

III. RESEARCH METHODS

This chapter discusses about the methods of research used in this study, they are: research design, population and sample, data collecting technique, research procedures, scoring system, and data analysis.

3.1 Research Design

In this research, the researcher intended to find out the significant difference of students' reading comprehension achievement after being taught through Short Story in narrative text. It could be found by using pre-test before the treatment and post-test after the treatment. This research was a quantitative study which used *one group time series design* in order to find out the significant difference of students' reading comprehension achievement. The researcher only selected one class as experimental class which had treatments (teaching reading comprehension through Short Story). The research design is as follows:

T1 T2 T3 X T4 T5 T6

Where:

T1 T2 T3 : Pretest, which is administered before receiving the treatment.

X : Treatment, which is teaching reading by using short story.

T4 T5 T6 : Posttest, which is administered after receiving the treatment.

(Hatch and Farhady, 1982: 20)

The first activity has done by researcher is to administer try out to make the instrument more valid and then the researcher administers pretest to the experimental class in order to find out the input of the students before they get the treatment. After that, the researcher conducts the treatment that is using short story to stimulate and increase the students' reading comprehension achievement. The treatment was given three times in assumption three times treatment will be enough. The next step is administering the posttest to experimental class to know the result of the treatment.

3.2 Population and Sample

The population of this research was the second grade of the students of SMAN 1 Sindang Indramayu. Class XI that consists of 30 students in 2nd semester, academic year 2012/2013 was taken as the sample of this research. This class was chosen by selected randomly.

3.3 Data Collecting Technique

Data collecting technique is the way to get the data for the research. This data were collected to find out the significant difference of the students' reading

comprehension achievement before and after being taught through Short Story. In collecting the data, the research procedure administered pre-tests, treatments and post-tests. Then, the researcher analyzed the result of those activities which could be clarified as follows:

1. Try-out

The try-out test was applied to know the quality of the test as the instrument of the research. The try-out test was conducted in another class which was chosen purposively in the pre observation, out of experimental class. The numbers of the tests items were 75 items of multiple choice that consist of four options of each answer (A, B, C and D). Time allocated was 90 minutes. This test was given to the students in order to have a good quality which has not only good reliability and good validity, but also it was not too easy and too difficult.

2. Pre-tests

The pre-test was conducted before the treatment of teaching reading comprehension through Short Story, to see the students' reading comprehension before the treatment. The pre-tests was given three times as an objective test in multiple choices form. The numbers of the items in the test were 20 items which had four options of answers, (A, B, C and D) in 60 minutes. The material was given based on KTSP 2006 curriculum of senior high school.

3. Treatments

After having the pre-test, the students in the experimental class were given three treatments. The treatment was teaching reading comprehension through Short Story. There were three different topics every meeting that consists of 90 minutes.

4. Post-tests

The post-tests was given three times to the students after the treatments to find out the significant difference between the score of the students' reading comprehension achievement after being taught Short Story. The result of post-tests was compared with the result of pre-tests. The test consists of 20 multiple choices items consisting of four options (A, B, C, and D).

5. Questionnaire and Interview

Questionnaire and Interview was given to know the students' reaction after being taught through Short Story. The questionnaire consists of ten statements about the use of Short Story and interview consists of ten questions about the use of narrative text in teaching learning reading comprehension.

3.4 Research Procedures

In constructing the research, the research procedures used these following steps:

1. Determining the population and sample of the research

The population of this research was the second grade students of SMA N 1 Sindang Indramayu. The sample or experimental class was XI Social 4 class that consists of 30 students. It was chosen randomly by using lottery.

2. Administering the tryout to know the quality of the test

Tryout test was in multiple choice tests that consist of 75 items with four options. This test was administered to measure the level of difficulty (LD) and discrimination power (DP) as well to find out the reliability and validity of the test.

3. Preparing the material which will be taught

The researcher will use two kinds of reading text. The materials are from English text book for the second year of SMA students that will be used as reading material in pre-test and short story texts that will be used as reading material in post-test.

4. Administering the pretest and finding the result

The pre-test was conducted before the treatment, to see the students' base reading comprehension. The pre-test was given as an objective test in the form of multiple choices. The numbers of the items in the test are 20 items of multiple choice tests with four options of answers, (A, B, C and D). The pre-test took 60 minutes.

5. Giving treatment

After having the pre-test, the students in the experimental class was given three treatments. The treatment was teaching reading comprehension through Short Story. There were three different topics in each meeting.

6. Administering the post-test

The post-test was given to the students in experimental class after the treatment of teaching reading comprehension achievement through Short Story, to know whether the students' reading comprehension achievement increase or not. It took

60 minutes and used 20 items of multiple choice tests with four options (A, B, C and D).

7. Analyzing the test result

After conducting pre-test and post-test, the researcher analyzed the data by using t-test. It was used to know whether Short Story is able to increase students' reading comprehension or not. It was computed through SPSS.

3.5 Research Instrument

The instruments of this research were:

1. Objective reading test of narrative text that was used for tryout and post-test. Those tests were in form of multiple choices that consists of four options (A, B, C and D). The multiple choice test is used since its marking is rapid, simple and most importantly reliable, not subjective or influenced by the marker's judgment (Heaton, 1991).
2. Questionnaire consisting of the students' arguments about the use of Short Story in teaching learning reading comprehension. The questionnaire consists of ten statements. Every student chooses the answer based on their arguments on the questionnaire sheet given. The questionnaire has five answers, dislike, almost dislike, neutral, like, strongly like.
3. Interview consisting of the ten questions about the use of narrative text in teaching learning reading comprehension. Every students answer based on their arguments.

3.6 Scoring System

The researcher uses multiple choices in order to gain the objectivity of the results. There were 75 items in tryout test, 20 items in pre-test and 20 items in post-test. Each correct answer is scored one. In scoring the students result of the test, the researcher used Arikunto`s formula. The ideal higher score was 100. The score of pretest and post tests were calculated by using formula as follows:

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

Where:

S: The score of the test

R: The total of the right answers

N: The total items

(Arikunto, 2003:212)

3.7 Try-out Test

The try-out is administered to determine the quality of the test that is used in taking the data. Tryout is the test that was given before pre-test and post-test. It was the multiple choice test that consists of 75 items and had four options A, B, C, D. It was given in order to know the level of difficulty and discrimination power of the test items before giving the pre-test and post-test to the class. The

test could be said has a good quality if it has a good validity, reliability, level of difficulty and discrimination power.

3.7.1 Validity of the Test

The test can be said as the valid one if the test measures the object to be measured and it is suitable with the criteria (Hatch and Farhady, 1982:250). There are two basic types of validity (Hatch & Farhady, 1982: 250). They are content and construct validity. To measure whether the test has a good quality or not, the researcher used content and construct validity.

a. Content Validity

Content validity is concerned with whether the test is sufficiently representative and comprehensive for the test. Based on Hatch and Farhady (1982:251), since content validity is the extent to which a test measures a representative sample of the subject matter, the focus of content validity is adequacy of the sample of the appearance of the test. Therefore, since the test instrument was constructed to get the data of the students' reading comprehension ability, the content validity of the test items were constructed by including reading material which was arranged based on the material already given and it was suitable with the curriculum. Thus, 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. To achieve the construct validity, the test was adopted from the student's hand book based on KTSP 2006 curriculum of senior high school. Then, the test was determined according to the material that was taught to the students.

3.7.2 Reliability of the Test

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). Pearson Product Moment formula that was used as follows:

$$r_l = \frac{\sum xy}{\sqrt{[\sum x^2][\sum y^2]}}$$

Where:

r_l : Coefficient of reliability between odd and even numbers items

x : Odd number

y : Even number

x^2 : Total score of odd number items

y^2 : Total score of even number items

xy : Total number of odd and even numbers

To know the coefficient correlation of whole items, “Spearman Brown’s prophecy formula” will be used. The formula is as follows:

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

Where:

r_k : The reliability of the whole test

r_{xy} : The reliability of the half test

(Hatch and Farhady, 1982:246)

3.7.3 Level of Difficulty

The difficulty level of an item shows how easy or difficult that particular item done by the participants, (Heaton, 1991: 182). Level of difficulty is generally expressed as the fraction of the students who answered the item correctly. It is calculated by the following 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

Here are the criteria:

<0.30 = difficult

0.30-0.70 = average

>0.70 = easy

3.7.4 Discrimination Power

The discrimination power refers to the extent to which the item differentiates between high and low level students on the test. A good item according to the criteria is one which good students will do well and bad students will fail.

To know the discrimination power of the test, the formula that was used:

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

Where:

DP: Discrimination power

U: The proportion of upper group students

L: The proportion of lower group students

N: Total number of the students

The criteria are:

0.00 – 0.20 = poor

0.21 – 0.40 = satisfied

0.41 – 0.70 = good

0.71 – 1.00 = excellent

(Negative) = bad items (should be omitted)

(Heaton, 1991: 182)

3.8 Data Analysis

The data gained from pre-test and post-test was analyzed through the following steps:

1. Scoring the pre-test and post-test.
2. Tabulating the result of pre-test and post-test and calculating of both means.
3. Drawing conclusion from the tabulated results of the pre-test and post-test administered, that is by statistically analyzing the data using statistical computerization, i.e., Matched t-test of Statistical Package for social Science (SPSS) for Windows to test whether the improvement gained by the students is increase or not, in which the significance is determine by $p < 0.05$. It is used as the data come from the two samples (Hatch and Farhady, 1982:114).

3.9 Hypothesis Testing

The hypothesis statistically tested using Repeated measures t-test. It was used as the data came from the same sample or known as paired data (Hatch and Farhady, 1982: 114). The data was calculated through computing with Statistical Package for Social Science (SPSS) version 17.0 for Windows. It was used to draw the conclusion in significant level of 0, 05 ($p < 0, 05$). It means that the probability of error in the hypothesis was only about 5%.

To determine whether the first hypothesis is accepted or rejected, the following criteria acceptance that used:

H₀ : There is no significant difference of the students' reading

comprehension achievement after being taught through Short Story.

H₁ : There is a significant difference of the students' reading

comprehension achievement before and after being taught through Short Story.