

III. RESEARCH METHODOLOGY

In this research, the writer discussed setting of the research, research design, variable, population, sample, instruments, validity, and reliability, the difficulty level of the test, discrimination power of the test, scoring, procedure, analyze the data and hypothesis as stated below.

3.1. Setting of the Research

The researcher decided the time and place of the research as follows;

The data were collected in two days. The first day, the students conducted translation test. The second day, they were asked to fill the reading comprehension test. The place was in class X MIA³ of SMA Muhammadiyah 1 Trimurjo in academic year 2014/2015. The researcher chose this school because the students in this school had poor reading comprehension, so the researcher investigated the problem with translation ability test and reading comprehension test.

3.2. Design

In this research, the researcher wanted to find the correlation between students' translation ability and their reading comprehension. This research was about multiple correlation research. To conduct the research, the researcher used a correlational design of *ex post facto designs*. Here, the researcher administered the tests to know the students' translation and their reading comprehension. So, there was no treatment or experiment of any kind to the subjects. In line with the nature of research, the researcher administered the test about translation and reading comprehension. After that, the data gained from the test were analyzed to see whether translation ability is related to reading comprehension or not. The researcher used quantitative method to analyze the result of research. This method was used to find the correlation between students' translation ability and their reading comprehension.

T1.T2

Where:

T1: Reading test

T2: Translation test

(Setiyadi, 2004 : 40)

3.3. Variable

In this research there were two variables, independent and dependent variables. The independent variable was students' score in translation test. On the other

hand, the dependent variable was students' score in reading comprehension test. The score showed data of students' translation and reading comprehension which was to identify the correlation between students' translation ability and their reading comprehension.

3.4. Population and Sample

The population of this research was the first grade students of SMA Muhammadiyah 1 Trimurjo in academic year 2014/2015. There were 10 classes of the first grade students that consisted of 30 students for each class. The researcher chose class X MIA² through random sampling as a sample in order to find the validity, reliability, difficulty level, and discrimination power of the test item. After getting a good item, by the random sampling technique, the researcher used X MIA³ at the SMA Muhammadiyah 1 Trimurjo as the subject to collect the data.

3.5 Instruments

In this research, the researcher used two instruments for collecting the data. There were instrument of translation, and reading tests. The researcher tried out 50 items of reading comprehension test. After that, the researcher analyzed those items to see their difficulty level and discrimination power. Then only 30 items of reading comprehension test and one items of Translation test were chosen by the researcher, which had the perfectness of difficulty level and the ideal of discrimination power. The following are the descriptions of instrument, the level of difficulty, discrimination power of the test items, validity and reliability.

3.5.1 Reading Comprehension Test

The researcher made 30 test items in the form of descriptive text. The students were asked to read the passage then identified the main idea, specific information, reference, inference, and translation of the passage. Then, they scrolled back to the relevant point in the text as the students did each question. 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 90 minutes for translation and reading test.

3.5.2 Translation Test

For the translation test, the researcher prepared translation test in form of writing. The students should read the text carefully and translate it in indonesia. The text of translation was consisted in reading comprehension test.

3.6 Validity of the Instruments

Validity is defined as the extent to which the instrument measures what it purposes to measure. It means that validity is related directly to the purposes of the test. Content of validity, the test is a good reflection of what has been taught and the knowledge which the teacher wants her students to know. Construct validity concerns with whether the test is actually in line with the theory of what it means to the language (Shohamy, 1985:74) that is being measured. Based on the theory, the researches validated the test in terms of content and construct validity.

3.6.1. Validity of the Reading Test

a. Content Validity

In relation with the content validity, it was intended to see whether or not the tests were good representation of the materials to be tested. The ways to find out this kind of validity were formulating the questions based on the aim of teaching reading for the first grade of senior high school students and choosing the topics of the texts concerning the descriptive text provided in the guidelines based on 2013 English curriculum, and the syllabus of first years SMA students and represent of the materials that had been taught by the teacher.

The content of the test is presented in the table of specification below:

Table 3.1. Table of Reading Comprehension Test Specification

	Skills of Reading	Item Number	Percentage of Item
1.	Identify the main idea	5, 6, 7, 10, 14, 22, 25	30 %
2.	Specific information	1, 4, 2, 12, 15, 16, 17, 19, 20, 23, 27, 30	46,67 %
3.	Reference	11,16, 28,29	3,33 %
4.	Inference	8,14,21,26,	3,33 %
5.	Vocabulary	3, 9, 13, 18, 24	16,67%
	Total	30 items	100%

b. Construct Validity

Construct validity is concerned whether the test is actually in line with the theory of what reading comprehension means (Hatch and Farhady, 1982). The measurement tool seeks operation of the concept, typically measuring several observable phenomena that are expected to reflect the underlying psychological concept. To make sure the test reflects the theory in reading comprehension, the writer examined whether the test questions actually reflect the means of reading comprehension or not.

3.6.2. Validity of Translation Test

a. Content Validity

In relation with the content validity, it was intended to know whether the test items are good reflection of what will be cover. In this research, it could be seen that the instrument is valid in content because the researcher had used translation test in the form of writing of descriptive text that is supposed to be comprehended by the first grade of senior high school students.

b. Construct Validity

In this researcher, the researcher administered translation test in the form of writing and the technique of scoring the students' is based on five aspects of writing; they are content, organization, vocabulary, language used, and mechanic. Therefore, it can be concluded that is valid in construct.

3.7 Reliability of the Instruments

3.7.1. Reability of Reading Test

Shohamy (1985) states that reliability refers to the extent to which the test is consistent in its score. It can also give an indication of how accurate the test score. The researcher used split-half method to estimate the reliability of the test, since the formula is simple. It is because (1) it avoids troublesome correlation and (2) in addition to the number of item in the test, it involves only the test, mean, and standard deviation, both of which are normally calculated anyhow as a matter of routine. To measure the coefficient of the reliability between odd and even group, the research used the Pearson Product Moment formula as follows:

$$R_{xy} = \frac{\sum XY}{\sqrt{[\sum X^2][\sum Y^2]}}$$

In which,

R_{xy} : 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)

X^2 : square of X

Y^2 : square of Y

(Lado, 1997)

Before getting the final data, the researcher administered the translation test and reading comprehension test. Then, the researcher used the formula to calculate the reliability of the translation test and reading comprehension test in order to know the items in the test showed the consistency in its score. The test items were reliable when the value closes to 1.

The criterion of reliability as follow:

- 0.90-1.00 : high
- 0.50-0.89 : moderate
- 0.0-0.49 : low

To know the coefficient correlation of whole items, the researcher used Spearman Brown's Prophecy Formula (Hatch and Farhady, 1982). The formula is as follows:

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

In which,

rk : the reliability of the test

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

3.7.2. Reliability of Translation Test

Reliability refers to the extent to which a test produces consistent results when administered under similar conditions (Hatch and Farady, 1982:244). In short, it

is the repeatability of measurement. In this research the researcher used translation test in form of writing. Therefore, this research used the reliability of writing. Then, the researcher used interrater reliability in scoring the students' translation test. It referred to the concern that a students' score may vary from rater to rater.

After calculating the students' translation score, the researcher calculated the data by using rank order formulation to test the reliability of the device. Reliability is the measure of how stable, dependable, trustworthy and consistent a test is in measuring the same thing each time (Worthen et al., in Wulandari D., 2012). In this case, the researcher used rater in scoring the students' translation test.

The formula is:

$$r = 1 - \frac{6 \times D^2}{N(N^2 - 1)}$$

r = Rank- Difference

D = The sum of difference between each pair of ranks

N = Number of students

(Harris, 1974: 142)

The criteria reliability (Hatch and Farhady, 1982) are:

- Reliability ranges from 0.81 up to 1.00 is very high
- Reliability ranges from 0.61 up to 0.80 is high
- Reliability ranges from 0.41 up to 0.60 is average
- Reliability ranges from 0.21 up to 0.40 is low

- Reliability ranges from 0.00 up to 0.20 is very low

After calculating the result of the students' translation test, the researcher calculated the data by using the formula from Harris (1974: 142). The reliability of translation test is 0.98.

Based on the criteria of reliability and calculation by Hatch and Farhady (1982), it can be concluded that the reliability of the raters is very high. It means that the researcher's way of scoring the data similar to the rater. They have almost the same scoring system so that there is no subjectivity in scoring the students' translation. Beside that the scoring criteria helps the rater in scoring the students' translation accurately. In addition, the result shows that both of them scored the students' translation consistently and fairly.

3.8 Difficulty level of the Test Items

Difficulty level is related to how easy or difficult the item was from the point of view of the students who took the test. It was important since the items, which were too easy (that students get right) can tell us nothing about differences within the test population. To see the level difficulty, the research used the formula as follow:

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

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 was clear that the test item should be based on the criteria above and the items which do not fulfill the requirements should be omitted or revised.

3.9 Discrimination Power of the Test Item

This discrimination power refers to the extent to which the item differentiates between high and low 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, the researcher used the following formula:

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

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:

1. If the value is positive discrimination – a large number or more knowledgeable students than poor students get the item correct. If the value is zero, it means that there is no discrimination.
2. If the value is negative, it means that more low students than high level students get the item correct.
3. In general, the higher, the discrimination power, the better. In classroom situation most items should be higher than 0.20 indexes.

(Shohamy, 1985)

3.10 Scoring

3.10.1. Scoring criteria of Reading Comprehension Test

In scoring students' result of reading test, the researcher used Percentage Score. The ideal highest score is 100. The score of translation ability and reading comprehension test was calculated by using this scoring test as follow:

$$S = \frac{r}{n} \times 100$$

Where:

S = the score of the test

r = the total of the right answer

n = the total of test items

(Henning, 1987)

3.10.2. Scoring criteria of Translation Test

In giving students' scores of the test, the researcher used the following criteria which were adopted from Jacobs (1981:90),

1. Content (30%) : the substance of writing, the idea expressed.
2. Organization (20%) : the organization of the content.
3. Vocabulary (20%) : the selection of words that suitable for the content.
4. Language use (25%) : the use of the correct grammatical and syntactic pattern.
5. Mechanic (5%) : the conventional device uses to clarify the meaning.

The criteria also devised from Jacobs (1981:90), as follows:

Content

- | | |
|-------|---|
| 30-27 | Excellent to very good: knowledgeable substantive, development of thesis/topic, relevant to assign topic. |
| 26-22 | Good to average: some knowledge of subject, adequate range, limited development thesis, mostly relevant to topic but lack detail. |
| 21-17 | Fair to poor: limited knowledge of subject, little substances, inadequate development of topic. |
| 16-13 | Very poor: does not show knowledge, not pertinent or not enough to evaluate. |

Organization

- 20-18 Excellent to very good: fluent expression, ideas clearly stated/supported, succinct, well organized, logical sequencing, cohesive
- 17- 14 Good to average: somewhat choppy, loosely organized, but main idea stand out, limited support, logical but incomplete sequencing.
- 13-10 Fair to poor: not fluent, ideas confused or disconnect, lacks logical sequencing and development.
- 9 – 7 Very poor: does not communicate, no organization or not enough to evaluate.

Vocabulary

- 20-18 Excellent to very good: sophisticated range, effective word or idiom choice and usage, word form mastery, appropriate register.
- 17-14 Good to average: adequate range, occasional errors of word or idiom, choice, usage, meaning confused or obscured.
- 13-10 Fair to poor: limited range, frequent errors of word or idioms, choice, usage, meaning confused or obscured.
- 9-7 Very poor: essentially translation, little knowledge of vocabulary, idioms, word form or not enough to evaluate.

Language Use

- 25-22 Excellent to very good: effective complex construction, few errors of agreement, tense number, word order/ function, articles, pronoun, preposition.
- 21-18 Good to average: effective but simple construction, minor problems in simple construction, several errors of agreement, tense, word order/function, articles, pronouns, prepositions, but meaning seldom obscure.
- 17-11 Fair to poor: major in complex/simple constructions, frequent errors of negation, agreement, tense, number, word order/ function, articles, pronouns, prepositions, and/or fragments, run-ons, deletions, meaning confused or obscured.
- 10-5 Very poor: virtually no mastery of sentence construction rules, dominated by errors, does not communicate, or not enough to evaluate.

Mechanics

- 5 Excellent to very good: demonstrated mastery of conventions, few errors spelling, punctuation, capitalization, paragraphing.
- 4 Good to average: occasional errors of spelling, punctuation, capitalization, paragraphing, but meaning not obscured.

- 3 Fair to poor: frequent errors of spelling, punctuation, capitalization, paragraphing, poor hand writing, meaning confused or obscured.
- 2 Very poor: no mastery of conventions, dominated by errors of spelling, punctuations, capitalization, paragraphing, handwriting, illegible or not enough to evaluate.

3.11 Procedure of the Research

The procedure of this research was like the following:

1. The problem was about students' translation ability and students' reading comprehension
2. Constructing the instruments for getting appropriate test items.
3. Selecting the population and sample for getting appropriate test items.
4. Trying of two kinds of the instruments (test of translation and reading comprehension) in order to check its validity, reliability, difficulty level and discrimination power.
5. Identifying which test items that appropriate for getting the data (see from the difficulty level and discrimination power).
6. Giving those tests to the students in order to identify the translation and reading comprehension achievement.
7. Scoring the students' test in order to find how far the students can answer all the test items.
8. After getting all the data, the researcher analyzed the data by using SPSS to know the result.
9. The last, making the conclusion of the research.

3.12 . Analyzing the Data

The researcher made steps after conducting the research by using tests; the researcher analyzed the data by using Correlation in SPSS (Statistical Program for Social Science). The researcher collected the data by looking at the result of test translation ability and reading comprehension to find out the result of students' translation ability and reading comprehension achievement. The result of the test would be in form of score or interval data. After getting the result, the researcher analyzed the correlation between students' translation and their reading comprehension.

3.13. Hypothesis Testing

The hypothesis testing was used to prove whether the hypothesis proposed in this research was accepted or not. The hypothesis was analyzed by using repeated measures T-test of Statistical Package for Social Science (SPSS) windows version 16. The researcher used the level of significance 0.05 in which the hypothesis was approved if $\text{sign} < p$. It means that the probability of error in the hypothesis was only 5%.

H_0 : There is no correlation between students' translation ability and their reading comprehension.

H_1 : There is correlation between students' translation ability and their reading comprehension