

## **CHAPTER III**

### **RESEARCH METHOD**

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

In terms of the data analysis, this research is used inferential quantitative approach since it tried to explore and then to analyze the result of the study that is two different testing techniques applied in population sample, and then it was proved quantitative. Quantitative research is essentially collecting numerical data to explain the phenomenon (Muijs, 2004, p.2). This research used comparative research. Comparative study was a research methodology in the social sciences that aimed to make comparisons across different, this comparative study about two testing techniques in reading comprehension and to found what the difference of two testing technique in reading comprehension which the same test from cloze procedure but one of the test in applied rarely for the students.

#### **B. Research Setting**

The location of this research was at Sixth Semester students STKIP-PGRI Banjarmasin. Jl. Sultan Adam Komplek Haji Iyus Blok A No.18 RT.23 District Sungai Jingah, Sub district Banjarmasin Utara, Banjarmasin. This study had been conducted about two months.

### **C. Population and Sample**

Bungin (2005: 99) says that research population is the entire research object that can be a resource of research data. The population should be limited by the purpose and the background problem of the research. Therefore, the researcher takes the students' STKIP-PGRI Banjarmasin as the population in this research. The total number at Sixth Semester students is 59 students that were divided into two classes, morning class and afternoon class.

The total number of the population was fifty nine students. Because of the population were less than one hundred students, so the researcher takes all students as a population of the research. (Suharsimi Arikunto 2008: 107)

### **D. Research Instruments**

Research instruments are simply devices for obtaining information relevant to the research project (Wilkinson and Birmingham, 2003: 3). The research instruments were two kinds of testing techniques for reading comprehension. They were Cloze Tests and C-Tests that were to measure the students' reading comprehension consist of 50 deletion word. The final score was calculated by students' correct answer  $\times$  2.

### **E. Technique Data Collection**

The data needed in this research are students' reading comprehension score. The data were collected by giving tests. Two types of reading comprehension test were Cloze Tests and C-Tests. As a result, there were two kinds of data in this

research. The data were divided into two groups: students' reading comprehension tested by using Cloze Tests and students' reading comprehension tested by using C-Test.

Each class had two meetings to finish both of the tests, so one meeting for Cloze Tests and one meeting for C-Tests. For each of the test, the students had 100 minutes (2 SKS per meeting). Those were applied in two classes.

## F. Data Analysis

This study compares the results of the students' reading comprehension test by using both of the tests. In other words, those comparative to analyze the first and the second of this research, the researcher used two formulations to answer research questions were using inferential analyses, and also hypotheses.

### 1. Inferential Analysis

Inferential analysis is aimed at testing the research questions and hypotheses. The tests are normality and homogeneity tests. Those tests to analyze whether the hypothesis comparative study using parametric or non parametric research, based on table 3.1 the researcher used research application (Two Dependent Sample) that the two tests taken from the same respondent.

Table 3.1 Tests Parametric and Non Parametric

APPLICATION	TEST PARAMETRIC	TEST NON PARAMETRIC
Dua sampel saling berhubungan (Two Dependent Sample)	T test	Wilcoxon Signed-Rank
	Z test	Sign Test
		Mc Nemar Test

**Table 3.1 (continued)**

APPLICATION	TEST PARAMETRIC	TEST NON PARAMETRIC
Dua sampel tidak berhubungan (Two Independent Sample)	T test Z test	Mann-Whitney U test Moses Extreme Reaction Chi Square test Kolmogorov-Smirnov test Walt-Wolfowitz runs
Beberapa sampel berhubungan (Several Dependent Samples)		Friedman test Kendall W Test Cochran's Q
Beberapa sampel tidak berhubungan (Several Independent Samples)	Anova Test (F test)	Kruskal – Wallis test Chi Square test Median test

a) Normality

Normality test is testing intended to make sure this research uses parametric or nonparametric research. Statistic parametric need a lot of assumption, main principal assumption is the data will analyze must have normal distribution (Sugiyono: 150). To know the Normality tests, the researcher used Kolmogorov-Smirnov test SPSS 23 for computing the data.

This test to know the data of this research whether normal distribution or not, in this test of normality the researcher make two assumptions about the data:

1. If that the data normal distribution the researcher uses parametric research
2. If that the data abnormal distribution the researcher uses non parametric research

After computing the data by Kolmogorov-Smirnov with the One Way Anova SPSS 23 the researcher found the distribution data was abnormal and the table can be seen in appendix. For more explanation can be seen on chapter IV.

b) Homogeneity

Homogeneity testing is intended to make sure that the collected manipulation data in analysis is truly taken from a population which is different from each other and it is second assumption for researcher to use parametric or non parametric research. Especially in a study which is predictive, the model which is used must be appropriate with the composition and its distribution (Sujianto: 112). To know the Homogeneity, the researcher used Levene test by computing the data with the One Way Anova SPSS 23. The result was not homogenous and the table can be seen in appendix.

2. Hypotheses

Alderson (2000: 86) states there are factors affecting the difficulty of reading test items. One of them is different type of question. Pearson and Johnson (1978) in Alderson (2000) identify that different types of questions

and suggest that they might vary in their difficulty. Based on those theories, two hypotheses were used, two hypotheses as follows:

- Alternative Hypothesis ( $H_a$ )

There is a significant difference between cloze test and C-test for testing reading comprehension on the sixth semester students in STKIP PGRI Banjarmasin.

- Null Hypothesis ( $H_0$ )

There is no any significant difference between cloze test and C-test for testing reading comprehension on the sixth semester students in STKIP PGRI Banjarmasin.

Based on the hypotheses of the research, the researcher uses two formulas to answer the hypotheses according to table 3.1.

- a) Wilcoxon signed-rank

The researcher used Wilcoxon signed-rank after the researcher got the data from normality and homogeneity tests whereas the data was abnormal and the researcher must used Wilcoxon signed-rank test (non parametric) because the assumption of parametric research was not completed.

The Wilcoxon signed-rank sums the positive rank, as follows:

$$W = \sum_{i=1}^{n'} R_i^{(+)}$$

Explanation:

W: The value of “W” after sum W-test formula

$n'$ : Total rank (negative and positive)

$R_i$ : Total of positive rank

There are some steps for computing the Wilcoxon signed-rank test statistic

W:

1. For each item in a sample of  $n$  items, compute a difference score, between the two paired values.
2. Mark the + and – signs and list the set of  $n$  absolute differences,  $[D_i]$ .
3. Ignore any absolute difference score of zero from further analysis, by set of  $n'$  none zero absolute difference scores, where  $n' \leq n$ . After you remove values with absolute difference scores of zero,  $n'$  becomes the actual sample size.
4. Assign ranks  $R_i$  from 1 to  $n'$  to each of the  $[D_i]$  such that the smallest absolute difference score gets rank 1 and the largest gets rank  $n'$ . If two or more  $[D_i]$  are equal, assign each of them the mean of the ranks they would have been assigned individually had ties in the data not occurred.
5. Reassign the symbol + or – to each of the  $n'$  ranks,  $R_i$ , depending on whether  $D_i$  was originally positive or negative.

6. Compute the Wilcoxon test statistic,  $W$ , as the sum of the positive ranks

Meanwhile, the researcher found that the data  $N > 20$  the data was not applied in Wilcoxon signed-rank table. The researcher uses Z-test for large sample data in order to get  $Z_{\text{value}}$  after calculating  $W_{\text{value}}$  for comparing the result by table Z.

b) Z-test

Z-test is the research to compare two or more sample population of the test and to know the significant different of the data. In this cases Z-test as follow after the researcher calculating W-test because the data more than 20 sample population.

Based on the explanations above those were as follows:

$$Z = \frac{W - \frac{n'(n'+1)}{4}}{\sqrt{\frac{n'(n'+1)(2n'+1)}{24}}}$$

Explanation :

Z: The value of “Z” by using Z-test formula

W: The value of “W” after sum W-test formula

$n'$ : Total rank (negative and positive)



- Determining the value of “Z” by using Z-test formula :
- If  $z < z_{table}$  = There is no any significant difference between cloze test and C-test for testing reading comprehension on the sixth semester students in STKIP PGRI Banjarmasin
- If  $z > z_{table}$  = There is a significant difference between cloze test and C-test for testing reading comprehension on the sixth semester students in STKIP PGRI Banjarmasin. (Sugiyono : 1997 p.150 )