CHAPTER 3

RESEARCH METHODOLOGY

3. 1 RESEARCH DESIGN

3. 1. 1 The Design

It has already been mentioned in Chapter One that the research applied quantitative paradigm with a true experimental design with pretest posttest control group design. The quantitative paradigm advises researcher to plan a research systematically to obtain a meaningful interpretation of the results of the study. In order to find out a meaningful interpretation of the results of the study, data gathering procedures should be done with care, (Farhady, 1982) and the concept of validity should be considered.

In this design, data gathering procedures had already been done with care by paying attention to the validity of the research, such as, considering some factors which could effect of the research validity.

To preserve validity of the study some factors (test effect, subject selection, and history) were controlled in this design. To avoid the test effect, the test was tried out in advance, and then its results were analyzed to determine reliability and difficulty level of the test.

To avoid the effect of subject factor, the sample students who were drawn from the population were randomly selected. To determine who was in experimental group or control group were also randomly selected.

A pretest was also administered to both experimental group and control group. It was conducted before the treatment. Its purpose was to find the initial variances between the experimental group and control group. At the end of the sessions, a posttest was given to both experimental group and control group.

To avoid the history effect, the back ground of English capability of the sample students was also identified. Based on the identification, none of the sample students had superiority in English ability. All of the sample students were at the same level. Their English knowledge was just obtained from formal study.

3.1. 2 The Setting and Samples of Study

The study setting was a Senior High School in Serui. It is located in Serui town. It is in Kepulauan Yapen Regencies (one of regencies in Papua Province). The population of the research was students in the eleventh class of science program. It consisted of five classes. They were science program one, two, three, four, and five.

All of the classes had the same chances to become sample students. However, two of them should be determined as sample students. To get the sample students a lottery was given to the five classes. Two of them were randomly selected to become as sample students of the study using clustering sampling. When the sample students had been determined, a lottery was administered again to determine who would be

experimental group and control group. One piece of the lottery was written on it experimental group and another piece was not written at all. Those who took the a lottery written experimental group on it become group experiment and those took the blank one became group control.

From the lottery given, finally, the eleventh class of science program 1 was randomly selected became group experiment and the eleventh class of science program 3 became group control. Unfortunately, the two groups had equal number in the quantity, that is, thirty one students each.

3.2 The Variables of Study

Based on the title of the thesis, there are two kinds of variables in it. The interactive listening is as independent variable which was manipulated to give the effect on the dependent variable. The dependent variable is student's listening ability which was observed and measured to determine of the effect of the independent variable, (Farhady: 1982). Based on the variables observed and measured, this research has got three dependent variables: if the interactive listening is effective to develop the student's listening ability, what makes interactive listening able to develop student's listening ability, and what provokes the student's involvement.

3. 3 The Teacher

The treatment for both group experiment and group control was executed by the researcher himself. It was conducted so to avoid unfair treatment. Beside that, the teaching of listening integrated in with speaking activities was never conducted by

the teacher in that school. It was also unlikely for the researcher to teach one of the teachers to become the executor of the treatment due to limited time.

The role of the teacher in the process of teaching listening was a model, motivator, and facilitator. Teacher as a model means the teacher gave the example or a model to how to do the task. Teacher as a motivator means that in the process of teaching listening, he often encouraged the students to do the tasks more enthusiastic by giving verbal rewards. And teacher as facilitator means the teacher did not dominate the class. He was only a helper to make the students more understandable and able to do the tasks.

3. 4 Listening Teaching Materials

The instructional objectives of the interactive listening were adopted from the Standard of competence for listening skills at eleventh class level. To cover the objectives, the researcher adopted authentic listening materials and the listening tasks were developed based on the principles of teaching interactive listening.

The authentic listening materials were adopted from the following sources: 1) English Alive 1, 2) English Alive 2, 3) Listening Student's Book 1, and New English Course 3 Part A. Those listening materials were suited with the level of student's English ability. (See appendix 02).

3. 5 Teaching Procedures of Interactive Listening

The teaching procedures of Interactive Listening were a relatively standard format for the listening lesson developed at this time: Pre-listening, Listening or while-listening, and Post-listening. The teaching activities in each stage are explained as follows:

Pre-Listening

Dealing with activating the student's prior knowledge

a) Greeting the students
b) Making students feel more comfortable
c) Attracting students' attention: brainstorming vocabulary, questions and answer, answering questions based on the picture, etc.

Listening or While-Listening

Dealing with listening process

a) Listening text through cassettes
b) Do speaking activities prepared by the teachers.
c) In this stage, the teacher also did diagnostic activity and doing remedial exercises

Post-Listening

Dealing with listening product

a) Performing a dialog
b) Retelling the spoken text or story heard with their own words

3.6 The treatment

Both the experimental group and the control group got a treatment. However, they got different treatment. The experimental group got Interactive Listening. It means the students were asked to get the information from the spoken language or aural text. Besides, the student's performance is also integrated with speaking activities. The control group got the conventional one. The conventional means the usual way of teaching listening conducted in language classroom, that is, asking the students to find out certain information from the spoken language or aural text the students have just heard. The two groups got the same materials and teaching procedures (pre-listening, while listening, and post- listening).

The teaching was conducted eight meetings for each group. Every teaching took two hours meeting. One hour meeting equaled to forty five minutes. So, for two hours meeting equals to ninety minutes. The schedule of the treatment can be seen in Table 3. 1.

Figure 3. 1

The schedule of the treatment

No	Group	Month	Day	Date	Total
1.	Experimental Group	May	Wednesday	13, 20, 27	3
			Friday	15, 22, 29	3
		July	Wednesday	3	1
			Friday	5	1

The total					8
2	Control group	May	Monday	18	1
			Thursday	14, 28,	2
			Saturday	16, 23, 30	3
		July			
			Monday	1	1
			Thursday	4	1
The total					8

3.7 Data Collecting

Referring to the research questions of the study, data gathering was conducted through pre-test, post-test, videotape of Interactive Listening process questionnaires, interview, and linguistic evidence.

The pre-test and post-test used the same test. The test was a listening comprehension test. The test type was multiple choices with five options. It consisted twenty five items. The test was divided into four sections. Section one was about statements with pictures. It consisted of two items. It ranges from the item number one up to number two. Section two was about questions and responses. It consisted of four items. It ranges from the item number three up to number six. Section three was about short conversation. It consisted of nine items. It ranges from the item number seven up to fifteen. Section four was about short talk. It consisted about ten items. It ranges from the item number sixteen up to number twenty five.(see Appendix 03).

There were some phases conducted in constructing the test. The first phase was determining the teaching material and identifying linguistic properties due to teaching objectives to be tested and then put them into a specification of a test. The second phase was constructing the items in cards. The third phase was editing them in paper test. Because it was edited a listening comprehension test, the transcript of the test was also recorded. It was recorded in TVRI station in Serui. The last phase was trying out of the test.

Trying out of the test was intended to find out about the reliability and the difficulty of the test. The level of reliability and difficulty of the test are meant to indicate if the items of the test needed change or not.

The trying out of the test was conducted on the 8th May 2009. The object of the trying out was the eleventh class of science program of SMA Negeri 1 Serui and this class was not included as the samples students of the study.

The questionnaire is about the things related with the Interactive Listening (see appendix 05). The type of the interview is aptitude test. It means the sample students were asked to make a check list to the option they thought or felt was better. The test was given to the experimental group only. The questionnaire has sixteen items and five options. And the options are strongly agree, agree, undecided, disagree, and strongly disagree.

Another instrument used to collect the data is interview (see appendix 06). The interview was intended to find out the student's views on the activities of

Interactive Listening. The interview consists of four questions. The interview was given to the experimental group only.

Collecting linguistic evidence was also conducted in this design. It deals with the inquiry of how many sample students had performed well and how many sample students still did not perform well in pretest and how many samples students had performed well and still did not perform in posttest and factors that might cause the sample students did not perform well in the post test, and which of the listening skills were found more difficult for them

3. 8 The Reliability of The Test

The test was tried out before it was determined as the fixed instrument in this study. It was not tested to both experimental, or control group. It was tested in the class ,not included, as the sample students. The purpose of trying out of the test in this design was to find out the reliability and difficulty level of the instrument. "The test reliability refers to the consistency of the measurement", Millan and Schumacher (2001: 181). The consistency of an instrument can give validity to the data gathered. Developing the reliability of an instrument is to minimize the influence of the score chance or other variables unrelated to the intent of the measure.

The method applied to measure the reliability of the test used the Spearman-Brown test. According to Gronlund (1976: 110) "Split-Half Method is the measure of internal consistency". So the estimation of the reliability of test tried out used the Spearman-Brown formula with on the full-length test. This formula is as follows:

$$\text{Reliability on full test} = \frac{2 \times \text{Reliability on } \frac{1}{2} \text{ test}}{1 + \text{Reliability on } \frac{1}{2} \text{ test}}$$

To compute reliability based the Spearman Brown Formula was conducted by dividing the test into in half for scoring purposes. To split the test into halves which were most equivalent, the usual procedure was to score the even-numbered items and the odd-numbered items separately. This provided two scores for each pupil which, when correlated, provided a measure of internal consistency. This coefficient indicated the degree to which the two halves of the test equivalent. This coefficient was determined by correlating the scores of two half tests.

And the criteria used for the reliability index of the full test (Rn) are as follows:

a. Index test is $0.00 \leq Rn \leq 0{,}20$ (very low reability)
b. Index test is $0.20 \leq Rn \leq 0{,}40$ (low reability)
c. Index test is $0.40 \leq Rn \leq 0{,}60$ (medium reability)
d. Index test is $0.60 \leq Rn \leq 0{,}80$ (high reability)
e. Index test is $0.80 \leq Rn \leq 1{,}00$ (very high reability)

Base on the computation of the score of the test tried out, the reliability of the test t indicated 0.674 level.the reliability. Refering to the criteria of index text of the realibility above that the The position of the reliability of the test tried out between $0.60 \leq Rn \leq 0{,}80$. It means the reliability of the test tried out had high reliabilty. It had high consistency. This instrument had fulfilled a prerequisite to measure the listening ability of the samples students of study (see apendix 7)

3. 9 The Difficulty Level of The Test

A good test is a test that can measure the good and poor students. To know if the test suits for the poor and good, the difficulty level of the test shoud be measured. So, before the test was determined as an instrument for this of thi research its difficulty level was measured in advance. The following is the formula used to measure the difficulty level of the test tried out:

$$TK = \frac{nB}{N} \, x \, 100\%$$

Where

TK = the difficulty level of the test

nB = sum of the students are right answer

N = sum of the students

And the criteria used to determine the difficulty level of the test as follows:

a) 0 % - 15 % (very difficult)

b) 16 % - 30 % (difficult)

c) 31 % - 70 % (medium)

d) 71 % - 85 % (easy)

e) 86 % - 100 % (very easy), (Karnoto, 1996)

Based on the computation of the difficulty level of the test, the difficulty level of the instrument fell between 31 % and 37 %. It indicated that the difficulty level of the test was at medium level. In other words, the test was able to measure the poor and the good students (see appendix 07)

3. 10 Data Analysis

The data analysis conducted in this reseach was based on the types of the data collected. Refering to the data gathering of the study there there are five knids of data ,such as, pre-test data, post-test data, Additional analysis was also conducted in this design, that is, the linguitic eveidance. The data analysis was conducted as follows:

3. 10. 1 Data Analysis of the Test

It was mentioned above that there were two kinds of data: pre-test and post test data which experimental and control group obtained before a treatment. The pre-test was analyzed using t-test. It was meant to find out the equality of experimental group and control group in listening ability. One of a prerequisite of t-test is the pretest data of experimental and control group must be in normal distribution.

However, the normal distribution of pre-test data was not computed in this design because sample students of experimental group and control group were more than thirty for each. For thirty or more sample students is assmued that the data is nomally distributed, (Farhady, 1982)

The pre-test data gathered from the experimental group and control group was also inteded to know the equal mean of both groups. if the different mean of experiemntal group and control group are significantly different befrore the treatment done, it can be assumed that the effect is not caused by the treatment but the varience itself. That's why, in this reseach design, the equal mean of the experimental group and control group was also counted in this design.

To compare the equal mean of the pre-test in this design uses independent t-test and (Sarwono, 209). Based on the pre-test data gathered (see appendix 08) that both experimental group and control group consists of thirty one for each. The total score of experimental group was 1352. Its avarage was 43.61 and its standard deviation was 16.11. The total score of control group was 1396. Its avarage was 45.00 and its standard deviation is 17.00. The Std Error Difference between means of the pretest was 4.2 and t value was - 0.3309 with df = 60 of the t-table at .05 level of significance for two tailed test is 2.000. It indicates that t-value of pretest is lower than t-table. It is on negative direction, but it is still in the critical value of t-table. It means that sample students are truly drawn from the same population. In other words, the experimental and control group have relatively same listening ability before the treatment done.

The post-test data gathered was analayzed with independent t-test too. In the process of analyzing the post-test, the researcher did not count directly the posttest score in the t-test. The process of analysing the posttest score was coducted by getting the gain of the experimental group and control group (see appendix 09).

The reason why the gaing was conducted as computation base was pretennding a sample student of experimental group gets 30 score in pretest and 60 score and a sample student of control goup gets 60 score in pretest and 75 score in posttest, and if we look at the socre in a glance, we will say the sample student of control group is better. However, if we look at the gain score the sample of

experimental group is bettet though his/her score is lower. So, computing the gain of experimental group and control group is more accurate.

The intention of analyzing the gain of experimental group and control group was to find out if the effect of sytematically treatment done between experimental and control group was significant or not.

3.10.2 Data Analysis of Interactive Listening Process

Data analysis of Interactive Listening Process was based on the videotaping of the Interactive Listening Process. It was conducted by listening the raocrded teaching listening process and choosing two meetings as the representative for all sesisons. The first and the firth meetings were chosen as the representatives for all sessions.

The anaylis was done by listening to the two recorded sessions and put them in a transcription. The transcription was cetegorized into Teacher's Talk with no Response, Teacher's Talk with Non-Verbal Response, Teacher's Talk with Student's Response, Student – Student Response, Student's Talk with No – Response, and Tape's Talk with Student's Response.

3. 10.3 Data Analysis of Questinnaire

Every item of the questinnaire has five options and each option has a degree raging from five to one: strongly agree has five score, agree has four score, undecided had three score, disagree had two score, and strongly disagree had one score. The questionnaire data was analyzed by puting them in a matrix, then determining the

lower and the upper score, and putting them in percentage. The percentage was obtained from the number of the students choosing a certain option divided by the total items multipflied by 100 %..

The criteria of interpreting the analyzed data uses the following criteria:

a) 0 % - 20 % (very weak)
b) 21 % - 40 % (weak)
c) 41 % - 60 % (enough)
d) 61 % - 80 % (strong)
e) 81 % - 100 % (very strong)

3.10.4 Data Analysis of Interview

The analysis of interview data was done by getting a sense as the whole and some ideas that attract the researcher's mind, picking up the most interesting and writing the thoughts in the margin, making them in a list of all topics, and clustering tothether the similar topic. From these topics into columns that might be arrayed as major topics, unique topics, and leftovers, then grouping them that relates to each other.

The next phase, assembling the data interview which belongs to each category and then perform the analysis. After the performing the analysis, the reseacher interpretes it to find out what interaction provokes the sample students in the interactive listening.

3.10.5 Data Analysis of Linguitic Evidence

The procedure of analying the liguistic evidence was conducted by transcribing types of liguitic proverties in each item, and then determining the total number of the sample students who have performed well and still do not perform well in pretest and the total number who have performed well and still do not perform well post test. And those who still did not do well in posttest in certain item was analyzed to find out the factors that might bring about the case linguitically. The analysis of listening skills was also included in the analysis linguistic evidence. It was aimed to ideftiy the more diffult listening skills that the sample students encountered.