

CHAPTER III

RESEARCH METHODOLOGY

A. Method of the Research

The design of this research is experimental research. According to Gay and Airasian experimental research is the only type of the research that can test hypothesis to establish cause and effect relationship.¹ Meanwhile, Creswell states that in experimental research is testing an idea (practice or procedure) to determine whether it influences an outcome or dependent variable.² Meanwhile, the method that was used in this research was quasi-experimental research that was pre-test and post-test non equivalent control group design. Quasi-experimental design consisted of experiment group and control group. The researcher assigned intact groups the experimental and control treatments. In this research, there were two variables. The first was independent variable symbolized by “X” and the second was dependent variable symbolized by “Y”. The use of Paraphrase Passport strategy was as X variable and students’ listening ability as Y variable.

In conducting the research, there were two classes involved. The first was experimental class and the second was control class. The experimental class means the students who are given the treatment by using Paraphrase Passport strategy, while the control class means without given Paraphrase Passport strategy.

¹ L.R. Gay and Peter Airasian, *Educational Research Competencies for Analysis and Application*, Sixth Edition, (New Jersey: Prentice Hall Inc, 2000), p. 367

² John W Creswell, *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research Ed 3* (New Jersey: Education International, 2008), p. 299

The quasi experimental design: the pretest-post-test, non equivalent group design can be presented as follows:

Table III.1
The Research Design

Group	Pre-Test	Treatment	Post-Test
X ₁	○ ₁		○ ₂
X ₂	○ ₃		○ ₄

Where:

X₁ : Experimental group

X₂ : Control group

T₁ : Pre-test for experimental and control group

○₁ : Receiving particular treatment

○₃ : No treatment

T₂ : Post-test for experimental and control group

T : Treatment

B. Time and Location of the Research

This research was conducted at the second year of Vocational High School 1 Dumai. It is located at Cut Nyak Dien street in 2013-2014 of academic year and the data were collected from August to September 2013.

C. The Subject and Object of the Research

The subject of this research was the second year students at Vocational High School 1 Dumai. Then, the object of the research was paraphrase passport strategy and students' listening ability.

D. The Population and Sample Research

The population of this research was the second year students of Vocational High School 1 Dumai. They consisted of 9 classes. The total number of population was 298 students. The population of this research was the second year students at Vocational High School 1 Dumai. There were 9 classes which consisted of 2 classes for AK, 2 classes for AP, 2 classes for PN, 1 classes for TKJ, 1 classes for UPW, 2 classes for BB. The total numbers of the second year students was 298 students. The population above was large enough to be all taken as sample of the research. Based on the limitation of the research, the writer took only 2 classes after doing simple random sampling. According to Gay, Random Sampling is the process of selecting a sample in such a way that all individuals in the defined population have an equal and independent chance of being selected for the sample. Every individual has the same probability of being selected and selection of one individual in no way affects selection of another individual.³

Therefore, the researcher took two classes to were represent the population having similar characteristics. The similar characteristics intended for the both of classes are: the students were taught by the same teacher of English, the students

³ L. R. Gay and Peter Airasian, *Op Cit.*, p.123

had the same level, and the students had the same material about learning of listening. Here, the researcher took class XI AK 1 and XI AK 2 as sample.

The total population of the second year students at Vocational High School 1 Dumai 2012-2013:

Table III.2
The Population of The Second Year
Students of Vocational High School 1 Dumai

No	Classes	Population	Sample
1	XI AK 1	36 Students	36 Students
2	XI AK 2	36 Students	36 Students
3	XI AP 1	35 Students	-----
4	XI AP 2	33 Students	-----
5	XI PN 1	33 Students	-----
6	XI PN 2	31 Students	-----
7	XI TKJ	32 Students	-----
8	XI UPW	32 Students	-----
9	XI BB	30 Students	-----
Total		298 Students	72 Students

In this occasion, the writer took a sample by using simple random sampling. The writer name card based on every second year classes at Vocational High School 1 Dumai. After mixing these cards, the writer took two cards randomly as a sample of this research. They were XI AK 1 as an experimental class and XI AK 2 as a control class.

Table III.3
Sample of the Research

No	Class	Male	Female	Total Number of Student
1	XI AK. 1	7	29	36
2	XI AK. 2	6	30	36
Total		13	59	72

E. The Technique of Collecting Data

In collecting the data, the writer used test. Written test was used to collect the data about students' listening ability. Written test was divided into two sections:

a. Pre-Test

Pre-test was used to collect the data about students' listening ability before they were taught by using paraphrase passport strategy. It was given to both experimental and control classes. In this test, the writer used multiple choice type and the questions were based on the indicators of listening ability.

b. Post-Test

Post-test was used to collect the data about students' listening ability after they were taught by using paraphrase passport strategy. It was given to both experimental and control classes. In this test, the writer used multiple

choice type and the questions were based on the indicators of listening ability.

In order to get the information about the effect of paraphrase passport strategy, the test was arranged based on the indicators of listening ability that had been stated in operational concept. The test was intended to obtain students' listening ability of the second year at Vocational High School 1 Dumai. Before the test was conducted, the researcher gave try out from another class besides experimental class and control class in order to prove whether the test is valid or not and the test is reliable or not. The test was composed 25 items, and each item was given score 4. The final score was analyzed by using the following formula⁴:

$$\text{Final score} = \frac{\text{Total Correct Answer}}{\text{Total Questioner}} \times 100$$

1. Validity

A test is valid if it measures what it purpose to measure. Before giving the test, the researcher had given test to other respondents in one population in order to know whether test was valid or not.

Heaton describes validity of a test as follows:

The validity of a test is the extent to which it measures what it is supposed to measure and nothing else The test must aim to provide a true measure of the particular skill which it is intended to measure: to the extent that it measures external knowledge and other skills at the same time, it will not be a valid test.⁵

⁴ Anas Sudijono. *Pengantar Statistik Pendidikan*. (Jakarta: PT. Rajafindo Persada, 2008).
p. 32

⁵ *Ibid*, p. 159

In this research, the researcher used multiple choices as the instrument of the test. In giving the test for respondents, the test should be valid. The research instrument should be qualified. The instrument can be valid if the instrument is measuring what the researcher wants to find out. Scarvia B. Anderson *et.al* in Arikunto claims the statement “a test is valid if the measure what is purposes to measure.”⁶

The researcher did try out in August at other class but had the same level. The purpose of try out was to obtain validity and reliability to the test. It was determined by finding the difficulty level of each item.

To find validity of the test, the writer used correlation product moment. The formula is as follows:

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

Where:

r_{xy} = correlation product moment x dan y

$\sum xy$ = total x dan y

$\sum x^2$ = x quadrant

$\sum y^2$ = y quadrant

N = the number of student

$$r_{xy} = \frac{510}{1095 (1125)}$$

$$r_{xy} = \frac{510}{\sqrt{1231875}}$$

⁶ Arikunto, Suharsimi. *Dasar-dasar Evaluasi Pendidikan*, (Bumi Aksara: Jakarta), p. 65

$$r_{xy} = \frac{510}{1109.89} = 0.45$$

According to Arikunto the range of validity are as follows:⁷

Table III. 4
The Classification of Validity Range

No	Classification	Score
1	Excellent	0.800-1.00
2	Good	0.600-0.800
3	Fair	0.400-0.600
4	Poor	0.200-0.400
5	Very Poor	0.00-0.200

Based on the range of validity above, if the validity test is 0.45 it means that the validity of the test is **FAIR**.

III.5

Demonstrates attentive listening

Variable	Demonstrates attentive listening					N
Item no	1	6	11	16	21	25
Total of Correct item	22	22	23	19	23	
P	0.61	0.61	0.64	0.53	0.64	

Based on the table above, the item number for responding the topic in oral functional descriptive text was 1, 6, 11, 16, and 21. It showed that the proportion

⁷ *Ibid*, p.75

of correct answer number 1 was 0.61, and the proportion of correct answer number 6 was 0.61 too, and the proportion of correct answer number 11 was 0.64, and the proportion of correct answer number 16 was 0.53, and the proportion of correct answer number 21 was 0.64. Thus, based on the standard difficulty of “P” must be in the middle of 0.30 to 0.70. So, the item of difficulties for demonstrating attentive listening was accepted.

Table III. 6
Listens while other present news and asks relevant questions

Variable	Listens while other present news and asks relevant questions					N
Item no	2	7	12	17	22	25
Total of Correct item	21	18	20	20	21	
P	0.58	0.5	0.56	0.56	0.58	

Based on the table above, the item number for responding the information in oral functional descriptive text was 2, 7, 12, 17, and 22. It showed that the proportion of correct answer number 2 was 0.58, and the proportion of correct answer number 7 was 0.5, and the proportion of correct answer number 12 was 0.56, and the proportion of correct answer number 17 was 0.56 too, and the proportion of correct answer number 22 was 0.58. Thus, based on of standard difficulty “P” must be in the middle of 0.30 to 0.70. So, the item of difficulties for listening while other present news and asking relevant questions was accepted.

Table III.7
Listens and follows one-step instructions

Variable	Listens and follows one-step instructions					N
Item no	3	8	13	18	23	25
Total of Correct item	22	22	18	21	21	
P	0.61	0.61	0.5	0.58	0.58	

Based on the table above, the item number for identifying the communicative purpose of descriptive text was 3, 8, 13, 18, and 23. It showed that the proportion of correct answer number 3 was 0.56, and the proportion of correct answer number 8 was 0.52, and the proportion of correct answer number 12 was 0.68, and the proportion of correct answer number 17 was 0.52, and the proportion of correct answer number 22 was 0.64. The total correct answer of the topic was 0.58. Then, based on of standard difficulty “P” must be in the middle of 0.30 to 0.70. So, the item of difficulties for listening and following one-step instructions was accepted.

Table III.8
Repeats sounds in words in correct sequence

Variable	Repeats sounds in words in correct sequence					N
Item no	4	9	14	19	24	25
Total of Correct item	20	21	19	20	22	
P	0.56	0.58	0.53	0.56	0.61	

Based on the table above, the item number for identifying the language features of functional descriptive text was 4, 9, 14, 19, and 24. It showed that the proportion of correct answer number 4 was 0.56, and the proportion of correct answer number 9 was 0.58, and the proportion of correct answer number 14 was 0.53, and the proportion of correct answer number 19 was 0.56, and the proportion of correct answer number 24 was 0.61. Thus, based on of standard difficulty “P” must be in the middle of 0.30 to 0.70. So, the item of difficulties for repeating sounds in words in correct sequence was accepted.

Table III.9**Recognises and says words that rhyme**

Variable	Recognises and says words that rhyme					N
Item no	5	10	15	20	25	25
Total of Correct item	17	20	23	18	22	
P	0.47	0.56	0.64	0.5	0.61	

Based on the table above, the item number for identifying the language features of descriptive text was 5, 10, 15, 20, and 25. It showed that the proportion of correct answer number 5 was 0.47, and the proportion of correct answer number 10 was 0.56, and the proportion of correct answer number 15 was 0.64, and the proportion of correct answer number 20 was 0.5, and the proportion of correct answer number 25 was 0.61. Thus, based on of standard difficulty “P” must be in the middle of 0.30 to 0.70. So, the item of difficulties for recognising and saying words that rhyme was accepted.

2. Reliability

A test must first be reliable as measuring instrument. Reliability is a necessary characteristic of any good test. Reliability is used to know the consistency of the test. Reliability refers to whether a test measures something well.⁸ According to Weir, a reliable test can be depended on producing similar results in repeated uses.⁹ It focuses on how many items were given to respondents. Reliability is related to

⁸ Jeremy Miles and Philip Banyard, *Understanding and Using Statistics in Psychology*, New York: Pearson Education, 2007, p. 270

⁹ Cyril J. Weir, *Language Testing and Validation*, New York: Palgrave Macmillan, 2005, p. 22

validity. Even validity is more important, but reliability supports validity¹⁰. There are several formulas that can be used to measure the reliability of the test. In this research, the writer used Kuder Richardson (K-R 20) formula to calculate the reliability of the test. The formula can be seen below:¹¹

$$r_{ii} = \left(\frac{n}{n-1} \right) \left(\frac{S^2 - \sum pq}{S^2} \right)$$

Where:

r_{ii} = reliability

n = total items

S = standard deviation

p = Proportion of correct item

q = Proportion of wrong item ($q = 1-p$)

$\sum pq$ = total of $p \cdot q$

$$X = \frac{\sum Xt}{N} = \frac{532}{36} = 14.7$$

$$\begin{aligned} S^2 &= \frac{\sum x^2}{N} - x^2 = \frac{1095}{36} - 14.7^2 \\ &= \frac{1095}{36} - 216.09 \\ &= 842.91 \end{aligned}$$

$$r_{11} = \frac{n}{n-1} \frac{S^2 - \sum pq}{S^2}$$

¹⁰ Suharsimi Arikunto, *Dasar-dasar Evaluasi Pendidikan*, Jakarta: Bumi Aksara, 2011, p.

¹¹ *Ibid.*, p. 97 - 102

$$\begin{aligned}
 r_{11} &= \frac{36}{36-1} \frac{842.91^2 - 4}{842.91^2} \\
 &= \frac{36}{35} \frac{710497.26 - 4}{710497.26} \\
 &= \frac{36}{35} \frac{710493.26}{710497.26} \\
 &= 1.028 * 0.99 \\
 &= 1.018
 \end{aligned}$$

To know the test is reliable or not, the value of r_{11} must be compared with r product moment. The value of r_{11} must be higher than r table. From the calculation above the value of r_{11} is 1.018. Then the r_t at 5% grade of significance is 0.325. While r_t at 1% grade significance is 0.418. So, it can be concluded that $0.325 < 1.018 > 0.418$. In other words, the instrument is reliable because the value of r_{11} is higher than r_t .

F. The Technique of Data Analysis

In this research, the writer statistically analyzed the data by using SPSS 16.0 version. First to analyze the data of students' listening ability by using paraphrase passport strategy, the researcher will give the criteria of assessment below:¹²

¹² Suharsimi Arikunto, *Dasar-dasar Evaluasi Pendidikan*, Jakarta: Bumi Aksara, 2009, p. 245

Table III.10
Criteria of Assessment

Criteria	Score
Very Good	80-100
Good	66-79
Enough	56-65
Less	40-55
Fail	30-39

Second, the writer used students' post test scores of the experimental and the control group as the data of the research. The writer analyzed the data by using t-test to know whether the result of the research was statistically significant.¹³ The data were analyzed by using SPSS 16.0 version. After computing t-test, it is necessary to obtain the degree of freedom that is used to determine whether the t-score is significant or not.

If the writer has consulted the t-obtained value with t-table by using degree of freedom, the writer can conclude that if $t_0 < t\text{-table}$, H_0 is accepted. It means that there is no significant effect of using paraphrase passport strategy toward students' listening ability. If $t_0 > t\text{-table}$, H_a is accepted. It means that there is a significant effect of using paraphrase passport strategy toward students' listening ability.

¹³ Hartono. *Statistik untuk Pendidikan*, Yogyakarta, Pustaka Pelajar, 2009, p. 208