CHAPTER III

RESEARCH METHODOLOGY

This chapter is devoted to outline the methodology of the research. This chapter presents some considerations in determining the data to collect, the subjects from whom data will be taken, the data collection, and steps to analyze the obtained data.

3.1 Research Design

This study used One-Group Pretest-Posttest design. The design was commonly used in educational study. In the One-Group Pretest-Posttest design, a single group was measured or observed not only after being exposed or treated, but also before (Fraenkel and Wallen, 1990:236). The study only used one class which was considered as an Experimental Class, as it had been suggested by Fraenkel and Wallen (1990). All participants in Experimental Class had the same level, but the writer used a different set of treatments in the teaching and learning process after conducting the Pretest.

This study used an experimental study. The sample was acknowledged into one class; Experimental class. All participants were given pre-test and post-test. Before giving the post-test, *Cooking Academy 2 World Cuisine* as a computer game was given to the Experimental class as a treatment. Subsequently, the data

which was taken from Experimental class compared and analyzed to find out its significance as the answers of the research questions.

The Experimental design in this study would be explained as follow:

Experimental	O_1	X_1	O_2

Notes:

O1   : Students' speaking scores of Experimental class in pre-test

O2   : Students' speaking scores of Experimental class in post-test

X1   : Treatment using computer game entitled *Cooking Academy 2 World Cuisine*

The study used one class (Experimental class). The treatment was only given in Experimental group repeatedly. Before giving the treatment to Experimental class, all participants had conducted the pre-test to know students' speaking ability. After giving the pre-test to the Experimental class, the post-test was given to know students' speaking ability after the treatment. This process used as a mean to identify whether there was a difference or not between the pretest and posttest data in the experimental class which used computer game as a treatment entitled *Cooking Academy 2 World Cuisine*.

In this study, the independent variable was the use of computer game entitled *Cooking Academy 2 World Cuisine* in the teaching of speaking. This was the treatment or controlled variable in order to assess their possible effects on one

or more other variables. The dependent variable was students' speaking scores. This was the variable that depended on what independent variable did to it (Fraenkel & Wallen, 1990: 32).

This study was started with the null hypothesis, the pretest and posttest score in experimental class were considered similar in the beginning of the experiment.

$$H_0: \quad \mu_1 = \mu_2$$

Kranzler and Moursund (1999) suggested that the meaning of null hypothesis was there is no difference between pretest and posttest score in experimental class in the *mean* adjustment level. So that the null hypothesis in this study was there is no difference between the two scores (Pretest and Posttest) in students' speaking ability.

3.2 Data Collection

3.2.1 Population and Sample

The population in this study was one of SMA Pariwisata in Bandung. The total population of first grade students was sixty eight students.

Twenty five students participated as sample in this study. Twenty five students of class X-1 decided as the experimental class.

3.2.2 Research Instrument

Tests and structured questionnaires were used to collect the data in this study.

3.2.2.1 Tests

To collect the students' speaking scores data, oral tests were conducted to the Experimental Class. The most important thing in speaking class, the students are able to communicate with other in oral form (Jespersen cited in Murcia, 1979: 83). Based on previous statement, oral test was decided as the best way to test speaking ability. In oral pre-test, students or participants from Experimental class have to conduct a monologue of a procedural text that was chosen by them freely. Meanwhile, in oral post-test, students from experimental class have to conduct a monologue of procedural text that was chosen from the computer game. To collect students' scores, a scoring sheet was developed based on the scoring guides designed by Georgiou & Pavlou (2003). The adopted scoring sheet consisted of three important aspects such as Fluency, pronunciation, and discourse management. This scoring sheet is available in table 3.1.

The pre-test and post-test were conducted to the experimental class in the form of oral performance test. The collected data from pre-test had shown the fundamental capability of students' speaking ability before given the treatment in experimental class. Meanwhile, the collected data from post-test had shown the effect of using computer game entitled *Cooking Academy 2 World cuisine* to the students' speaking ability. As a final point, to find out the significance of using computer

game entitled *Cooking Academy 2 World Cuisine* in improving students' speaking ability, the pre-test and post-test score would be compared by using SPSS statistics 17.0. Furthermore, 3 participants from the Experimental class were selected. Each participant would be categorized as high, medium, and low grader students in English course based on English teacher's recommendation.

Table 3.1

Speaking scoring Paper

Focus	Level	√	Score	Comments
Fluency	Frequent and long pauses cause difficulties in communicating.		15	
	Communicates even though there are some long pauses.		20	
	Communicates effectively without long pauses.		30	
Pronunciation	Pronunciation and/or inaccurate intonation makes comprehension difficult.		15	
	Acceptable, easily comprehensible pronunciation and intonation.		20	

	Very good pronunciation and intonation.		30	
Discourse Management	Structure not correct and there are not connection from each structure		20	
	Structure correct and there are not connection from each structure		30	
	Structure correct and there are connection from each structure		40	
Overall comments :				
Action Suggested :				
Teacher's signature				

Adapted from : Georgiou & Pavlou, 2003, *AssessingYoung Learners,* China, Oxford University Press

3.2.2.2 Structured Questionnaire

To find out the students' responses of using computer game entitled *Cooking Academy 2 World Cuisine* in teaching speaking, the structured questionnaire was used. The structured questionnaire consisted of several questions that related to the students' responses about the speaking activity and their point of view of using computer game entitled *Cooking Academy 2 World*

Cuisine in speaking activity. The structured questionnaire was given to the experimental group after the post-test. The structured questionnaires are available at the list of appendices.

3.3 Research Procedures

Several procedures were conducted in this research. The procedures were organizing the teaching procedures, conducting some treatments, administering pre-test and post-test, and conducting the structure questionnaire.

3.3.1 Organizing Teaching Procedure

In this study, the writer participated as a teacher in the experimental class. Preparing the appropriate materials for teaching and learning activities would be the best thing to do during the treatments for the experimental class. The writer was arranging the teaching procedures in experimental. At last, arranging the research instruments which were required for experimental class.

The teacher used computer game entitled *Cooking Academy 2 World Cuisine* as a media in teaching and learning speaking activities for experiencing the experimental class.

Table 3.2

Research Schedule

NO		EXPERIMENTAL CLASS
1		Pre-test
2		How to make favorite food from the game 1 Topic: chinese cuisines
3		How to make favorite food from the game 2 Topic: Japanese cuisines
4		How to make favorite food from the game 3 Topic : Indian Cusines
5		How to make favorite food from the game 4 Topic: American Cuisines
6		How to make favorite food from the game 5 Topic: Italian Cuisines
7		Review and post-test

3.3.2 Conducting the Treatment

In the study, the computer game entitled *Cooking Academy 2 World Cuisine* treated in the experimental class. The computer game entitled *Cooking Academy 2 World Cuisine* affords related material based on curriculum and syllabus. The *Cooking Academy 2 World Cuisine* was created by *Fugazo^{tm}*.

As the first condition, there were no differences between the pretest and posttest score in experiment class. Then, the differences could be identified from the two scores only in the use of media.

3.3.3 Administering the Pre-test and Post-test

A pre-test was administered to the Experiment class before the class was given the treatment. The pre-test scores were used to find out the basic students' speaking ability. The post-test was taken after the treatment had been conducted in the experimental class. The post-test scores were pointed to find out whether the use of computer game entitled *Cooking Academy 2 World Cuisine* influenced the experimental class or not. Pre-test and post-test were conducted by asking students to do a monologue of procedural text in front of the class. The assessment focused on three aspects such as fluency, pronunciation, and discourse management.

3.3.4 Distributing Structured Questionnaires

The final procedure in this study was conducted the structured questionnaires. The questionnaires were conducted to find out the responses of experimental class students in using computer game entitled *Cooking Academy 2 World Cuisine* based on their point of view. The questionnaires were administered in the end of the treatment sequence.

3.4 Data Analysis

The analysis of data was performed after collecting the required data such as pre-test, post-test, and questionnaires. In doing this analysis, the writer also followed the steps that were suggested by Sudjana (2005) and Field (2005).

3.4.1 Pre-test and Post-test Data Analysis

The Pre-test and Post-test were statistically analyzed by using t-test. Before the test, tests of normality of distribution ad variance homogeneity were performed. If the scores were normally distributed, t-test could be conducted.

3.4.1.1 Normality of Distribution

Analysis of normality of distribution was conducted to find out whether the scores of experimental class are normally distributed or not. To analyze the normality of distribution, Kolmogrov-Smirnov formula was used in SPSS statistics 17.0 for windows. Based on Kranzler and Moursund (1999) if the *Asymp. sig.* is more than the level of significance (0.05), the scores were normally distributed. The t-test analysis can be conducted.

3.4.1.2 Homogeneity of Variance

The analysis of homogeneity of variance was performed to find out whether the variances of the pretest and posttest experimental class' scores are homogenous or not. To analyze homogeneity of variance, Levene Test formula

was used in SPSS statistics 17.0 for widows. If the probability is more than level of significance (0.05), variance of the experimental was homogenous.

3.4.1.3 The Independent T-test

The analysis of independent t-test was performed to find out the means of experimental class' pretest and posttest score whether there was significant difference or not. Independent sample test formula was be used in SPSS statistics 17.0 for windows. If the *Asymp. sig.* was more than the level of significance (0.05), it means both scores were significantly different (Kranzler and Moursund, 1999). If both scores significantly different, it means the computer-based cooking game entitled *Cooking Academy 2 World Cuisines* can be used in classroom to improve students' speaking ability.

3.4.1.4 Analyzing Data on Structured Questionnaires

The data gained from structure questionnaires were analyzed and described by using qualitative approach. The data were experimental students' response to the use of computer game entitled *Cooking Academy 2 World Cuisine* in learning speaking. The formula of percentage used to analyze the questionnaire. The data were described based on the frequency of the students' answer.

$$P = \frac{F}{N} \times 100\%$$

Notes:

P   : Percentage of response

F   : Frequency of answer

N   : number of students

3.5   Concluding Remarks

The aims of the present study run as guidance to determine the research subjects and sample size, the data collection, and data analysis.

This study used One-group Pretest-Posttest Design. It involved twenty five participants from one of SMA Pariwisata in Bandung. Specifically, they were enrolled in first grade or X-grade in senior high school.

The following chapter discusses explanation of data analysis and findings, which describes the analysis of the collected data from Pretest and Posttest and the distributed structured questionnaire.