

## CHAPTER III

### RESEARCH METHOD

This chapter presents the method used. It deals with research design, the subject of the study, the population and sample, the instrument of the study, data collection, and the last is the data analysis.

#### **A. Research Design**

The research design in this study is correlation research that is used in the process of the testing hypothesis. The correlation method is a type of no experimental method that describes the relationship between two measured variables. A correlation allows us to make predictions from one variable to another. If two variables are correlated, we can predict from one variable to the other with a certain degree of accuracy.<sup>19</sup> The study is attempted to investigate the relationship between one phenomenon and the other. In this case, the researcher wants to investigate and describe whether there is a correlation between variable or not. The aim of this study is to survey and describe the correlation between students' vocabulary achievement and their speaking performance.

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<sup>19</sup> Jackson L, Sherri, *Research Methods and Statistic A critical Thinking Approach*, (United States of America: PreMediaGlobal, 2006), 148.

## B. Population and Sample

Population is particular group of type of people inhabiting in area.<sup>20</sup> Sampling is the group on which information obtained.<sup>21</sup> According to L.R. Gay, the minimum numbers of subject to be acceptable for a study depend on the type of research. Then for correlational studies at least 30 subjects are needed to establish the existence or nonexistence of a relationship.<sup>22</sup>

The population of this research is the eleventh students of English bilingual class and it becomes the sample of this research. The sample consists of 34 students of Science Class.

## C. Instrument of the Study

In this study, the researcher uses one instrument to gain the data. The instrument is test. The test is used to get the data of the correlation between vocabulary achievement and speaking performance. Test is a set of tool or a procedure in order to gain the data from the subject of the study. In this test, the researcher divides into vocabulary test and speaking performance test.

### 1. Vocabulary test

In this test, the researcher uses two types of vocabulary tests.

The first is multiple choice tests. According to Thornbury, **multiple**

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<sup>20</sup> John Best, *Research in Education* (New Jersey: prentice Hall, 1981), 8.

<sup>21</sup> Jack R. Frankel and Norman E. Wallen, *How To Design And Evaluate Research In Education sixth edition*, (New York: McGraw-Hill, 1992), 92.

<sup>22</sup> L.R. Gay, *Educational Research, Competencies Analysis and Application, fourth Edition*, (New York: Macmillan, 1992),136

**choice tests** are a popular way of testing in that they are so easy to score.<sup>23</sup> So, the researcher distributes a vocabulary test consist of 25 questions. The test is to measure students' vocabulary achievement. The researcher took some of the questions that have significant correlation with the students' compulsory book published by Intan Pariwara (LKS- Lembar Kerja Siswa PR SMA/SMK/MA Kelas XI) and other sources from internet. Distribution of the question items is presented in table 3.1.

**Table 3.1**  
**Distribution of the Question Items**

Question items	Topic
1	Expressing Sympathy
2, 11, 12, 25	Narrative
3, 6	Expressing love
4	Warning
5	Verb of Perception
7, 9, 14, 15, 21	Responding to or acting toward an action
10	Subjunctive Words
13, 17, 20	<i>Hortatory Exposition</i>
18, 19, 23	Descriptive
22	Synonym
24	Past Tense

<sup>23</sup> Thornbury, *How to Teach Vocabulary*, 132.

## 2. Speaking performance test.

In this test, the researcher distributes the story about Two Brothers adopted from the students' compulsory book published by Intan Pariwara (LKS- Lembar Kerja Siswa PR SMA/SMK/MA Kelas XI). Story telling is used to measure students' speaking performance. The researcher also uses the speaking rubric as the guidance while scoring the speaking performance.

### Scoring Rubric for Speaking Test

The researcher uses the scoring rubric to score the students' speaking performance. Here is the scoring rubric which is adapted from *Testing English as A second language* by Harris, 1967.

**Table 3.2**  
**Speaking Rating Sheet**

Pronunciation	
5	Has few traces of foreign accent.
4	Always intelligible, though one is conscious of a definite.
3	Pronunciation problems necessitate concentrated listening and occasionally lead to misunderstanding.
2	Very hard to understand because of pronunciation problems. Must frequently be asked to repeat
1	Pronunciation problems so severe as to make speech virtually unintelligible.
Grammar	
5	Makes few (if any) noticeable errors of grammar or word order.
4	Occasionally makes grammatical and/or word-order errors which do not, however, obscure meaning.
3	Makes frequent errors of grammar or word order which occasionally obscure meaning.

2	Grammar and word order errors make comprehension difficult. Must often rephrase sentence and/or restrict himself to basic virtually unintelligible.
1	Errors in grammar and word order so serve as to make speech virtually unintelligible.
Vocabulary	
5	Use the vocabulary and idioms are virtually that of a native speaker.
4	Sometimes uses inappropriate terms and/or must rephrase ideas because of inadequate vocabulary.
3	Frequently uses the wrong words; conversation somewhat limited because of inadequate vocabulary.
2	Misuse of words and very limited vocabulary make comprehension quite difficult.
1	Vocabulary limitations so extreme as to make conversation virtually impossible.
Fluency	
5	Speech as fluent and efforts as that of a native speaker.
4	Speed of speech seems to be slightly affected by language problems.
3	<i>Speed and fluency are rather strongly affected by language problems</i>
2	Usually hesitant; often forced into silence by language limitations.
1	Speech is so halting and fragmentary as to make conversation virtually impossible.
Comprehension	
5	Appears to understand everything without difficulty.
4	Understands nearly everything about the content.
3	Has understanding in a half plot of the story
2	Has little understanding the plot of story.
1	Cannot understand the content at all.

### 3. Try out

Before the instrument is used in the real situation, it is first try out. The test form was tried out in the MAN Trisula Sutojayan Blitar on April 2<sup>th</sup> – 9<sup>th</sup> 2016. There were 20 students who participated on the try out.

The purpose of conducting the try out is to know the reliability of the test scores and the validity of the items and also to determine the effectively of the test items and to check the time allocation. The items that were proven statistically satisfactory were included in the real test, and the items that were not statistically satisfactory were deleted or revised.

The time allocated for the try out was 40 minutes for vocabulary test, and 60 minutes for speaking performance test. In vocabulary achievement test, the students were given 30 questions on multiple choice forms. In speaking performance test, the students are given a text. The text is a story about two brothers, students should retell the story. The purpose of this test is to check the time allocation and to know the result of the student's speaking ability.

After the try out is administered, the reliability, the validity and the effectively of the test can be determined.

#### a. Reliability

Reliability is concerned with the effect of such random errors of measurement on the consistency of scores.

### 1) Reliability of Vocabulary Achievement Test

The coefficient of reliability is 0.00 – 1.00. The closer of coefficient to 1.00, it means that the stronger, the reliability of the test.<sup>24</sup> On the other hand, the closer of coefficient to 0.00, it means that the weaker the reliability of the test.

**Table 3.3**  
**The Reliability of Vocabulary Achievement**

Cronbach's Alpha	N of Items
.749	30

Based on this criterion, the reliability estimate for the 30 items of vocabulary achievement test is 0.749 so the tests are reliable. (See appendix 1)

### 2) Reliability of Speaking Performance Test

The reliability estimate of speaking performance test uses the inter-rater reliability. Here, the test scoring is done by two raters, the reliability and of their evaluations can be checked by comparing the scores they give for the same students based on the speaking assessment rubric. (See Appendix 2)

<sup>24</sup> M Soenardi Djiwandono, *Tes Bahasa Dalam Pengajaran*, (Bandung: ITB Bandung, 1996), 98

From the information of the two raters of speaking performance test, the researcher finds the time allocation is 3 to 5 minutes to retell the story. Then the score of two raters is computed by Pearson's product moment formula.

**Table 3.4**  
**The Reliability of Speaking Performance Test**

		Rater 1	Rater 2
Score Rater 1	Pearson Correlation	1	.885**
	Sig. (2-tailed)		.000
	N	20	20
Score Rater 2	Pearson Correlation	.885**	1
	Sig. (2-tailed)	.000	
	N	20	20

\*\* . Correlation is significant at the 0.01 level (2-tailed).

A complete lack of reliability is indicated by coefficient of 0.00 and perfect positive reliability is indicated by coefficient 1.00. Based on the criteria, the reliability of the speaking performance test is 0.885. So the test is reliable.

b. Validity

Validity is concerned with the extent to which test result serves their intended use. It means that test used in this study is expected to be able to measure the students' achievement well. There are many types of validity, they are content validity, predictive validity, concurrent validity and construct validity. A kind of validity that the researcher used in this study is content validity. Content validity is concerned with what goes into the test. The degree of content validity in



a test related to how well the test measures the subject matter content studied.

The effectiveness of the test items can be measured from two points; they are item difficulty and item discriminating power. According to Haris, items are said to be statistically satisfactory if they meet two requirements, they are suitable level of difficulty and the discriminate between high and low students.<sup>25</sup>

#### 1) The Index of Difficulty

The index of difficulty (FV) is generally expressing the fraction (or percentage) of the students who answered the item correctly. It is calculated by using the formula:

$$FV: R/N$$

In which:

FV : facility value (index of difficulty)

R : the number of correct answers

N : the total number of students taking the test

#### 2) The Index of Discrimination

The discrimination index measures how well a test item identifies differences in achievement level of students. To estimate the item discriminating power is by

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<sup>25</sup> David P. Haris, *Testing English As Second Language*, 103.

comparing the number of students in the upper and lower group who answered the item correctly, the formula is:

$$DP: \frac{D - U}{N}$$

In which:

D : the index of the discriminating

U : the number of students in the upper level group who answered the item correctly

L : the number of students in the low level group who answered the item correctly

N : number of students in each of the group

The measure of index difficulty and index discrimination can be seen on the table below.

**Table 3.5**  
**Item Analysis of Vocabulary Achievement**

Items	D	Deduction	P	Criteria
1	0.1	Revised	0.75	Easy
2	0.3	Used	0.7	Fair
3	0.1	Revised	0.7	Fair
4	0.6	Used	0.25	Difficult
5	0	Deleted	0.75	Easy
6	0.3	Used	0.6	Fair
7	0.3	Used	0.7	Fair
8	0.4	Used	0.4	Fair
9	0.3	Used	0.8	Easy
10	0	Deleted	0.8	Easy
11	0.3	Used	0.65	Fair
12	0.4	Used	0.4	Fair
13	0.3	Used	0.7	Fair
14	0.3	Used	0.7	Fair
15	0.3	Used	0.55	Fair
16	0.1	Revised	0.75	Easy
17	0.1	Revised	0.75	Easy
18	0.3	Used	0.4	Fair
19	0.1	Revised	0.75	Easy

<b>20</b>	<b>0</b>	<b>Deleted</b>	<b>0.9</b>	<b>Easy</b>
21	0.3	Used	0.7	Fair
22	0.5	Used	0.55	Fair
23	0.3	Used	0.55	Fair
24	0.4	Used	0.7	Fair
25	0	Deleted	0.85	Easy
26	0.3	Used	0.75	Fair
27	0.3	Used	0.7	Fair
<b>28</b>	<b>0</b>	<b>Deleted</b>	<b>0.95</b>	<b>Easy</b>
29	0.1	Revised	0.75	Easy
30	0.3	Used	0.7	Fair

Items that show a level difficulty between 0,30 until 0,70 are fairly easy items.<sup>26</sup> Based on the level of difficulty, the items above are perfect because the results are between 0,30 and 0,70. So, they can be used in the future test. But based on the discrimination index, the items that had to deleted are items 5, 10, 15, 20, 28 and items had to revise are items 1, 3, 16, 17,19, 29.

#### **D. Data Collection**

In this research, the researcher employs quantitative approach, the technique is used to get the data related to the student's vocabulary achievement and student's speaking performance. To collect the data, the researcher requires several days. The data are collected by means of test. Here the researcher uses one instrument that is test. The researcher conducted two tests, vocabulary test and speaking test.

The researcher conducts the 'try out test' before testing the real subject of the study. After the test is valid and reliable, the researcher will

<sup>26</sup> Anas Sudiono. *Pengantar Evaluasi Pendidikan*, 372.

distributes vocabulary test and asks the students to answer 25 questions in 30 minutes. The students should submit the answer sheet after the time is done. The data is obtained from the student's score. Each question gets 4 point, so the maximal score is 100.

The second test is speaking test. The test is given in different time, so the researcher distributed the story after the vocabulary test has been finished. The researcher uses story-telling to measure students' speaking performance. Each student is given 3 to 5 minutes to retell the story in their own words. The students' performance is recorded to require the second rater objectively score the student's speaking performance.

#### **E. Data Analysis**

The result of data analysis is used to check hypothesis whether  $H_0$  is rejected and  $H_a$  is received or vice versa. The hypothesis is as follow:

$H_0$  : There is no correlation between vocabulary achievement and speaking performance.

$H_a$  : There is correlation between vocabulary achievement and speaking performance.

To determine the correlation between one variable and another, there are standards of coefficient correlation. According to Latief, the correlation coefficient is presented with  $r$  and is expressed as a number between -1 and +1. When  $r$  is -1, the variables have perfect negative correlation, when  $r$  is

+1, the variables have perfect correlation, and when  $r$  is 0, the variables have no correlation.<sup>27</sup>

The researcher calculates and process or analyze the so-far-arranged data by using statistic. The collected data is calculated in **IBM\*SPSS\* software** ver. 23.00. The researcher uses *Pearson Product Moment Correlation* to know whether or not there is a correlation between two variables if the data distribution is normal. If the data distribution is not normal, the data processing method which is used is *Kendall's tau*.<sup>28</sup> After the calculation, there is a chart of coefficient correlation to mark whether the correlation is weak or strong.

**Table 3.6**  
**Standard of Correlation Coefficient<sup>29</sup>**

No	CC	Interpretation
1	$CC = 0$	There is 0 correlation
2	$0 < CC \leq 0.20$	The correlation is very low
3	$0.20 < CC \leq 0.40$	The correlation is low
4	$0.40 < CC \leq 0.60$	The correlation is average
5	$0.60 < CC \leq 0.80$	The correlation is high
6	$0.80 < CC \leq 1.00$	The correlation is very high
7	$CC = 1$	The correlation is excellent

Diagram above is to know the correlation between one variable to another

<sup>27</sup> Mohammad Adnan Latief, *Research Methods On language Learning An Introduction*, (Malang: UM PRESS, 2014), 113.

<sup>28</sup> Singgih Santosa, *Aplikasi SPSS Statistik Non Parametrik*, (Jakarta: PT Elex Media Komputindo, 2012), 210.

<sup>29</sup> Suhsarsimi Arikunto, *Prosedur Penelitian* (Jakarta: PT ANEKA CIPTA, 1996), 260.