

CHAPTER 3

RESEARCH METHODOLOGY

Method of the research will be discussed in this chapter. This chapter deals with research method, research design, variables, population and sample, research procedure, research instruments and technique in analyzing data.

3.1. Research method

Research method is a way to find out knowledge and solution of such problems which done systematically, logically and scientifically.

In this research entitles The Effectiveness of CSR (Collaborative Strategic Reading) as One Way in Improving Students' Reading Ability, the researcher chooses an experimental study as it is appropriate with the title of the research. It means that the researcher carries out some treatments to gain the objective of the research.

A quantitative research design conducted in this research aimed at testing the hypothesis of the research.

The study investigates the use of Collaborative Strategic Reading in Improving Students Reading Ability to the students in experimental group in order to know the effectiveness of the technique comparing to the students' in control group that is being treated in conventional technique.

3.2. Research Design

For this research the researcher uses quasi experimental design with cluster random sampling method, means that the writer takes two classes among the whole population and use the classes as experimental and control group. The research design is stated as follows:

Sample	Pre-Test	Treatment	Post-Test
Experimental Group	X1e	T	X2e
Control Group	X1c	O	X2c

3.3. Variables

There are two main types of variables involved in the research:

1. Dependent variable, that is the improvement of students' reading ability
2. Independent variable, that is the effectiveness of CSR in improving students' reading ability

3.4. Population and sample

3.4.1 Population

According to Fraenkel and Wallen (1990: 65) population is the group to which the result of the research is intended to apply.

Based on the statement above the population of the research will be the second year students of SMUN I Sumedang.

3.4.2 Sample

Sample is a group in research study on which information is obtained. Sample is smaller than population. For the sample, the writer chooses 2 classes of second year students. The number of the students is 32 students for each class.

3.5. Instruments

To get the data related to the problems of the research, the researcher uses 2 kinds of instruments in collecting the data. The instruments are:

1. Instruments for pre test and post test

- Pre test

The pre test was administered at the beginning of the course in order to find out the initial difference between the control and experimental group

- Post test

The posttest was carried out in order to check the differences between the two groups after the treatment.

2. Instruments for treatment

The instrument comprises the materials for teaching reading using Collaborative Strategic Reading or CSR. The writer uses 6 expository texts.

3.6. Research Procedure

In conducting the research, there are some steps that the researcher follows.

Those steps are:

- Administering try out test
- Administering pre test and post test for both classes
- Treatment
- Post test

3.7. Data Collection

In investigating the subject of the research, the researcher uses a set of pre test and posttest in which the students were asked to give the answer.

The pre test was conducted at the beginning of the lesson in order to find out the initial difference between the control and experimental groups.

The posttest was conducted in order to check the differences between the two groups after receiving the treatment. After the score has been calculated, the researcher analyzed the result from the two groups statistically.

3.8. Data Analysis

3.8.1 The Validity of the Test

Before pre test and posttest conducted the test should be tried out in terms of its validity and reliability (Brown, 1988).

Validity means the degree to which the test measured what is intended to measure.

The researcher uses content validity in testing the instrument. Hatch and Farhady (1982) state that content validity is the extent to which a test measures a representative sample of subject matter content.

The process of calculating the index validity is:

- Arranging Try Out test
- Determine the difficulty level of each item

$$P = \frac{B}{JS}$$

P : Difficulty level

B : The items could be answered

JS : Testee

After determining the difficulty level, we interpret the data based on difficulty criteria:

- 0,00 – 0,30 = difficult

- 0,30 – 0,70 = good

- 0,70 – 1,00 = easy

(Arikunto, 1987)

- Determine Discrimination level of each item

$$DP = \frac{WL - WH}{n}$$

L = number of the lower group which the answer is wrong

H = number of the upper group which the answer is wrong

N = 27% x N

- Determine the upper group and the lower group with calculating 27% of the testee.
- Calculating the index validity

$$Vi = \frac{(RH - RL)}{n}$$

RH = items can be answered by the higher group

RL = items can be answered by the lower group

N = 27 % x n

After calculating the index validity, we interpret the data using:

- 0,00 – 0,02 = bad
- 0,02 – 0,04 = enough
- 0,04 – 0,07 = good
- 0,07 < = very good

(Subino, 1976)

3.8.2. The Reliability of the Test

Reliability means the consistency of the score. The reliability of the score characteristically presented by means of a reliability of a coefficient or standard error of measurement.

To check the test reliability, the researcher uses: Pearson Product Moment

$$r_{xy} = \frac{N \cdot \Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{[N \times \Sigma x^2 - (\Sigma x)^2][N \times \Sigma y^2 - (\Sigma y)^2]}}$$

The data interpretation:

- 0,00 – 0,20 = unreliable
- 0,21 – 0,40 = low
- 0,41 – 0,70 = moderate
- 0,71 – 0,90 = high
- 0,91 – 1,00 = very high
- 0,80 – 1,00 = very high
- 0,60 – 0,80 = high
- 0,40 – 0,60 = enough
- 0,20 – 0,40 = low
- 0,00 – 0,20 = too low

3.8.3 The Design of Hypothesis Test

In the process of data gathering the writer uses score of pre test and posttest.

The pre test was conducted at the beginning of the lesson in order to find out the initial difference between the control and experimental groups.

The posttest was conducted in order to check the differences between the two groups after receiving the treatment.

T – test will be assigned to be use in this study to determine whether the experimental and control groups are equivalent.

There are some assumption underlying the t-test as follows:

1. The scores in each group are normally distributed
2. The variance for each score of the two groups are equal

Here are the following steps in using t- test:

1. Setting the hypothesis

Null hypothesis ($H_0: X_e = X_c$) and the alternatives hypothesis ($H_1: X_e > X_c$)

2. Setting the alpha level at 0.05 (one tailed)
3. Finding the number of the sample (N)
4. Finding the mean of each groups

$$\bar{X} = \frac{\sum x}{N}$$

$$X_c = \frac{\sum x}{N}$$

Note: \bar{X} = mean

$\sum x$ = sum of scores

N = the total number of observation

5. Finding the standard deviation for each groups by using

$$Se = \frac{\sqrt{\sum (X - \bar{X})^2}}{n-1}$$

$$Sc = \frac{\sqrt{\sum (X - \bar{X})^2}}{n-1}$$

6. Calculating standard error of differences between means by using:

$$S_{(X_e - X_c)} = \frac{\sqrt{(Se)^2 - (Sc)^2}}{n-1}$$

7. Finding T- value using the formula:

$$t_{obs} = \frac{(Xe - Xc)}{S_{(Xe-Xc)}}$$

8. Determining the degree of the formula using:

$$Df = n_1 + n_2 - 2$$

9. Determining t critical in the table t -- (0.05)df

10. Comparing t_{obs} and t_{crit} . If $t_{obs} < t_{crit}$ we should accept the null hypothesis and if $t_{obs} > t_{crit}$, we can reject the null hypothesis and we can accept the alternative hypothesis.

