2

Hatch and farady (1982)

Where:

T1 = Pretest

X = Treatments

T2 = Post Test

B. Population and Sample

The population of this research was the first year students of SMPN 1 Bukit Kemuning which consists of six classes VII-1 until VII-6. Each class consists of 32-34 students. In relation to the design, the researcher took two classes; VII-3 as the experimental class, and try out was conducted in VII-2. Those classes were chosen randomly by lottery drawing. 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 Objective view in measuring students' ability.

C. Research Procedures

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

1. 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 good and reliable test for the further test. In determining the quality of the test the researcher see in these aspects such as validity, reliability, level of difficulty, and the discrimination power. From the computation of level of difficulty (See appendix 4), the researcher got that there are 3 items (3, 9, 18) categorized as the difficult items which were less than 0.30 (difficult items) and there are two items (5, 23) categorized as the easy items in which the range of the item is >0.70 (Easy). Then, the researcher found that there were 20 items which categorized as the satisfactory items (in the range of 0.30-0.70). 2 items in easy category which had less than 0.20 indexes. In short, the researcher had 20 test items that had a good discrimination power and positive value since a large acknowledgeable the students that poor students got the items correct.

2. Administering the pretest

The research was administered this test before giving treatments by using picture dictation. There were 20 items consists of listen and draw, multiple choices tests. The test was conducted for about 40 minutes.

3. Conducting the treatment

After the pretest, the researcher conducted the treatments for three meeting that took 90 minutes in every meeting. The researcher taught listening through picture dictation to the students' experimental class.

4. Administering the posttest

The posttest was given to evaluate the students' listening achievements after being taught by picture dictation. The test is the same items with the pre-test but already in random items.

5. 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 an increase of students' listening achievement.

6. Concluding and reporting the result of the data analysis

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

D. Data Collecting Technique

The data of the research were the students' listening score from the pre-test to the post-test. The students' listening achievement was seen from the score of pre-test (before treatment) to the posttest (After treatment). The instrument of this research was listening test which covers some listening components that develops students' listening ability in micro skill aspects such as recognizing vocabulary and getting referential info. The researcher administered the pre-test and post-test in order to measure students' listening ability. However, to know the quality of the test the

researcher administered the try-out test in another class to determine the reliability of the test.

1. Pretest

The pretest was given before the picture dictation technique was applied. The pretest was administered to know students' listening ability before having treatments. The researcher uses this test as an objective test in the form of listening variation 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 20 items and was held for 40 minutes.

2. Posttest

The posttest was conducted after the treatments. The purpose of the post-test was to know the students' listening achievement after having picture dictation technique as the treatment. The test items in the post-test are the same items as pre-test but in random number. The result of both tests was used as the measurements of students' listening achievement.

E. Research Instrument

In getting the data, the researcher employed a set of listening test that was for try out, pretest and posttest. Those tests were in the form listening and draw and multiple choices which has the valid answers.

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. According to Hatch and Farhady (1982:251), since content validity is the extent to which a test measures a representative sample of the subject meter, the focus of content validity is adequacy of the sample of the appearance of the test. Therefore, since the test instrument was conducted to get the data of the students' listening comprehension achievement, the content validity of the test items were conducted by including listening materials which were arranged based on the materials already given and it was suitable with the curriculum. Thus, if the measuring instrument has represented all the ideas that connected with the materials that will be measured, that measuring instrument has 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 focuses on micro skills of listening in form of listening test.

Table 1. Table specification of Micro skill in pre-test and post-test

No	Objective	Number of items	Percentage
1	Recognize Vocabulary	1,2,3,4,5,6,7,8,9,10	50 %
2	Getting the referential info (WH questions)	11,12,13,14,15,16,17,18,19,20	50 %

There are many micro skills elements that are overlapping each others in helping the listener understand the message contents. In picture dictations usage, the kind of micro skills that can be covered is about recognize vocabulary and getting referential info. Since the main activity is the object placements, the recognize vocabulary taking the role in delivering the listening process through picture dictation (drawing activity). They should recognize vocabulary first in order to draw the picture based on speakers' intention. Getting the referential info will direct the students to get the information through the WH questions.

2. Reliability

Reliability of the test can be defined as the extent to which a test produces consistent result when administrated under similar conditions (Hatch and Farhady, 1982:243). Split-half technique was used to estimate the reliability of the test and to measure the coefficient of the reliability between odd and even group, *Pearson Product Moment formula* was used is as follows:

$$r_1 = \frac{N(\sum xy) - (\sum X)(\sum Y)}{\sqrt{(\sum x^2) - (\sum X)^2}(\sum y^2 - \sum Y^2)}$$

Σ_x = Total score of odd number

R_{xy} = The correlation of odd group and even group

X^2 = Square of y

y^2 = Square of y

N = Total Number of student

(Henning, 1987:60)

Then to know the coefficient correlation of the whole items, the researcher uses

Spearman Brown formula:

$$r_k = \frac{2r_1}{1 + r_1}$$

r_k = reliability of full test

r_1 = reliability of half of the test

The criteria of reliability were:

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: 246)

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 cannot know about differences is discarded.

To see the level of difficulty, the researcher used this formula:

$$LD = R/N$$

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 2 easy items in the try-out test (5, 23).

There were 3 difficult items (3,9,18). And, there were 20 satisfactory items.

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 5 items in the try-out test (3, 5, 9, 18, and 23) 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. The poor values of some number might be caused from the missed of listening or the cultural knowledge of the students. For example, number 18 which requires students to identify the meaning of chimney that they rather to see or hear in the daily life of Indonesian people, thus this number considered poor because students have no cultural background of this words. By

looking discrimination power and level of difficulty index, the total items that were administered were 20 items.

5. Scoring System

In this research, the score from the listening to picture dictation was calculated as follows:

$$S = \frac{R}{N} \times 100 \%$$

S = Score of the test

R = Right answer

N = Number of item test

Arikunto, (1997)

6. 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' listening achievement after they were taught by using picture dictations technique at SMP N 1 Bukit Kemuning. The researcher used these steps to examine the data:

- 1) Scoring the pre-test and post-test.
- 2) Tabulating the result of the test and finding the mean of the pre-test and post-test. it was calculated by applying:

$$\bar{X} = \frac{\sum X}{N}$$

Note:

\bar{X} = Mean

ΣX = Total score of the students

N = Number of students

- 3) 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.
- 4) 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 16.0 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.

7. Hypothesis Testing

Hypothesis testing is used to prove whether hypothesis that the researcher intends to is accepted or not by using T-Test. The researcher uses the SPSS (Statistical Package for Social Science) version 16.0 for windows. In this research the researcher uses Paired Samples T-TEST in order to know the significance of the treatments' effect by comparing the means of pretest and post test. The hypothesis

will be significant if the result at the level of 0.05 in which the hypothesis is approved if $\text{sig.} < \alpha$.

H_a = There is significant increase of students' listening ability after being taught by picture dictation.

H_o = There is no significant improvement of students' listening ability after being taught by picture dictation.

(Setiyadi, 2006:97)

The criteria are:

H_a (alternative hypothesis) is accepted if alpha is lower than 0.05 ($\alpha < 0.05$).

H_o (Null hypothesis) is accepted if alpha level is higher than 0.05 ($\alpha > 0.05$).

The hypothesis testing showed that t-ratio is higher than t-table ($9.612 > 2.369$).