CHAPTER III

RESEARCH METHOD

In this chapter, the researcher would like to discuss several sub of chapters, there are, research design, population and sample, variables, instrument, validity of the instrument, reliability of the instrument, the difficulty level of the test items, the discrimination power of the test item, data collecting techniques, research procedures, analyzing the data, data analysis, and hypothesis testing. All of those parts will be presented as follows.

3.1. Research Design

This research used quantitative research in order to know the improvement of students' vocabulary mastery. This research also used qualitative research in order to know student's perception toward story completion. *One-Group pre-test and Post-test design* was used to this research. The researcher used one class as the experimental class. This research was conducted to see whether there was an improvement of students' vocabulary mastery after being taught by using Story Completion technique. The treatment was conducted three times. The researcher conducts pretest, treatment, and posttest. Here is the illustration of one group pretest posttest design.

T1 X T2

Where:

T1: Pretest

X: Treatment

T2: Posttest

(Setiyadi, 2004: 40)

3.2 Population and Sample

The population of this research was the second grade students of SMP Negeri 2 Kotagajah. SMP Negeri 2 Kotagajah have 8 classes in every grade. The researcher chose one class as the sample of this research by using random sampling. Finally the researcher decided to choose VIII A class as the sample. The numbers of students in the class were 30 students. This research was conducted in seven meetings, which was 1 meeting for tryout, 1 meeting for conducting pretest, 3 meeting for conducting treatment, and 1 meeting for conducting posttest and 1 meeting for conducting interview.

3.3. Variables

Hatch and Farhady (1982:12) said that variable as an attribute of person or an object which varies from person to person or from object to object. Besides, in order to

assess the influence of the treatment in research, variable can defined as independent and dependent variables. According to Hatch and Farhady (1982:15), types of variable as follows:

1. Vocabulary mastery as independent variable (X) because this variable is major and will be investigated.

2. Speaking ability as dependent variable (Y) because this variable is measured to determine the effect of vocabulary mastery.

3.4. Instrument

Instrumentation refers to the tools or means by which investigators attempt to measure variables or items of interest in the data-collection process. There are two instruments that will be used in this research.

3.4.1 Vocabulary Mastery Test

The writer made multiple choice tests of vocabulary as pre-test and post-test to know the students' vocabulary mastery. This test was conducted in the first meeting and the last meeting. This test was conducted to know the students' different of vocabulary mastery before and after being taught through story completion technique in teaching speaking skill. For the test of vocabulary mastery, the researcher was prepared 40 items test in the form of multiple choices. After giving the test to the students, the

researcher analyzed the appropriate test items in order to find the validity of the research. The test was conducted in 40 minutes for the tryout and 35 minutes for the test.

3.4.2. Interview

The interview was conducted to know student's perception toward the implementation of story completion. The students' answers were classifies and generalizes as the resource. Some representatives of the students as the interviewees were chosen from low and high scores based on the mean score of the post-test. The interview was in the form of open and informal questions in informal situation (the questions must be in the form of explanation or description rather than "yes" or "no" answers, to avoid the students from being reluctant to answer the questions were give and the situation helps the students to express what they feel freely). The interview contained eight questions related to the advantages of using story completion.

3.5. Validity of the Instrument

• Content Validity

The validity of the test is the extent to which it measures what it is supposed to measure and nothing else (Heaton, 1991:159). Content validity is concerned with whether test is sufficiently representative and comprehensive for the test. In the content validity, the materials gave were suitable with the school curriculum. To

fulfill this validity, the researcher saw all the indicators of the instrument and analyze

them whether the measuring instrument represent the material that is measure or not.

The researcher used the table of specification to check content validity of the test

items. The total percentage in the table indicates the relatives' degree of emphasis of

each content area and each instructional objective were given in the test. The table

specification was used to determine which test was more relevant to our particular

situation and was also necessary to check whether tests item has good content

validity.

Table 1. Table of Specification of Vocabulary Test

Content	Aspect	Items	Percent
Vocabulary	Verbs	8,13,24,26,27,28,29,30,33	25.71%
	Adjectives	1,3,4,6,7,9,14,15,31	25.71%
	Adverbs	2,10,12,16,18,21,22,23	22.87%
	Nouns	5,11,17,19,20,25,32,34,35	25.71%
Total		35 items	100%

• 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 (Shohamy, 1985:74). Construct validity

focused on the kind of test that is used to measure the ability. It means that the test

items should really test the students whether they have mastered the material that has

been taught or not. According to Setiyadi (2006:26), if the instrument just measure

one aspect, for example vocabulary, the construct validity can be measured by

evaluating all items in the test. If all items have measured vocabulary mastery of the students, this instrument has fulfilled construct validity.

3.6. Reliability of the Instruments

Reliability refers to the extent to which the test is consistent in its score and gives us an indication of how accurate the test score are (Hatch and Farhady, 1982: 244). To measure the coefficient of the reliability between odd and even group, the research uses the Pearson Product Moment formula as follows:

$$R_{xy} = \frac{\sum XY}{\sqrt{[\sum X2][\ \sum Y2]}}$$

In which,

Rxy: coefficient of reliability between the first half and the second half items

X : the total numbers of odd items (variable)

Y : the total numbers even items (variable)

X2 : square of X

Y2 : square of Y

Then, the writer used "Spearman Brown's Prophecy Formula" (Hatch and Farhady, 1982: 246) to determine the reliability of the test as follows:

$$r_{11} = \frac{2\ rxy}{1 + rxy}$$

Notes:

r$_{11}$ = the reliability of the test

rxy = the reliability of half of the test

(Hatch and Farhady, 1982:246)

The criterion of reliability are:

- 0.90-1.00 : high

- 0.50-0.89 : moderate

- 0.0-0.49 : low

If the result of the reliability is less than 0, 50 then the item should be revised.

3.7. The Difficulty level of the Test Items

Level of difficulty (LD) relates to "how easy of difficult the item is from point of view of the students who took the test " (Shohamy, 1985:79). The level of difficulty can be determined by dividing the number of students who get it right by the total number of students (Shohamy, 1985:79).

To see the level difficulty, the research used the formula as follow:

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

in which:

LD : Level of Difficulty

R : the number of students who answer correctly

N: the total of students following the test

The criteria are:

- Less than 0.30   = difficult

- 0.30-0.70   = middle (good item)

- More than 0.70-1.00   = easy

(Shohamy, 1985)

Based on the statements above, it is clear that all the test item should based on the criteria above and the items which not fulfill the requirements should be omitted or revised.

3.8. The Discrimination Power of the Test Item

This index refers to the extent to which the item differentiates between high and lower levels students on the test. A good item according to this criterion is one that good students do well on and bad students fail. To see the discrimination index, the researcher uses the following formula:

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

In which,

DP: Discrimination Power

U: the total of correct answer of the higher group

L: the total of correct answer of the lower group

N: total number of 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

3.9. Data Collecting Technique

There are some techniques that will be used to collect the data in this research. They are as follows:

1. Try Out

Try out was given in order to check the quality of the instruments in vocabulary mastery test. The test was multiple choices for vocabulary test. The tests were given in the first meeting. The try out administered in the C class of SMPN 2 Kotagajah as the experimental class in the first meeting before pre-test of teaching through story completion in the observation class.

2. Pretest

Pretest was given before presenting the treatment to know how far the students ability. The test was multiple choice for vocabulary test. The tests were given in the second meeting, the students will be tested in the second meeting to know the

students vocabulary mastery before giving treatment using Story Completion Technique in teaching speaking.

3. Treatment

Treatment was conducted after giving the pretest. Treatment was the process of teaching the student through Story Completion technique. The treatment conducted three times during the research.

4. Posttest

Posttest was given after treatment. For vocabulary mastery, the students were given multiple choice tests. They have done the same activity in pretest. This test was designed to know the different of student vocabulary mastery after conducting the treatment.

5. Interview

The researcher gave the student interview in the last meeting after conducting the posttest. The interview was purposed to know how the students perception about Story Completion Technique and their vocabulary achievement.

3.10. Research Procedures

The material was based on the following procedures:

1. Determining the population and sample of the research. The sample of the research was determined through simple random sampling. It means that the researcher did not know the ability of students in every class. The researcher selects the sample randomly using lottery.

2. Trying of instruments (vocabulary mastery test) in order to check its validity, reliability, difficulty level, and discrimination power.

3. Administering pretest. The researcher gave the test for the student using multiple choice tests to know the basic of students' vocabulary mastery before being taught by using Story Completion in teaching speaking.

4. Giving treatment. The researcher used Story Completion technique as a tool in learning process. The researcher used three times to teach using Story Completion technique.

5. Conducting Posttest. Posttest was begin after the treatment, this test was designed to know the increasing of students' vocabulary mastery.

6. Conducting Interview. The researcher gave the questions to students in the last meeting.

3.11. Analyzing the Data

The researcher analyzed the data by comparing the average score (mean) of the pretest and posttest. The average scores were to know the difference of the students'

vocabulary mastery through story completion technique in teaching speaking. The statistical formula for counting the average score is as follows:

$$\overline{x} = \frac{\Sigma x}{N}$$

Where:

X   : mean

Σx   : total score

N   : number of students

3.12. Data Analysis

To see whether there was an improvement of students' vocabulary mastery, the researcher used these following steps:

1.   Scoring the pretest and posttest

2.   Calculate the score using SPSS to see whether there is an influence or not after the students are taught by using story completion technique.

3.13. Hypotheses Testing

Hypothesis of this research is:

1. There is a difference of the students' vocabulary mastery after being taught through story completion technique in teaching speaking.

The hypotheses are analyzed by using repeated measures T-test of Statistical Package for Social Science (SPSS). The researcher uses the level of significance 0.05 in which the hypothesis is approved if sign < p. it means that the probability of error in the hypotheses is only 5%.

H_0 : There's no influence

H_1 : There's an influence

If $P < 0,05$ H_1 is accepted

If $P > 0,05$ H_0 is accepted