

III. RESEARCH METHOD

This chapter discusses the research methods that will use in this study, such as: research design, population and sample, setting of the research, variables, and procedure of the research, data collecting technique, instruments, and data analysis.

3.1 Research Design

This research is quantitative research because it is focused on the project (result of the test) not the process of teaching learning and the objective is to find out the correlation between students` ability in vocabulary and their reading comprehension of narrative text achievement. In this research there is no control and no treatment to the subject, thus ex post facto design is used in this research.

Hatch and Farhady (1982 :26) state that ex post facto design is often used when the researcher does not have control over the selection and manipulation of the independent variable. This is why researcher looks at the type and/or degree of relationship between two variables rather than at a cause and effect relationship.

The subject of the research was only one group therefore the design of the research was ex post facto design, and the formula can be seen as follows :



Where :

T1 : Vocabulary test

T2 : Reading comprehension of narrative test

(Hatch and Farhady, 1982 : 27)

3.2 Population and Sample

The population of this research is the third year students of SMP Negeri 1 Tegineneng. There are six classes of grade IX in 2013/2014 academic year each class consists of 30 students. Among the VIII classes which the number of the entire students at grade VIII is about 155 students, the researcher took only one class as the sample.

In this research, the researcher determined the sample by using simple probably random sampling. By using simple probably random sampling, every class in population gets the same opportunity to be chosen or to be the sample of the research. The name of six classes is written on small paper given the code number. Then one of the papers took randomly to be the sample of the research. And grade IX D was the chosen as the sample of the research.

3.3 Research Procedures

Procedures of this research carried out through several steps as follow :

3.3.1 Determining the Problems

The researcher determined the problem based on the real observation , and according to the previous research he found that there was one issue that should be resolved.

3.3.2 Determining the sample of the research

The third year students` of SMPN 1 Tegineneng consisted of six classes, with random sampling was used to determine the class that would be taken as the participants for this research. This technique was applied because each of the second year students at the school had the same opportunity to be participant.

3.3.3 Designing Research Instrument

In designing the reading instrument the writer took material from the students` text book. The designing process materials that was taught to the students based on the curriculum.

3.3.4 Administering Try Out

Before the instrument distributed, the try out was conducted to measure the reliability of the test and to make sure whether the test is good or bad for the students. The test was previously tried out to the students whose level is equal to the sample of the research. The test was administered to find out the quality of the test before it was used, whether the items are good or not in validity, reliability,

level of difficulty, and the discrimination power. The researcher administered the try out using reading texts with 50 item OF multiple choices done in 60 minutes. The maximum score is 100, each correct answer has 2 points. And 50 vocabulary tests in the context, then the correct answer is multiplied by 1000 word level and then divided with the number of items test. So the researcher could estimate the students` ability vocabulary.

3.3.5 Administering the Test

The research will hold in two meetings. The first meeting was used for conducting vocabulary test, and the second meeting s reading comprehension of narrative text of test.

3.4 Data Collecting Technique

In this research, to data collecting techniques will used :

3.4.1. Vocabulary Test

The test used is MCQs (Multiple Choice Quenstions) items. The test prepared particularly for measuring the depth of students` vocabulary. The primary aim of this test is to investigate students`s recognition of vocabulary. The test consists of 50 items test. The students have to choose the right answer in multiple choices. The chief goal of this vocabulary test is to measure the depth of vocabulary knowledge semantically. This type of test is to develop way in vocabulary. It gives very low chance of guessing correctly.

All the words being chosen are content words, namely adjectives, verbs, and noun. The words which are orthographically, phonetically, and semantically similar or the same are avoided because they are easily understood, for example economy, data, objective, oxygen, etc. This format of the test is considered practically, easy to be administered and scored.

The students` mastery in vocabulary is gained by counting the number of correct answer is divided by total numbers of items and then multiplied by 20. From this the researcher can find the proportion of correct answer. Then he can still estimate the number of students`s vocabulary by multiplying it with the population 1000 words level. The formula can be seen as follows :

$$S = \frac{C}{20} \times 1000 \quad S = \frac{C}{20} \times 800$$

Where :

S : the score of the test C : the total of the right answer of vocabulary level test

3.4.2. Reading Comprehension of Narrative Test

There are 50 items for reading comprehension of narrative text of test. It is multiple choice with four option (a,b,c,d) with one correct answer and three distracters. The test consists of five aspects of reading skill, they are : determining main idea, identifying specific information, interference, reference, and vocabulary. The scoring criterion is determined around 0-100, so that if a student is able to answer all the test items, his/her score is 100. In scoring the students`

result of the test, the researcher uses this formula. The formula can be seen as follows :

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

Where :

S : the score of the test

R : the total of right answer

n : the total items

3.5 Analyzing The data

After getting the data of students` vocabulary mastery and reading comprehension of narrative tests, the researcher analyzed the data by using Pearson Product Moment Correlation Coefficient Formula (SPSS) for Window Version 17.0 to find out the correlation between students` vocabulary and their reading comprehension of narrative text.

3.6 Validity of the test

A test can be said valid if the test measure the object to be measured and suitable with the criteria (Hatch and Farhady, 1982 : 250). Every test whether, it is a short informal classroom test or a public examination test, it should be valid as the constructor can make it. The test is used for collecting the data covers three validities : content, construct and face validity.

a. Content Validity

Content Validity is the extent to which the test measures a representative sample of the subject matter content. The focus of the content validity is

adequacy of the sample and not simply on the appearance to the test (Hatch and Farhady : 1982:251). Content validity is intended to know whether the test items are good reflection of what will be covered. The test items are adapted from the materials that have been taught to the students should be constructed as to content representative sample of the course. (Heaton, 1975:160)

To get the content validity, the items test is determined according to the material that has been taught to the students. The item test of vocabulary and reading comprehension of narrative text are based on KTSP Curriculum of senior High School.

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 (Shohamy, 1985 :74). Regarding the construct validity, it measures whether the construction has already referred to the theory, meaning that the test construction has already in line with the objective of the learning (Hatch and Farhady, 1982 : 251). It means that construct validity can be found by relating the instrument with the theory of what it means to know certain knowledge skills. In this case, the researcher measures students` vocabulary and reading comprehension of narrative text. Therefore the instrument for measuring the ability of vocabulary, the researcher uses vocabulary level test in the context. Then the instrument for measuring reading of narrative test is comprehension test which

consist of identifying the specific information, determining the idea, references, inferences and vocabulary are formulated in the test items.

c. Face validity

Face validity means that the test has good typing and clear instruction that will not make the students get confused (Arikunto, 2006: 173). In this research, the researcher gives the questionnaire to a group of students. The questionnaire consist of some question related to the test which is given by the researcher in order to know whether the instrument of the test has fulfilled face validity or not. In this research the face validity of the test is checked and examined by giving questionnaire to some English teachers. Based on the questionnaire, it can be assumed that the test which is in the form of fill gap test looked right and understandable to others testers, teachers and test to measure whether the test has good validity, construct validity, the researcher used content, construct, and face validity since they were considered to be important.

Table 1. Specification of Reading In Narrative Text

No.	Skills of Reading	Item numbers	Total items	Percentage of items
	Identify the main idea	1,9,11,17,31,41,43,45,46,48	10	20%
	Specific Information	3.6.8.20.26.27.30.32.33,35,36,37,47,49	15	30%
	Inference	2,6,7,12,13,18,23,25,34,39,40,42,	12	24%

	Reference	5,14,21,22,24,28,38,44	8	16%
	Vocabulary	4,10,15,16,50	5	10%
	Total	50		100%

Table 2. Specification of Vocabulary Item Test

No.	Word Class	Item numbers of the test	Percentage
1	Verbs	1,8,15,21,24,30,32,43,44,48	20%
2	Nouns	10,13,14,16,17,19,26,28,34,36, 39,40,41,46,50	30%
3	Adjectives	4,5,6,11,18,20,22,23,25,27, 33,35,37,38,42,	30%
4	Adverbs	2,3,7,9,12,29,31,45,46,49	20%
	Total	50	100%

3.6.1 Reliability

Reliability refers to the whether the test is consisted in its scoring and gives us an indication of how accurate the test score are (Shohamy, 1985:70).

The researcher used split – half method to estimate the reliability of the test, because this method treats the two halves of a measure as alternative forms. It provides a simple solution to the problem that the parallel-forms method faces : the difficulty in developing alternate forms, it involves : administering a test to a group of individuals, splitting the test in half, correlating scores on one half of the

test which scores on the other half of the test. The correlation between these two split halves is used in estimating the reliability of the test.

Hatch and Farhady (1982: 246) states that reseacher is using the split half method, they first must split the test into two similar parts. Then they correlate the scores of the students on the two halves of the test used if they are two separated test. If the item test is homogenous, all odd number items become one half and even number items become other half.

Split half technique was used by the researcher to estimate the reliability between odd and even group, and Pearson product moment formula is applied as follows:

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

Where :

r_l : Coefficient of reliability between

x : Odd Number

y : Event Number

x^2 : Total score of odd number items

y^2 : Total score of even number items

(Lado,1961 in Hughes, 1991 : 32)

After getting the reliability of half test, the researcher then will be used Spearman Brown`s Prophecy (Hatch and Farhady , 1982:246) to determine the reliability of the whole test as follows :

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

where:

r_k : the reliability of the whole tests

r_l : the reliability of half test

(Hatch and Farhady, 1982:247)

The criteria of the reliability are :

0.80 - 1.00	: High
0.50 - 0.79	: Moderate
0.00 - 0.49	: Low

(Hatch and Farhady, 1982:247)

The researcher found that the reliability of vocabulary test and reading in narrative test were high 0.854 (on vocabulary test) and 0. 873 (on reading narrative test) (see appendix 12 and 13). According to criteria of the reliability test, the reliability of 0.854 point belongs to moderate level, so it indicated that the data collecting instrument in this research was reliable and good. Therefore the result of the test were believed as the reflection of their reading ability which was accurate and consistent.

3.6.2 Level of difficulty

Level of difficulty relates to ` how easy or difficult the test item is form the point of view of the students who take the test. It is important since the test items which are too easy (that all the students get right) can tell us nothing about differences

within the test population” (Shomamy, 1985 : 79). And if the test items are too difficult for the students, the researcher omits the test items. Level of difficulty will be calculated by using the following formula :

$$LD = \frac{U+L}{N}$$

Where :

LD = level of difficulty

U = the number of upper group who answer correctly

L = the number of lower group who answer correctly

N = total number of students

The criteria are :

LD <0.03 = hard

0.30 <LD>0.70 = average

LD.0.70 = easy

(Shomamy, 1985:79)

The researcher had found that were 4 items (8,5 %) were hard, 42 items (43%) were average, and 4 items (8.5%) were easy in vocabulary try out test. Then in narrative try out test, the researcher has found that there were 6 items (12,5 %) were hard, 40 items (80 %) were average and 4 items (7,5 %) were easy.

3.6.3 Discrimination Power

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 this

criterion is “ one in which good students do well, and bad students fail” (Shomamy, 1985:81). To calculate the discrimination power (DP) of the items, thye researcher used the following formula :

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

DP = discrimination power

U = the proportion of lower froup students

N = total number of students

(Shomamy, 1985 :82)

The criteria are :

0.00-0.20 = Poor

0.21-0.40 = Satisfactory

0.41-0.70 = Good

0.70-1.00 = Excellent

- (negative) = Bad items (should be omitted)

Based on the table and criteria on appendix 5 of vocabulary try out test, the researcher conclude that were 10 items were poor, 30 items were satisfactory, 10 items were good, then in narrative try out test , the researcher conclude that were 10 items were poor, 25 were satisfactory, 14 items were good, and 1 items were excellent.

After counting the level of difficulty and discriination power of each item, the researcher found that 10 items could not meet the criteria of good test and should

be dropped in vocabulary try out test. The items of vocabulary try out test were numbers 2,9,11,12,13,42,43,45,46,49 was drooped. (Appendix 4)

Based on the analysis , the researcher found that 10 items could not meet the criteria of good test and should be drooped in narrative try out test. The items were number 6,16,21,23,26,30,32,38,43,44 was drooped.

3.7 Data analysis

Data analysis is the process of organizing the data in order to gain the regularity of the pattern and other form of the regularity of the research, while the data interpretation is the process giving meaning to the founded patterns and regularities (Setiyadi, 2006 : 255). After conducting the test, the researcher analyzes the data. It is used to know wheter there is correlation between students` ability in vocabulary and their reading comprehension of narrative text achievement.

The researcher uses the following steps :

1. Scoring the vocabulary and reading comprehension of narrative text of test
2. Tabulating the result of the vocabulary and reading comprehension of narrative text of test and calculating the scores of the test.
3. Analyzing, interpreting and discussing the tabulated of the result.
4. Drawing conclusion from tabulated result of the test.

3.8 Data Treatment

1. Normality test of the data

Normality test is used to measure whether the data are normally distributed or not (Setiyadi,2006:111-112). The researcher uses SPSS new version to analyze the data. The hypothesis for the normality test are follow :

Ho: the data is not distributed normally

H₁: the data is distributed normally

In this research , H₁ is accepted if $p > \alpha$ ($p =$ the dignificant score of the students, $\alpha =$ the significant level), and the researcher used level of significant 0,05.

2. Random Test of the data

The random test is conducted if the data from the experimental class and the control class is taken randomly still doubtful. The data should be tested again by using SPSS new version to know the random test. The hypothesis for the random test are as follow :

Ho: the data is not random

H₁: the data is random

In this research, H₁ is accepted if $p > \alpha$, the researcher used level of significant 0,05.

3. Homogeneity test of the data

This test used to determine wheter the sample subects meets the criteria of equal variance or not. The researcher uses SPSS new version to analyze the data. The hypoteses for the normally test are as follow :

Ho: the variance is not homogenous

H₁: the data is homogenous

In this research, H₁ is accepted if $p > \alpha$, the researcher use level of significant 0,05.

3.9 Hypotesis Testing

The hypotheses of this research becomes :

1. Ho : There is no positive correlation between students` mastery in vocabulary and their reading comprehension of narrative text achievement.
2. H₁ : There is a positive correlation between the students` mastery in vocabulary and their reading comprehension of narrative text achievement.

In order to prove the hypothesis in this research, the researcher uses the following steps :

- a. Using the Pearson product moment in order to investigate the investigate the hypothesis.
- b. Determining the degree of freedom (df). The formua is $N - 2$

- c. Determining the level of significant. In this case the researcher used significant level 0,05
- d. Determining the result of correlation in order the hypothesis. It is achieved by comparing the result of r_{xy} with the critical value of r in the r_{table} :
 1. If $r_{xy} > r_{table}$ it means that H_1 is accepted and null (H_0) hypothesis is rejected
 2. If $r_{xy} < r_{table}$ it means that H_1 is rejected and null (H_0) hypothesis is accepted