

III. RESEARCH METHODS

This chapter deals with the design and procedures of the research. This refers to the research design, population and sample of the research, data collecting technique, research instrument, research procedures, data analysis, data treatment and hypothesis testing.

3.1. Research Design

This research is a quantitative study which used true experimental design. The researcher took two classes as the experimental class and control class. Experimental class, which receives the treatment of running dictation and control class, which is taught through regular teaching learning activity by the classroom teacher. In conducting the research, the researcher used experimental research with one group pre test and post test design. In this research, the students were given pre test before treatment and at the end of the program the students were also given post test (Setiyadi, 2006). Pre test was given to the students in order to measure the students' competence before they are given the treatment and post test is given to measure how far the students' achievement after they are given the treatment.

In this research, the researcher interests in investigating whether there is a significant increae of students' listening achievement after being taught using running dictation. The researcher conducted pretest ,treatments and post test.

The design is described as follows:

T1 X T2

Where:

T1 : pretest

T2 : posttest

X : treatments (running dictation)

(Hatch and Farhady, 1982: 24)

3.2. The Population and Sample

A population is defined as the whole subjects of the research. Setiyadi (2006:38) states research population is all individuals which are being target in research while research sample is individual who give the data. The population of this research was the second year students of SMAN 1 Ambarawa. There were seven classes of second grade students. Each class consisted of 35-37 students. The researcher selected the sample by using random samply technique through lottery drawing with assumption that the second year of SMAN 1 Ambarawa have the same characters and level of English Profeciency. The reseacher took one class as the try out class; it was XI IPS 4 and one class as the experimental class; it was IX IPS 3.

3.3. Data Collecting Techniques

In collecting the data, a pre test, treatments and pos test were administered. Then, the researcher analyzed the result of those three activities which could be clarified as follows:

1. Pre Test

The pre test conducted in order to know the students' listening achievement before giving the treatments. The type of the test were writing simple sentence and multiple –choice test. The items of multiple choice consisted of three options (a,b,c). In this pre test, the students were given 25 items of listening and it conducted within 80 minutes.

2. Treatment

The class was given treatments that was running dictation in teaching listening, specifically in simple oral monolog text. There were three times activities for the treatment.

3. Post Test

After conducting the treatments, the researcher gave the post test. The aim of this test was to know the effect of the treatments towards the students' listening achievement after being given the treatment. This test consisted of 25 items of writing simple sentence and multiple –choice test for 80 minutes.

3.4. Research Instrument

In this research, the researcher conducted two tests. They were pre test and post test. Pre test was given in order to know the students' listening achievement before the treatments. Post test was given in order to know the students' listening

achievement after the treatments. The form of the try out test, pre test and post test: writing simple sentence and multiple-choice test. The total number of the try out items was 40 items and the total number of the items of the pretest and post test was 25 items from the items of try out test. The try out test was administered about 80 minutes and the pretest and post test were also administered about 80 minutes.

3.5. Research Procedure

The procedures of the research are as follow:

1. Determining the population and sample

The population of this research was the second years students of SMAN 1 Ambarawa. There were 7 classes which consisted of 35-38 students per each class. The researcher took experimental class by using the random sampling technique.

2. Selecting the materials

The materials that were used in this research were taken from handbook and based on the teaching and learning syllabus.

3. Administering try –out test

The try out of test carried out after choosing the subject. The try out was administered before giving the pre test. The aim of try out test was to make sure the quality of validity, reliability, level of difficulty and discrimination power of the test which is used as the instrument of the research. This test is consisted of two parts; part one was writing simple sentence and part two was multiple –choice test with three options (A, B

and C). The number of the test was 40 items; 15 items for part one and 25 items for part two. This test was allocated within 80 minutes.

4. Administering the pre-test

This activity was done before applying the treatment. The purposes of this test were to know how far their competence in listening and to know the ability of the class that involved in this research. The test was administered in the experimental class, class XI.IPS.3. The total of test items were 25.

5. Conducting treatments.

The treatments were conducted in three meetings which each meeting took 2 x 45 minutes. The materials were about simple oral monolog text. To be clearer, the treatments were conducted as follows:

- a. The first treatment dealt with simple oral monolog text about simple present tense by giving the students ten questions in multiple choice in order to check their listening comprehension.
- b. The second treatments dealt with short text about similar sounds and the researcher also gave the students ten questions in multiple choice.
- c. The third treatment dealt with simple oral monolog text of simple past tense and the students were given ten listening questions.

6. Administering post test

The post test was administered after the application of running dictation technique. The aim of this test was to measure the students' listening achievement after giving treatments. In this test, the students were asked to do multiple choice test consist of 25 items for 80 minutes. The test was the same as in the pre test, but in different order.

7. Analyzing the result

The data of the research were statistically analyzed using SPSS 15.0. The researcher used pairs samples t-test to analyze the data in order to find out whether there is a significant increase in students' listening achievement or not.

8. Reporting the Result

The data arranged systematically based on the pre-test and post test to see whether running dictation was able to increase the students' listening achievement.

3.6. Data Analysis

In order to know the students' progress in comprehending the text, the students' score were computed by doing three activities:

1. Scoring the pre-test and post test

In scoring the students result of the test, this research has used Arikunto's formula. The ideal higher score is 100. The score of pretest and posttest has calculated by using formula as follows:

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

Where:

S : the score of the test

R : the total of the right answer

N : the total items

(Arikunto, 2005: 236)

2. Tabulating the result of the test and calculating the mean of pre-test and post test. To compute the average score or mean of the pre-test and post test, the researcher used a very simple formula as follows:

$$M = \frac{\sum x}{N}$$

Where:

M : (Mean) Average score

$\sum x$: Total students' score

N : Total number of students

The average is total students' score divided by total number of students.

(Hatch and Farhady, 1982: 55)

3. Drawing conclusion from the tabulated result of the pre-test and post test administrated. The data were analyzed by using statistical computerization Repeated Measures t-test of SPSS 15.0 for Windows i.e. $t = \frac{x_1 - x_2}{S_D}$ to test whether the difference between pre-test and post test is significant or not, in which the significance was determined by $p < 0,05$ (Hatch and Farhady, 1982: 114). Since, the data were gained from one group and the research intended to find out whether there is significant increase of the students' listening achievement or not.

3.7. Data Treatment

After collecting the data, the researcher treated the data by using following procedures:

3.7.1. Testing the try out

Before conducting the pre test and post test, the researcher administered a try out. This test was administered in order to remove the bad items based on their level of difficulty (LD) and discrimination power (DP) and also to find the reliability and validity of the test. The number of the try out was 40 items. After analyzing the data, this research got that 25 items were good and 15 items were bad and should be dropped.

3.7.1.1 Level of Difficulty

Level of difficulty is used to know whether the test items are easy or. To see the level of difficulty, this research used the following formula.

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

Note

LD = Index of difficulty

R = the number of students who answer correctly

N = total number of the students

The criteria are :

LD > 0.30 = difficult

LD = 0.30 - 0.70 = Satisfactory

LD > 0.70 = Easy

(Heaton, 1986; 178)

Based on the criteria above, there were 9 easy items in the try out test (1, 3, 12, 13, 16, 17, 25, 35, and 36). There were 4 difficulties items (4, 7, 24, 30). And, there were 27 satisfactory items (2, 5, 8, 9, 10, 11, 14, 15, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 31, 32, 33, 34, 37, 38, 39, 40). (see appendix 4)

3.7.1.2. Discrimination Power

Discrimination power is the ability of the item to differentiate between the students who has high ability and those who has low ability. To determine the discrimination power, the following formula was employed:

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

Notes :

D = Discrimination index

Correct U = Number of correct in the upper group

Correct L = Number of correct in the lower group

N = Total number of the students

The criteria are:

0.00 – 0.20 : poor.

0.21 – 0.40 : satisfactory.

0.41 – 0.70 : good

0.71 – 1.00 : excellent.

(Arikunto, 1993: 221)

Based on the criteria above, there were 15 items in the try-out test 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, the total items that were administered were 25 items (1, 2, 5, 6, 8, 9, 11, 12, 15, 16, 18, 19, 21, 22, 23, 26, 28, 29, 31, 32, 35, 36, 37, 38, 40). Those items had discrimination power more than 0.21 with the criteria satisfactory to excellent items (see appendix 4).

3.7.1.3. Validity and Reliability

3.7.1.3.1. Validity

Generally, the validity of a test shows how far the test measures what supposed to be measured (Setiyadi, 2006). To measure whether the test have a good validity or not, the researcher saw them from the content validity and construct validity.

a. Content validity

Content validity is extended to which a test measures representative sample of the subject matter contents. The focus of the content validity is adequacy of the sample and simply on the appearance of the test (Hatch and Farhady, 1982: 251). In the content validity, the materials given are appropriate with the curriculum. The researcher arranged the test based on the material that has had been taught to the student. It is based on KTSP of English for Senior High School.

Table 1. Specification of Micro Skill in Try-out Test

No	Aspect to be measured		
	Objective	Number of Items	Percentage
1.	Intonation Pattern	1,6,8,13,14,17,24,27 35,36,40	25%
2	Detect sentence constituents	2, 3,4,5,7,9,10,11,12,15	25%
3	Discriminating Sound	16,18,19,21,22,29, 30,31,32,37	25%
4	Cohesive devices	20,23,25,26,28,33,34,38,39	25%
	Total	40	100%

Table 2. Specification of Micro Skill in Pre Test

No	Aspect to be measured		
	Objective	Number of Items	Percentage
1.	Intonation Pattern	1, 3,4 ,21, 22,25	24%
2	Detect sentence constituents	2, 5, 6, 7, 8	20 %
3	Discriminating Sound	10, 11, 12, 13, 18, 19, 23	28%
4	Cohesive devices	9, 14, 15, 16, 17, 20, 24	28%
	Total	25	100%

Table 3. Specification of Micro Skill in Post Test

No	Aspect to be measured		
	Objective	Number of Items	Percentage
1.	Intonation Pattern	2, 3, 5, 17, 22, 24	20%
2	Detect sentence constituents	1, 4, 6, 7, 8	20 %
3	Discriminating Sound	10, 12, 14, 15, 18, 23, 25	32%
4	Cohesive devices	9, 11, 13, 16, 19, 20, 21	28%
	Total	25	100%

b. Construct validity

Construct validity examines whether the test actually in line with the theory. It means to know the language, whether the test is actually a reflection of what it means to know language (Shohamy, 1985; 74-75). It is concerned with the theory of testing certain language skill.

3.7.1.3.2. Reliability

Reliability is simple a consistency of a test. In other words, how far it can measure the same subject at separated time, but it shows the same result relatively (Setiyadi, 2006: 113). Reliability of a test can be defined as the extent to which a test produces consistent results when administer under similar conditions (Hatch and Farhady, 1982: 243). In order to estimate the reliability of the test, this research used split-half technique and to measure the coefficient of the reliability between odd and even group. This research used “Spearman Brown Formula” as follows:

$$R_{xy} = \frac{N \sum XY - (\sum X) (\sum Y)}{\sqrt{(N \sum X^2 - (\sum X)^2) - (N \sum Y^2 - (\sum Y)^2)}}$$

Note

R : Coefficient of reliability between odd and even numbers

N : Number of the students

X : Square x

Y : Square y

$\sum X$: Total score of odd number

$\sum Y$: Total score of even number

The criteria of reliability

0.00 – 0.20 : very low

0.21 – 0.39 : low

0.40 – 0.59 : average

0.60 – 0.79 : high

0.80 – 1.00 : very high out

In this research, the result of reliability of the try-out test was 0.78 (see appendix 3). It can be inferred that the test has 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 is reliable.

3.7.3. Normality test

Normality test is used to know whether the data in pretest and post test were distributed normally or not. The hypothesis of the normality test is as follows:

H_0 : The distribution of the data is normal

H_1 : The distribution of the data is not normal

In this research, the criteria for the hypothesis are:

H_0 is accepted if significant value exceeds level of significance at 0.05 (Sig. > α).

Meanwhile, H_0 is rejected if significant value does not exceed level of significance at 0.05.

3.8. Hypothesis Test

The hypothesis test is used to prove whether the hypothesis that proposes by the researcher is accepted or not by using this t-test formula.

After getting the means of pretest and posttest, the researcher analyzed the data by comparing the means of pretest and posttest, by using t-test in order to know

the significant of the treatments' effect. The hypothesis was analyzed at significant level of 0.05 in which the hypothesis was approved if $\text{Sig.} < \alpha$.

The criteria are :

With the significance level of (0.05) and $df=33$, t-table is 2.042

H_a is accepted if the t-ratio is higher than t-table, or (t-ratio $>$ t-table)

H_o is accepted if t-ratio is lower than t-table, or (t-ratio $<$ t-table)

The hypothesis testing (see appendix 10) shows that t-ratio is higher than t-table (10.534 $>$ 2.042). It means that H_o is rejected and H_a is accepted. It can be concluded that there is a significant increase of students' listening achievement after being taught running dictation at SMAN 1 Ambarawa Pringsewu.