CHAPTER III

RESEARCH METHODOLOGY

The previous chapter explained about theoretical foundation of the research. This chapter explains about research methodology. It describes the method used to find the answer of research questions. It includes research design, research site, population and samples, procedure of data collection, technique of data analysis, and trustworthiness.

3.1 Research Design

This research employed qualitative descriptive method. This is coincide with (Fraenkel & Wallen, 1990) as cited in Creswell (1994: 162) that "The data that emerge from a qualitative study are descriptive; that is data are reported in words or picture, rather than in numbers".

The purpose of the study is to describe the teaching of English for Science and Technology at Mechanical Engineering Department of Bandung Polytechnic. This study was not intended to make any prediction or hypothesis; it only describes the situation or phenomenon.

3.1.1 Research Site

Considering the supervisor's suggestion and a reasonable aspect, the present study was regularly carried out in Bandung Polytechnic. Based on the objectives of the study and try to find the answer of the research questions, the writer could find the data about types of materials, teaching strategies applied, and the students responds to the given task also their opinion about English for Technology subject.

3.1.2 Population and Samples

With the respect to the Bandung Polytechnic English Department and Bandung Polytechnic Language Centre who decided which technical department that the writer was able to conduct this research so the population was the students at Mechanical Engineering Department Bandung Polytechnic who study English for Technology subject and the English for Technology lecturer of Bandung Polytechnic.

Afterward, the writer took the accessible population above as the sample, since the population was too big to be accessed. So the writer used criterion-based selection to decide which respondents that could become the samples. Based on LeCompte & Preissle (1993) cited in Alwasilah (2008: 146)

> "Criterion-Based selection are the way into the human, setting, and specific event that involved to got the information which could not be got from any other way".
> " (Criterion-based selection *yakni jurus agar manusia, latar, dan kejadian tertentu (unik, khusus, tersendiri, aneh, nyeleneh), betul-betul diupayakan terpilih (tersertakan) untuk memberikan informasi penting yang tidak mungkin diperoleh melalui jurus lain)"*.

Based on the description above, the writer chose class A consist of 30 2nd semester students and a lecturer who teaches them as the sample of this study because of the consideration from the Head of English Department of Bandung Polytechnic.

3.2 Procedure of Data Collection

Creswell (1994: 148) states about the data collection procedures "The data collection steps involve (a) setting the boundaries for the study, (b) collecting information trough observations, interviews, documents, and visual materials, and (c) establishing the protocol for recording information".

"The qualitative researcher is the primary instrument in data collection rather than some inanimate mechanism. Data are mediated trough this human instrument, rather than trough inventories, questionnaires, or machines" (Creswell, 1994: 145).The data were collected from April 8th to June 10th 2010 through some research instruments, as follows:

3.2.1 Interview

Creswell (1994: 152) mentions the components that followed in conducting the interviews, there are: (a) heading, (b) instruction to the interviewer (opening statements), (c) the key research questions to be asked, (d) probes to follow key questions, (e) transition message for the interviewer, (f) space for recording the interviewer's comments, and (g) space in which the researcher records reflective notes.

The kind of interview used in this research was guided or semi-structured interview which was appropriate to the (Field and Morse, 1985: 67) cited in Emilia (2008: 194)

> A guided or semi-structured interview was used in both stages of interviews to enable the researcher to get all information required (without forgetting a question), while at the same tome to permit the participants' freedom of responses and description to illustrate the concepts.

Moreover, the writer interviewed the lecturer and recorded the responses to some questions given (See appendices). Then the information was also recorded by taking note and using the MP4 player. "During the interview she should take notes in advance for the need of transcription was important" (Creswell, 1994: 152). This instrument was chosen to answer the research question about the syllabus applied, teaching strategies, and the lecturer opinion about the students respond to the way how she teach.

3.2.2 Classroom Observation

To obtain valid data, the writer came to the classroom and observed the respondents and the lecture. This data was used to answer research question about the teaching strategies that describe the way how the lecture teach also to investigate the teaching method applied in the English for Technology class. Moreover, the students were observed to see their enthusiasm in learning English that can prove whether the teaching strategies applied successful or not.

Those explanation above is relevant to Nasution (1987: 140) "Observation as an exploratory, by this instrument we got clear description about the problems and might get the clues about how to solve them".

The class observation was conducted from April 8th - June 10th 2010. In order to get the data, the writer decided to make the observation form aspect focus on the stages in teaching process. They are: the Opening, Pre-Activity, Whilst Activity, Post Activity, and Closing.

This instrument of the research was conducted in order to give the real situation description trough recording the teaching and learning process using handy camera recording. Toward this process, Allwright and Bailey (1991: 3) suggest "For more complicated inquiries, and so that you can have a more complete record anyway, you may prefer to audio-record, or even video-record, what goes on so that you can go back in detail to what was said, by whom, in what tone of voice, and so on"

Creswell (1994: 152) states that "The recording of document and visual materials can follow the protocol format outlined, there are; (a) information about the document or materials and (b) key categories that the researcher is looking for in the source of information".

3.2.3 Questionnaire

Questionnaire is a popular data collection technique on the qualitative research (Alwasilah, 2008: 151). In addition, Nasution (1987: 165) defines questionnaire as a list of questions to get some information from respondents.

To find out the students' attitude or response in studying English, the writer used of a questionnaire in order to follow suggestion's Allwright and Bailey (1991: 4) "...the obvious alternative to direct observation, is simply to ask, to give people an opportunity to report for themselves what was happened to them and what they think about it". She distributed the questionnaire to the students, so she could gain the additional information to measure and analyze the data collected.

There are two main sections in the questionnaire, the closed questions (in scale form) section and opened questions section. The result of the questionnaire (without identifying student names) can serve as a basis for classroom discussion, if possible, in the target language.

The format of Likert Scale is that statements are constructed and the weight commonly in scale 1 to 4 for the categories Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). The followings are the details of students' questionnaire:

1. Section one, the closed questionnaire consist of 21 statements with four responses categories: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD).
2. Section two, the open-ended questionnaire consist of 4 questions. Regarding to the students' perception, problem and expectation on the instruction (English), the reason and the purpose of taking English.

According to Nasution (1987: 88) these are some advantages of the Likert Scale, and they are:

a. It is easier, first, to construct the statement about attitude or behaviour, second, to determine the score since each answer has weight to be calculated; and the third, to interpret the score; the high score shows the high behaviour intensity.
b. It has the high reliability in ordering people based on certain behaviour intensity.
c. It is flexible in constructing the statements and the alternative of answer.

The arrangement of Likert Scale above is constructed and scale 1 to 4 for Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). Normally, the weight in scale 1 to 5 since there is Uncertain (U) category. However, here the uncertain category was eliminated to avoid the neutral perception from the students.

3.2.4 Document Analysis

As Guba & Lincoln (1981) in Alwasilah (2008: 156) state that there are six reasons why we need to analyze the document. They are: the document is always exist no matter how it used or not, document is an evidence to proof something, document is a natural resources, sometimes document is something cheap and easy to get, document is non-reactive source, and document has functions to enrich and complete the data that the researcher's need.

Therefore, since the document is an evidence to proof something and has functions to enrich and complete the data that the researcher's need, the document analyses are chosen to complete the data gathered.

The document review was gathered as the information for the data that supported the research question about kinds of syllabus applied and materials given by the lecturer. The document gathered were lesson plan, syllabus, curriculum, the textbook used, the handout, and example of the assessment or daily task.

3.3 Technique of Data Analysis

Tesch (1990) as cited in Creswell (1994: 153) states that "The process of data analysis is eclectic; there is no 'right way' ". In addition he states that "metaphors and analogies are as appropriate as open-ended questions".

Considering the Patton (1980) cited in Creswell (1994: 153) who state that the data generated by descriptive methods are voluminous. He found that no way of preparing his students for the sheer massive volumes of information with which they will find themselves confronted when the data collection has ended. Just sitting down through their pages of interviews and whole files of field notes that can be overwhelming.

The complete data obtained from questionnaire in the section one were analyzed using the following steps:

1. Questionnaire Data.

a. Scoring students' response on closed questionnaire.

b. Categorizing the question to support the data gathered based on the research questions.

2. Interview and class observation data

a. Making the transcript of lecturer's interview and also class observation.

b. Categorizing the data gained from open-ended questionnaire, interview, and class observation.

3.4 Trustworthiness

Lincoln and Guba (1985), and more recently Erlandson, Harris, Skipper, and Allen (1993) on Creswell (1994: 157) discuss establishing quality criteria such as "trustworthiness" and "authenticity"; these are all viable stances on the question of validity and reliability. That statement inspired the writer into this trustworthiness to prove or verify the validity of the research.

In order to improve and maximize the trustworthiness of the research results, Creswell (1994: 167) suggests the following strategies:

> (1) Triangulation of data- Data will be collected through multiple sources to include interviews, observations and document analysis, (2) member checking- the informant will serve as a check throughout the analysis process. An ongoing dialogue regarding our interpretations of the informant's reality and meaning will ensure the truth value of the data, and (3) long terms and repeated observations at the research site- regular and repeated observations of similar phenomenon and settings will occur on- site over a four month period of time.

In order to make the relation of one instrument to another instrument that used in this research to supported each other, Allwright and Bailey (1991: 73) explain that the procedures of the classroom research become more sophisticated so the writer have come to recognise the value of multiple perspectives in data collection and analysis. So there must be an important methodological concept named triangulation.

Denzin (1970: 472) makes several different forms of triangulation (Allwright and Bailey, 1991: 73), there are:

> ...data triangulation, which means using a variety of sampling strategies. Another is investigator triangulation, in which more than one observer contributes to the findings. Methodological triangulation refers to using different methods (for example, observation, analysis of transcripts, and self-report surveys) to collect the data. Finnaly theoretical triangulation demands that the researchers approach the data analysis with more than one perspective on possible interpretations.

Based on the statement above, the writer decided to use methodological triangulation to prove the trustworthiness because this research used some instruments that supported each other in data collection.