Chapter III

Research Method

This chapter discusses the methodology of the research. It covers; research problems, design of the research, hypothesis, data collection, and data analysis of the research.

3.1 Research Problems

This research was aimed to find out the effectiveness of using TPR Storytelling in order to improve students' listening comprehension. The research question appeared in this research are:

a. Can the use of TPR Storytelling improve students' listening comprehension?

b. What are the advantages or disadvantages of using TPR Storytelling perceived by the teacher and students?

3.2 Design of the Research

In order to respond to the first research question, this research uses pre experimental design: one group pre test-post test. This technique only involves one class, so there is no control group used in this research. There are two variables in this study. They are independent (TPRS technique) and dependent variable (the student's listening achievement). The pre test was given in the beginning in order to find out the students' listening basic comprehension. And post test was given in order to find out the students' listening comprehension after the treatment is applied.

O1	X	O2
Pre test	treatment	post test

O1 : the result before treatment

O2 : the result after treatment

3.3 Hypothesis

This research uses null hypothesis. This means that if there was no difference between before and after treatment was done, the null hypothesis was accepted. In other words, the TPRS technique could not improve students' listening comprehension. But if there were some differences between before and after treatment was done, the null hypothesis was rejected. It means that TPRS could improve students' listening comprehension.

$$Ho: \mu \text{ pretest} = \mu \text{ posttest}$$

3.4 Population and sample

Population in this research was private a junior high school in Bandung. The sample of this research was 20 students of 2nd grade of the private junior high school. The second grade was taken because the material which is used in this research is learned in this grade. There was only one class involved in this study, the class obtained pre-test to measure the students' listening comprehension before the treatment was done and post-test to measure their capability after the treatment. The data collection was done at one of private junior high schools in

Bandung. In the first place, the data collection would be held in about 6 weeks but because of some limitations, it was only held in 4 weeks.

3.5 Data collection

Research questions were used as the basis for data collection of this research covered pre-test, post test, and interview. To answer the first research question, pre test, post test, and observation were used. Try out was conducted to measure the validity, reliability, difficulty index, and discrimination index of the instrument. Meanwhile, interview was conducted to answer the second research question i.e. What are the advantages or disadvantages of using TPR Storytelling perceived by the teacher and students?. The schedule for collecting data was presented in table 3.1. Elaboration of each instrument for data collection is given in the following sub parts of this section.

Table 3.1

Research schedule

Stages	Date	Events
1	22nd October 2012	Pre test
2	24th October 2012	Treatment 1
3	29th October 2012	Treatment 2
4	31st October 2012	Treatment 3 and teacher's interview
5	5th November 2012	Treatment 4
6	7th November 2012	Post test
7	12th November 2012	Students' Interview

Data collection covered;

3.5.1 Pre test

To respond the first research question "Can the use of TPR Storytelling improve students' listening comprehension?" Pre test was given in order to uncover the students' basic comprehension in listening, before they were treated by using TPRS.

3.5.2 Post test

Post test was conducted in the end of the research to respond to the first research question "Can the use of TPR Storytelling improve students' listening comprehension?" The post test of Listening comprehension test was given in order to find out the student's listening Comprehension after the treatment.

3.5.3 Interview

The interview was done both to the teacher and students in the end of the research. It was conducted in order to answer the second research question "What are advantages or disadvantages of using TPR Storytelling perceived by the teacher and students?" the interview was taken not only to focus on the teacher's point of view about this technique, but also to compare the teacher's answer and how student's response to it.

3.6 Data analysis

Main data of this research were collected through pre test, post test, and observation. To measure the validity, reliability, difficulty index, and discrimination index of the instrument, try out was conducted before the pre test.

Further, the research of data collection was analyzed. The analysis was conducted in the following steps: analyze pre test, compared the result of pre test and post test, analyze the observation, and analyze the interview. Moreover, the try out test was also analyzed to check the validity, reliability, difficulty index, and discrimination index of the instrument.

3.6.1 Try out test

The try out test was conducted in order to gain the validity, reliability test, difficulty index of each item, and discrimination index of each item. Therefore the result revealed good instrument to measure the pre-test and post test.

3.6.1.1 Validity of each item

To achieve valid research, the test was measured by formula as follows;

$$\gamma_{pbis} = \frac{Mp - Mt}{St} \cdot \sqrt{\frac{P}{q}}$$

Note :

γpbi = coefficient correlation bi-serial

Mp = mean of students who answer correctly

Mt = mean of total score

St = standard deviation of total score

P = proportion of students who answer correctly

q = proportion of students who get the wrong answer

(Arikunto, 2010:79)

Table 3.2

Category of coefficient of validity

r value	Interpretation
0.80 – 1.00	Very high
0.60 – 0.80	High
0.40 – 0.60	Satisfactory
0.20 – 0.40	Low
0.00 – 0.20	Very low

(Arikunto, 2010:75)

3.6.1.2 Reliability of test

Not only valid, but the research should also reliable. In order to obtain reliable instrument, the instrument measured by this following steps and formula.

$$r_{11} = \left(\frac{k}{k-1} \right) \left(\frac{Vt - \Sigma pq}{Vt} \right)$$

(Arikunto, 2010:231)

Note :

r_{11} = Reliability test index

p = Proportion of students who answer the item correctly divided by Number of students

q = Proportion of students who answer the item incorrectly (q = 1-P)

Σpq = Sum of the total result of the multiply p and q

$$k \quad = \text{Number of items}$$

$$Vt \quad = \text{Variance of the total score}$$

3.6.1.3 Difficulty index of each item

Try out test was done in order to acquire the difficulty rage of the test that would be given to the students. The difficulty range would be measured by using the formula below:

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

Note :

P = Difficulty index

B = Number of correct answers filled by the subjects

JS = Subjects who fill the test

<div align="right">(Arikunto, 2010: 208)</div>

Table 3.3

Criteria of difficulty Index

Difficulty Index	Interpretation
0.00 – 0.30	Difficult
0.31 – 0.70	Medium
0.71 – 1.00	Easy

Arikunto (2010:210)

3.6.1.4 Discriminating index of each item

The aim of using discriminating index was to distinguish the higher and the lower sample's achievement. The research used the following formula to achieve discriminating index;

$$D = \frac{B_A}{J_A} - \frac{B_B}{J_B} = P_A - P_B$$

Note   :

D =   Discrimination index

B_A =   Number of right answer from upper group

J_A =   Number of students from upper group

B_B =   Number of right answer from lower group

J_B =   Number of students from lower group

P_A =   Upper students' proportion

(Arikunto, 2010 :213-214)

Table 3.4

Criteria of discrimination index

Discrimination index	Interpretation
0.00 – 0.20	Poor
0.20 – 0.40	Satisfactory
0.40 – 0.70	Good
0.70 – 1.00	Excellent

Arikunto (2010:218)

3.6.2 Analyzing the result of pre test and post test

In this research, the sample which was used was relating to each other so that the result of data pre test and post test was calculated by using dependent paired t-test formula. Based on Arikunto (2008:172) the procedures were;

a) The result of pre test and post test was transformed into scale 1-100. By using formula as follows;

$$\frac{S}{40} X 100$$

Note :

S = The Raw Score

40 = Total Row Score

100 = Constant Value

b) The result of the data was tested by using Kolmogorov-Smirnov formula in order to gain the distribution score. This test will be done by using SPSS 18. There are three phases in calculating this test; first is setting the alpha level at 0.05 (two-tailed test) and stating the hypothesis.

c) The data from pre test and post test were analyzed by using dependent t-test in order to compare the differences of means between pre-test and post-test. SPSS 18.0 will be done to calculate the test. In this step, the t value (t obtained) will be compared with t critical. If the t obtained $\geq$ t critical at the significant level (p)= 0.05, the null hypothesis (Ho) is rejected and if t obtained < critical, the null hypothesis is accepted.

3.6.3 Analyzing the result of interview

To analyze the result of interview, in this research, the interview was given to both the teacher and the students. It was conducted to obtain not only the teacher's point of view but also students'. It was held to gain their opinion about TPRS. Then, the data was classified into the students' and the teacher's point of view about the advantages and disadvantages of the technique. The result of it would be presented in chart form.