

Self-questioning strategy can be used to increase students' reading ability in comprehending the anecdote text.

III. RESEARCH METHOD

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, data analysis and hypothesis testing.

3.1 Research Design

This research was quantitative in nature, because the major data were quantitative, that was the students' scores of reading comprehension and was done by using *one group pretest-posttest design*. The research investigated whether there was an increase in students' reading ability in comprehending the anecdote text through self-questioning strategy. This study uses one class as experimental class using *simple random sampling*, which is selected randomly by using lottery. This class has both pretest-posttest and three treatments.

The research design was represented as follow:

$$T_1 \text{ X } T_2$$

Notes:

T₁ is the pre-test

T₂ is the post-test

X is the treatment

(Hatch and Farhady, 1982: 20)

Firstly, the writer administered a pre-test to the students to identify their achievement of reading ability in comprehending the anecdote texts before applying the technique. Then, the students were given three treatments by using self-questioning strategy.

Eventually, a post-test is administered to identify students' reading ability in comprehending anecdote texts after being taught by using self-questioning strategy. If the average score of the pre-test is higher than the average score of the post-test, it indicates that self-questioning strategy can not be used to increase students' reading ability in comprehending the anecdote text. However, if the average score of the post-test is higher than the average score of the pre-test, it shows that self-questioning strategy can be used to increase students' reading ability in comprehending anecdote text.

3.2 Population and Sample

The population of the research was the second year students of MA Ma'arif 4 Kalirejo Lampung Tengah. There were 2 classes of the second grade in this

school: XI 1 Science (40 students) and XI 2 Social (40 students). The total number of the population was 80 students. Their ages range from 16-17 year old.

In determining the experimental class the writer used the simple random sampling technique by using lottery, so that all second year classes got the same chance to be sample in order to avoid subjectivity and to guarantee every class has the same opportunity. The sample chosen was XI 1 Science as the experimental class and therefore XI 2 Social program became the try out class.

3.3 Data Collecting Technique

In collecting the data, the writer used the following steps:

1. Administering the Pre-test

The pre-test was given before the treatment, in order to find out how far the competence of the students in reading comprehension or their input before the treatment and to find out the experimental class' reading comprehension achievement, the test was multiple choices that consist of 25 items. The materials tested, was related to the curriculum used in the school and suitable with their level.

2. Administering the Post-test

Post-test was given after the treatment in order to find out whether there was any increase of students' reading comprehension achievement. The test was multiple choices consisted of 25 items. The materials tested, were related to the curriculum used in the school and suitable with their level. The post-test was done after three meetings of the treatments. The result of the post-test of the participant class was analyzed.

3.4 Research Procedures

The research was conducted during normal class hour. The writer followed the following procedures:

1. Determining the research problem

Based on the researcher's background of problem in the first chapter, it was assumed that self-questioning strategy could be used to improve the students' reading comprehension achievement conveyed in anecdote text and the researcher tried to find out whether there was an improvement of learner's achievement in reading comprehension conveyed in anecdote text skill before and after being taught using self-questioning strategy.

2. Selecting instruments materials

The research used three anecdote texts for treatments. The material was based on KTSP 2006. The stories were taken from students' handbook and also from the internet.

3. Determining Sample

The sample was the students chosen, that was the second grade of XI 1 Science as the experimental class. The writer selected the sample by using random sampling with the assumption that the second year classes of MA Ma'arif 4 Kalirejo had the same characters and level of English Proficiency..

4. Conducting try-out test

The try-out test had been conducted before the pre-test was administered. This was expected to measure the validity and reliability of pretest and posttest, to ensure the data used by the researcher was valid and reliable to

use as a research instruments. This test was multiple choice tests and was conducted in 80 minutes. There were 40 items of multiple choices with four options and one of them was as the correct answer, the test items could be reduced or kept depends on its reliability and validity. The aim of try -out was to determine the quality of the test used as the instrument of the research, and to determine which item should be revised for the pre-test and the post-test. This research used the result of the try-out test to measure the level of difficulty and discrimination power, to find out the validity and reliability of the test.

Criteria of Good Test

Whenever a test or other measuring device is used as part of the data collection process, there are four criteria of a good test should be met: validity, reliability, reliability, level of difficulty, and discrimination power.

1. Validity of the Instrument

A test can be said valid if the test measures the object to be measured and suitable with the criteria (Hatch and Farhady, 1982: 250). According to Hatch and Farhady (1982: 251), there are four basic types of validity: face validity, content validity, construct validity and empirical or criterion-related validity. To measure whether the test has good validity, the researcher used content and construct validity since the other two were considered be less needed. Face validity only concerns with the layout of the test. Criterion-related validity concerns with measuring the success in

the future, as in replacement test (Hatch and Farhady, 1982:251). The two types used in this research were:

a. Content validity

Content validity refers to the extent to which a test measures a representative sample the subject matter contents, the focus of the content validity is adequate of the sample and simply on the appearance of the test (Hatch and Farhady, 1982:251). To know whether the test is good reflection of what will be taught and of the knowledge which the teacher wants the students to know, the researcher compares this test with table of specification. If the table represents the material that the researcher wants to test, then it is valid from that point of view. A table of specification is an instrument that helps the test constructor plans the test.

Table 1. Table specification of try out

NO	Objective	Number of items	Percentage
1	Identifying main idea	1., 3., 7., 8., 10., 16., 18., 20., 21., 23., 29., 31., 36.	32,5%
2	Specific Information	4., 5., 9., 12., 13., 14., 19., 22., 25., 27., 30., 33., 34., 35., 37., 38., 39., 40.	45%
3	Inference	6., 15., 24., 28.	10%
4	Vocabulary	2., 11., 17., 26., 32.	12,5%
Total		40	100%

Table 2. Table specification of pretest

NO	Objective	Number of items	Percentage
1	Identifying main idea	1., 2., 4., 5., 7., 8., 10., 11., 14., 16., 18., 20., 23., 24., 25.	60%
2	Specific Information	6., 9., 12., 17., 21.	20%
3	Inference	3., 13., 22.	12%
4	Vocabulary	15., 19.	8%
Total		25	100%

Table 3. Table specification of posttest

NO	Objective	Number of items	Percentage
1	Identifying main idea	1., 3., 5., 8., 9., 10., 11., 12., 14., 15., 18., 20., 22., 23., 25.	60%
2	Specific Information	2., 6., 16., 21., 24.	20%
3	Inference	7., 13., 17.	12%
4	Vocabulary	4., 19.	8%
Total		25	100%

b. Construct Validity

Construct validity is concerned with whether the test is actually in line with the theory of what reading comprehension means. To know the test was true reflection of the theory in reading comprehension, the researcher examined whether the test questions actually reflected the means of reading comprehension or not.

2. Reliability of the Instrument

Reliability refers to the extent to which the text is consistent in its score, and gives us an indication of how accurate the test score are (Hatch and Farhady, 1982: 244). To test the reliability of the instruments, the writer used *split-half* method in which the reading tests were divided into halves (Hatch and Farhady, 1982: 246). By splitting the test into two equal parts (first half and second half); it is made as if the whole tests have been taken in twice. The first half contained passage 1, 2 and 3 and the items were number 1. until 18. The second half contained passage 4, 5 and 6 involving question number 19. until 40. Moreover, by arranging the tests into first half and second half allowed the writer to measure the test reliability by having *split half method*.

To measure the coefficient of the reliability between the first and the second half, Pearson Product Moment was used, which was formulated as follows:

$$r_{xy} = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{n(\sum x^2) - (\sum x)^2} \sqrt{n(\sum y^2) - (\sum y)^2}}$$

Where,

- n = number of students
- r = coefficient reliability between first and second half
- x = total number of first half
- y = total number of second half
- x^2 = square of x
- y^2 = square of y
- $\sum x$ = total score of first half items
- $\sum y$ = total score of second half items

(Hatch and Farhady, 1982: 222)

Then to know the coefficient correlation of the whole items, Spearman Brown's Paraphony Formula was used. The formula was as follows:

$$rk = \frac{2rl}{1+rl}$$

Where:

rk = the reliability of full test

rl = the reliability of half test

The criteria of reliability are:

0.90- 1.00 = high

0.50- 0.89 = moderate

0.0- 0.49 = low

(Hatch and Farhady, 1982: 286)

3. Level of Difficulty

To see the index of difficulty, the writer used the following formula:

$$I.D = \frac{R}{N}$$

Where,

LD = level of difficulty

R = the number of the students who answer correctly

N = the total number of the students

The criteria are:

< 0.30 = Difficult

0.30- 0.70 = Average

> 0.70 = Easy

(Heaton, 1975: 182)

4. Discrimination Power

The discrimination power (DP) is the proportion of the high group students getting the items correct minus the proportion of the low-level students who getting the items correct. In calculating the discrimination power of each item, the following formula was used:

$$DP = \frac{\text{correctUpper} - \text{correctLower}}{1/2N}$$

Where,

DP = Discrimination Power
 U = Number of upper group who answer correctly
 L = Number of lower group who answer correctly
 N = Total number of the students.

The criteria are:

DP: 0.00-0.19 = Poor
 DP: 0.20-0.39 = Satisfactory
 DP: 0.40-0.69 = Good
 DP: 0.70-1.00 = Excellent
 DP: - (negative) = Bad items, should be omitted

(Heaton, 1975: 182)

5. Administering the pretest

The test aim was to know the input or the state of students' ability in reading comprehension before they were given the treatment. The test was used by the researcher was multiple choice questions with four alternative answers for each question. One was the key answer and the last three were distracters.

6. Giving the treatment

There were three times treatments in this research. The anecdote text was used as the media in teaching reading to the students by using self-questioning strategy.

7. Administering the post test

The next step were administered the post test to the experimental class. The type of the test was similar to the pretest. The urgency of giving the test was to find out whether there was any increase of the students' reading comprehension achievement.

8. Analyzing the result of both pretest and post test

The next step of the research analyzed the data. Drawing conclusion from the tabulated results of the pre-test and post-test administered.

3.5 Scoring System

The scoring system that was used in this research is dividing the right answer by total items timed 100. In scoring the students' result of the pre-test and post-test, the formula by Arikunto (1997:212) was employed:

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

Notes:

S = score of the test
R = the right answers
N = the total item

3.6 Data Analysis

The writer computed the students' score in order to find out the students' achievement in reading anecdote text through Self-Questioning Strategy using the following steps:

1. Scoring the pre-test and post-test.
2. Tabulating the results of the test and calculating the score of the pre-test and post-test.
3. Drawing conclusion from the tabulated results of the pre-test and post-test administered, that was by statistically analyzing the data using statistical computerization i.e. *Repeated Measure T-test for Social Science (SPSS)*

version 16.0 for windows to test whether the increase of students' gain is significant or not, in which the significance was determined by $p < 0.05$.

3.7 Hypotheses Testing

After collecting the data, the researcher recorded and analyzed them in order to find out whether there is an increasing in students' ability in reading comprehension conveyed in anecdote text or not after the treatment. The writer used Repeated Measure T-test to know the level of significance of the treatment effect.

The formulation is:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{S_D / \sqrt{n}}$$

Notes:

\bar{x}_1 = Mean from pre-test

\bar{x}_2 = Mean from post-test

S_D = Standard error of differences between means

n = Subjects on sample

(Hatch and Farhady, 1982:114)

The criteria are:

1. If the t-ratio is higher than t-table: H_1 is accepted
2. If the t-ratio is lower than t-table: H_0 is accepted