

CHAPTER III

RESEARCH METHODOLOGY

This chapter will discuss the methodology used in the present study. It includes design, site and participants, research instrument and also steps in collecting and analyzing data of the research.

3.1 Research Site and Participants

In collecting data, one of vocational schools in Cimahi was chosen as the research site based on some considerations. Firstly, the selection of this site was based on convenience and accessibility of the researcher to carry out the research. This is in line with Alwasilah (2000) who suggests that convenience factor should be taken into consideration to support the researcher in conducting the research. Secondly, the elements of cooperative learning have been incorporated in the 2013 curriculum for vocational school. The relevance of cooperative learning in 2013 curriculum has been described in chapter 2, section 2.6. This school has implemented this curriculum since academic periods of 2013-2014.

This study used one class of eleventh grade which consists of 35 students as the participants. Eleventh graders of senior high school were chosen for some reasons. Firstly, in terms of materials, eleventh graders tend to learn more various materials to be discussed and presented than tenth grader. Secondly, regarding with learning time availability, eleventh graders were considered to have more learning time than ninth graders who should be more focus on final examination. Thus, based on the aforementioned reasons, eleventh grader was considered to be more appropriate to be explored in terms of their learning material and method.

3.2 Research Design

This study used a mixed method design because most features of this study embrace mixed method characteristics. Firstly, this design provides a better understanding of the study than merely either qualitative or quantitative design since

this mix method assesses both outcomes of a study as well as the process during the experiment itself (Cresswell, 2012). In this study, the process of how cooperative learning techniques develop students' speaking skills was investigated. Then, the outcomes of students' spoken test in form of numerical data were also calculated. Secondly, the use of mix methods can help the researcher confirm or validate relationship between variables (Fraenkel, Wallen, & Hyun, 2012). When one type of research (qualitative or quantitative) is not enough to address the research the research questions, more data is needed to explain or answer the research questions (Creswell, 2012). In this study, the first research question, which was answered by a qualitative design, was further elaborated by a statistical procedure, for obtaining a more valid and assured information.

Furthermore, quantitative method was applied since students' spoken test and questionnaire that involved numerical data were included as data instruments. Meanwhile, the data obtained from the interview and classroom observation were explored using qualitative method. By assessing both outcomes of the study (quantitative) as well as the process (qualitative), a better understanding of the research problems was provided (Creswell, 2012).

3.3 Data collection techniques

As explained in the previous section, this study employed a qualitative and quantitative data. In this study, the instruments used were classroom observations, questionnaires, semi structured interview and spoken test. This multiple data gathering were aimed to enhance the construct validity of the study (Yin, 2003, p.99).

3.3.1 Qualitative Data

In collecting qualitative data, the researcher employed two instruments namely classroom observation and semi structured interview.

3.3.1.1 Classroom Observation

The first method used in the present research was classroom observations. The data from classroom observation were used to see how techniques of cooperative

learning run in the classroom and how these techniques develop students' speaking skill. This type of method allowed the researcher to take field notes on the behavior and activities of individuals in the research site (Creswell, 2009, p. 181). In addition, it also might give a description of benefits and challenges encountered by students during the implementation of cooperative learning techniques. This is in line with Cohen, Mannion & Morrison (2007) who state that the observation offers an opportunity for researcher to gather 'live' data directly and naturally from what is taking place rather than relying on second-hand accounts.

The classroom observation was conducted 8 times that covered five meetings of teaching, one meetings of review, two times of tests. The learning took place for two hours per meeting. Eight meetings were chosen since the focus of this study was on speaking skills. Thus, eight meetings were considered enough to describe the process of cooperative learning in facilitating students' speaking skills.

The researcher observed the class activities by taking notes as well as recording to make sure that there are no important utterances left. In this research, the observation was conducted by the researcher herself as the teacher participant assisted by one observer. The researcher invited one of her colleagues, namely Ms Tiara (Pseudonym) as the observer to see the objectivity of the teaching program done by the researcher and to maintain reliability of the study (Emilia, 2005). The observer filled in the observation checklist which was set from the theory of cooperative learning (Gillies, 2003; Johnson & Johnson, 1984; Johnson & Johnson (1999), Johnson & Johnson, 2009; Kagan & Kagan, 2009). The researcher explained the concept especially the important elements of cooperative learning to the observer prior to the preliminary study of the research in order to make sure that she understood how to fill in the observation checklist. Moreover, the observer wrote some notes about what was happening during the implementation of cooperative learning techniques and how these techniques facilitate students' speaking skills. The time schedule of classroom observation is described below.

Table 3.1 Classroom Observation Schedule

No	Date	Focus/Topic	Methods
1.	Aug 1, 2015	Preliminary study: Diagnostic test	Audio recording
2.	Aug 8, 2015	Lesson 1: "Can greed ever be satisfied?"	Video/field notes
3.	Aug 22, 2015	Lesson1: "Can greed ever be satisfied?"Continued	Video/field notes
4.	Aug 27, 2015	Lesson 2: "Bullying"	Video/field notes
5.	Aug 29 , 2015	Lesson 2: "Bullying" continued	Video/field notes
6.	Sept 5, 2015	Lesson 3: "Street Children"	Video/field notes
7.	Sept 12, 2015	Review of all the materials	Video/field notes
8.	Sept 26, 2015	Final test	Audio Recording

3.3.1.2 Semi structured interview

The last instrument in this study was interview. Semi structured interview was used to check the accuracy of the impressions that researcher has gained through the observation. The series of questions were design to elicit specific answer from respondent, and then the information obtained was compared and contrasted (Fraenkel & Wallen, 1993).

In this study, the students were interviewed to find out their point of view regarding the implementation of cooperative learning especially its benefit and challenges. This interview was useful to elicit things happen during the observation (Then & Ting, 2011, p. 10) and was used also to validate the findings of the data from classroom observation and questionnaires.

The interview employed was a semi structured interview. In a semi structured interview, the interviewer has a general idea of the information he/she wants to gain, without giving a list of predetermined questions (Nunan, 1992). There were ten basic questions that were asked to the interviewees after the process of teaching program has been accomplished. The basic questions have been determined before and those

questions are followed up by other questions depending on interviewee's responses. The questions given to students were also based on the information obtained from the questionnaires given before.

The interview was addressed to 9 students by reference of the teacher. Nine students were considered enough to represent different level of achievement namely 3 students of high achievers, 3 students of medium achievers, and 3 students of low achievers. Those different levels of students were chosen based on the performance on their diagnostic test, as well as their performance during the treatment. The interview was conducted and recorded at the end of the teaching program implementation by using English and Indonesian. The two languages were firstly offered to choose by the students to make them feel more comfortable and share their responses of interview freely.

3.3.2 Quantitative Data

In collecting quantitative data, the researcher employed two instruments namely questionnaire and students' spoken test.

3.3.2.1 Questionnaire

In this study, close-ended questionnaire was used. The close-ended questionnaire was intended to find out the students' point of view regarding the benefit and challenges of cooperative learning. This questionnaire enabled the researcher to collect data in field setting. This closed-ended questionnaire items provided the ready-made response options to be chosen (Nunan, 1992). The statements of the questionnaire were based on literature about cooperative learning. The questionnaire used four-rating scales of Likert scale. The students were asked to tick the column whether they are 'strongly agree', 'agree', 'disagree', and 'strongly disagree'. In the questionnaire, among 35 statements, 17 of them (1-17) were about the benefits of cooperative learning especially how cooperative learning develop students speaking skills (18-31) and 4 of the items (32-35) were about challenges of

cooperative learning. The questionnaire was written in Bahasa Indonesia and delivered at the end of the lesson.

Furthermore, the questionnaire was used to validate the findings of the data from classroom observation regarding how techniques of cooperative learning facilitate students' speaking skill. The questionnaire distributed to 35 students of vocational school at the end of the teaching session.

3.3.2.2 Spoken Test

This study also involved the spoken test which was administered to see whether cooperative learning techniques can develop students' speaking skills. It was also used to measure students' speaking improvement in general. There are two kinds of tests: pre-test and post test. The pre test was given at the beginning of the meeting to diagnose students' speaking skills before the teaching and learning process was conducted. Then, at the end of the meeting, post test was also given to find out whether the students' speaking skills had been developed by the teaching of cooperative learning techniques. In both the pre test and post test, students were required to choose one of the pictures and they were asked to describe and give their opinion about the pictures orally.

As stated in chapter II, in this study, fluency is more emphasized since the learning objectives of the syllabus focus on producing appropriate language in context without neglecting some aspects of accuracy. Thus, the students' spoken test was analyzed using the rubric from SOLOM (Student Oral Language Observation Matrix) for the general aspects of speaking included comprehension, fluency, vocabulary and grammar. It is originally developed by the San Jose Area Bilingual Consortium and has undergone revisions with leadership from the Bilingual Education Office of the California Department of Education.

3.4 Data Analysis

The data analysis for this qualitative research essentially consists of preparing and organizing the data for analysis, then reducing the data into themes through a

process of coding and condensing the code, and finally representing the data in figures, tables or discussion (Creswell, 2009). In this study, an analysis was conducted toward data which had been obtained from classroom observation, questionnaire, and students' interview. The analysis of data obtained from those instruments is described as follows.

3.4.1. Data from Classroom Observation

Data from classroom observation were analyzed descriptively. This is in line with Creswell (2009) who says that data which emerge from qualitative study are descriptive and should therefore be reported in words. The analysis was commenced by making verbatim transcription of classroom interactions. Then, the transcriptions were read repeatedly. During the reading process, the researcher employed coding activity by matching the data with the research questions. This coding process was aimed at fracturing the data and rearranging them into categories that facilitate the comparison of data within and between these categories. Data from observation were analyzed to validate the data from questionnaires regarding students' speaking skills.

The categorization and interpretation data were based on theories presented in chapter two. Regarding cooperative learning techniques, the observation was focused on the basic elements of cooperative learning (Johnson & Johnson, 1984; Johnson & Johnson, 2009; Johnson & Johnson, 1999; Kagan & Kagan, 2009; Gillies, 2003) and the elements of speaking skills as follows:

Table 3.2
Observation Sheet

No	Elements of Cooperative Learning	Yes	No	Comments
1.	<i>Positive Interdependence:</i> <i>(Helping and encouraging each other)</i> <ul style="list-style-type: none"> Do the students responsible for learning the assigned materials? 			
2.	<i>Individual Accountability:</i> <i>(Everyone participating/ no letting others do all the work/ each student is accountable for his/her individual contribution and learning)</i> <ul style="list-style-type: none"> Does the teacher give an individual 			

	test/quiz/assignment? •			
3.	<i>Group Processing:</i> (Giving pupils time and procedures to analyze how well groups are functioning) • Does each group share with the class an incident in their group and how they solved it? •			
4.	<i>Small-group and interpersonal skills:</i> • Do group members actively listening to each other during group discussions? •			
5.	<i>Face-to-face interaction:</i> (Students get involved in promoting each other's learning) • Do group members orally explain how to solve problems? •			
6.	How do the elements of cooperative learning facilitate students' speaking skills? (which of those elements mostly engage students to speak in English?)			
7.	How do students' speaking skills develop while they collaborate in small group learning?			
8.	Through cooperative language learning, does the teacher take into account both language-based (accuracy) and message-based (interaction, meaning, fluency)? Please explain/give examples.			
9.	Does the teacher give the opportunity for students to initiate oral communication? Please explain/give examples.			
10.	Do all the students get a chance to speak in classroom discussion? Please explain.			

3.4.2 Data from Interview

The data from interview were analyzed through several steps. Firstly, recorded data were transcribed. In transcribing the data, the participants' names were replaced with pseudonyms (Silverman, 1993). Then, inappropriate or non relevant data were reduced. After that, the data were categorized into central themes which become the main concern of this study (Cresswell, 2008, p. 251-261) namely students' point of view on the benefit and challenges during the implementation of

cooperative learning technique and their point of view regarding speaking development.

3.4.3 Data from Questionnaires

The analysis of close-ended questionnaires was conducted in several steps. The first step was identifying the data from students' point of view regarding benefits and challenges of cooperative learning. This was done by identifying students' answer in the questionnaire given. The second step was categorizing students' answer based on theories of cooperative learning.

Analyzing the results of questionnaire was conducted by categorizing and calculating students' answers into percentage to see their points of view toward the implementation of cooperative learning and its effect on students' speaking skill. The data resulted from the questionnaire were analyzed descriptively as the following percentage of an item:

$$x = \frac{\text{Number of Students Choosing an Item}}{\text{Total Number of Students Choosing an Items}} \times 100\%$$

3.4.4 Data from Students' Spoken Test

The results of students' spoken spoken test in pre test test as well as in post test were analyzed by using the rubric of speaking adapted from Student Oral Language Observation Matrix (SOLOM) developed by the San Jose Area Bilingual Consortium.

Table 3.3 Speaking Assessment Rubric

	1	2	3	4	5
A. Comprehension	Cannot be said to understand even simple conversation.	Has great difficulty following what is said. Can comprehend only social	Understands most of what is said at slower-than-normal speed with	Understands nearly everything at normal speech. Although	Understands everyday conversation and normal classroom discussions.

		conversation spoken slowly and with frequent repetitions.	repetitions.	occasional repetition may be necessary.	
B. Fluency	Speech so halting and fragmentary as to make conversation virtually impossible.	Usually hesitant: often forced into silence by language limitations.	Speech in everyday conversation and classroom discussion frequently disrupted by the student's search for the correct manner of expression	Speech in everyday conversation and classroom discussions generally fluent, with occasional lapses while the student searches for the correct manner of expression.	Speech in everyday conversation and classroom discussions fluent and effortless; approximating that of a native speaker.
C. Vocabulary	Vocabulary limitations so extreme as to make conversation virtually impossible.	Misuse of words and very limited: comprehension quite difficult.	Student frequently uses wrong words: conversation somewhat limited because of inadequate vocabulary.	Student occasionally uses inappropriate terms and/or must rephrase ideas because of lexical inadequacies.	Use of vocabulary and idioms approximate that of a native speaker.
E. Grammar	Errors in grammar and word order so severe as to make speech virtually unintelligible.	Grammar and word order errors make comprehension difficult. Must often rephrase and/or restrict him/herself to basic patterns.	Makes frequent errors of grammar and word order that occasionally obscure meaning.	Occasionally makes grammatical and/or word order errors that do not obscure meaning.	Grammar and word order approximate that of a native speaker.

There were several stages in calculating the students' test result. The first one was that students' speaking skills was scored using SOLOM. Then, statistical value was employed to differentiate whether there was any difference among the score of the tests. After having the general interpretation of students test result, matched T-test was used to differentiate the significant improvement among the test score (Hatch & Farhady, 1982).

Prior to Pair T-test, normality test was conducted. It was implemented to know whether the data in both groups were normally distributed or not. It was computed by Kolmogorov-Smirnov test at level of significance 0.05. The first step in normality distribution test was to state the hypothesis below:

H₀: the score of both pre test and post test are normally distributed

H_a: the score of both pre test and post test are not normally distributed

According to Hatch & Farhady (1982:88), the assessment of normal distribution is as the probability is greater than 0.05 ($p > 0.05$), H₀ is accepted. However, H₀ is rejected as the probability is less than 0.05 ($p < 0.05$).

3.5 Validity

Validating needs to be conducted in order to determine the accuracy and credibility of the findings (Creswell, 2012). In this study, triangulation of data collection techniques was employed in order to decrease data bias and increase data validity. It is in line with Alwasilah statement (2000, p. 130), Yin (2003) and Emilia (2008) which points out that triangulation is beneficial to reduce bias in some certain methods and data source, besides it also enhances the validity of data results.

Through triangulation, the researcher examined some sources which consist of classroom observation, questionnaire, and interview and found out evidence to support a theme. This ensures that the study will be accurate because the information draws on multiple sources of information (Creswell, 2012). Classroom observation was done to see how techniques of cooperative learning run in the classroom and how

these techniques facilitate students' speaking skill especially students' fluency, accuracy and confidence in speaking English. In addition, questionnaire and interview were conducted to provide insight regarding benefit and challenges of cooperative learning.

3.6 Concluding Remark

This chapter has outlined the methodology of the study which covers research site and participants, research design, data collection techniques and data analysis. Concerning the research questions, elicited data through three kinds of instruments were analyzed. The data collected were analyzed and validated through triangulation process to answer research questions. The data presentation and discussion were then described in chapter four.