

## CHAPTER III

### RESEARCH METHODOLOGY

#### A. Research Design

This research was a comparative research which was intended to find out the difference between individual and collaborative writing narrative paragraphs achievement. According to Frankle, comparative research is an effort which decides the differences<sup>54</sup>, comparative tends to emphasize the differences or contrast rather than the similarities. Besides, McMillan also argues that comparative research aims at attempting the differences between one variable to another one by simply examining<sup>55</sup>. The statements stated above clearly explain that comparative study is to emphasize the difference. According to Gay, comparative research has two variables (independent and dependent variable). Independent variable will be divided into two different groups which will be compared on the dependent variable<sup>56</sup>. In this research, they were individual and collaborative writing that were compared on writing narrative paragraph achievement. So that, In this case, the researcher tried to find out whether there is or no a significant difference between individual and collaborative writing on narrative paragraphs achievement of the second year students at MAN 1 Pekanbaru.

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<sup>54</sup> Jack R. Fraenkel, and Norman E. Wallen. *How to Design and Evaluate Research in Education*, 2nd edition, (Singapore: McGraw-Hill, Inc 1993), 317.

<sup>55</sup> James H. McMillan, and Sally Schumacher. *Research in Education: Evidence-Based Inquiry*, 6th edition, (Boston: Pearson Education, Inc 2006), 219.

<sup>56</sup> Gay, L.R., and Peter Airasian. *Educational Research: Competencies for Analysis and Application*, 6<sup>th</sup> edition. (New Jersey: Prentice-Hall, Inc. 2000), 353.

## B. Subject and Objective of the Research

Subject of this research was the second year students of MAN 1 Pekanbaru in 2013/2014 academic year. Thus, object of this research was the comparison achievements of individual writing and collaborative writing in writing narrative paragraph.

## C. Location and Time of the Research

This research took place at MAN 1 Pekanbaru. This research was conducted on August 2013.

## D. Population and Sample

The population of this research was taken homogenously. The target population of this research was the second year natural science students at MAN 1 Pekanbaru. They consisted of six classes. They can be shown as follows:

**Table III.1**

The Population of the second year natural science students at MAN 1 Pekanbaru

NO	CLASS	MEN	WOMEN	STUDENTS
1	XI IPA C	9	18	27
2	XI IPA C-1	5	20	25
3	XI IPA 1	7	20	27
4	XI IPA 2	16	12	28
5	XI IPA 3	14	14	28
6	XI IPA 4	14	14	28
Total	6 classes	65	98	163

The sample of this research was 54 students found in 2 classes randomized from eight classes. This was taken based on the cluster random sampling. They were XI IPA C and XI IPA 1.

## **E. Technique of Collecting Data**

In order to get some data that were needed to support this research, the researcher applied the technique of collecting data, writing test. The test was about writing English which was appropriate with their in-use curriculum. This instrument was used to collect the data in order to find out a difference between individual and collaborative writing on narrative paragraphs achievement of the second year students at MAN 1 Pekanbaru. The researcher used writing test by giving some topics of narrative paragraph.

## **F. Validity and Reliability of the Test**

### **1. Validity of the Test**

A test is a tool to measure the ability, knowledge, achievement or performance of a person. It is pertaining to the statement stated by Brown that a test is a method to measure a person's ability, knowledge, or performance in a given domain<sup>57</sup>. The more explanation explained also by Brown that one of criteria for testing a test is validity. A valid test should be appropriate, meaningful, and useful in terms of the purpose of the

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<sup>57</sup> Brown, H. Douglas. *Language Assesment: Principles and Classroom Practice*. (New York: Pearson Education 2004), 3.

assessment. The validity has three kinds, they are content validity, criterion validity, and construct validity<sup>58</sup>.

In this research, researcher used two kinds of validity, the content and the construct validity, to prove the validity of the test. In the first of kinds, the researcher used the materials tested based on the materials that they learned. It was about narrative text. It dealt with the School Based Curriculum (KTSP) applied in students' handbooks. One of which was "Interlanguage: English for Senior High School Students XI"<sup>59</sup>. It was clear to explain that the tests taken for this resresearch were valid.

For more clear evidence, the researcher also provided the construct validity to measure whether tests taken for this research are or no valid. In measuring the validity of the tests, the researcher used the SPSS 16 application to find the validity of the tests. The steps are as follows:

- a. Open SPSS 16,
- b. Open new file
- c. Enter the data based on the group of variable. In the first collumn, fill the all of scores from first rater and in the second collumn, fill the all of scores from second rater,
- d. Press menu analyze, then press correlate, then press Bivariate
- e. Move Scores collumns to variable, then press Ok

Then the result will be shown. Here was the output table:

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<sup>58</sup> Gay, L.R., and Peter Airasian. Op. Cit., 163-167.

<sup>59</sup> Priyana, Joko., Riandi, Anita P. Mumpuni. *Interlanguage: English for Senior High School Students XI*. (Jakarta: Pusat Perbukuan, Departemen Pendidikan Nasional 2008)

**Table III.2**

The result of the validity test

		Rater1	Rater2
Rater1	Pearson Correlation	1	.593**
	Sig. (2-tailed)		.000
	N	54	54
Rater2	Pearson Correlation	.593**	1
	Sig. (2-tailed)	.000	
	N	54	54

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

Based on the table above, it was clear that the validity value was 0.593. It was compared with the r-table in significance level of 1% (0.348), the comparison between r-table and r-observed can be written as follows:

$$0.348 < 0.593$$

It shows that the score of r-observed was higher than the score of r-table, it means that the test was valid.

## 2. Reliability of the Test

Reliability of the test can be measured from the consistency and dependability of the test. Relation to the statement stated by Brown, he stated that a reliable test is consistent and dependable. Of course, the consistency and dependability of the test can be measured through the scores given, it is one of the ways provided by Brown. There are some factors influencing the reliability of the test result stated by brown, they are: student-

related reliability, rater reliability (Inter-rater reliability and Intra –rater reliability), test administration reliability, and test reliability.

In this part, the researcher tried to measure the reliability of the test through the rater reliability, specifically in inter-rater reliability. The researcher chose inter-rater reliability because the scores gotten from the test is evaluated by two raters, of course, the scores given were different. So that, the researcher wanted to find out the reliable of the test through the scores scored by two raters. The researcher used the SPSS 16 application to find the reliability of the test based on Alpha Cronbach technique. The steps are as follows:

- a. Open SPSS 16,
- b. Open new file,
- c. Enter the data based on the group of variable. In the first collumn, fill the all of scores from first rater and in the second collumn, fill the all of scores from second rater,
- d. Press menu *analyze*, then press *scale*, then press *Reliability Analysis*
- e. Move *Scores collumns* to *items*, then press *Ok*

Then the result will be shown. Here was the output table:

**Table III.3**

The result of the reliability test

Reliability Statistics	
Cronbach's Alpha	N of Items
.695	2

Based on the previous table, it was clear that the reliability value was 0.695.

Based on Siregar's writing, the tests will be able to be called as the reliability tests if the score of  $r_{11}$  is higher than 0.6<sup>60</sup>. The comparison between  $r_{11}$  and 0.6 can be written as follows:

$$0.695 < 0.6$$

It shows that the score of  $r_{11}$  was higher than 0.6, it means that the test was reliable.

## G. Technique of Analysis Data

The collected data were analyzed by a statistical method. The Researcher used the following formula:

$$t_o = \frac{M1 - M2}{\frac{SD1}{\sqrt{N-1}}^2 + \frac{SD2}{\sqrt{N-1}}^2}$$

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<sup>60</sup> Siregar, Syofian. *Statistika Parametrik untuk Penelitian Kuantitatif: Dilengkapi dengan Perhitungan Manual dan Aplikasi SPSS Versi 17*, (Jakarta: Bumi Aksara 2013), 90.

Where:

to = the value of t-observed

M1 = Mean of variable 1

M2 = Mean of variable 2

SD1 = Standard Deviation of variable 1

SD2 = Standard Deviation of variable 2

N = Number of Students<sup>64</sup>

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<sup>64</sup> Hartono. *Statistik untuk penelitian*. (Yogyakarta: Pustaka Pelajar 2012), 208.

