

CHAPTER III

RESEARCH METHODOLOGY

To obtain the clearer picture of a bilingual program implemented in the setting of this research (JHS), the researcher employed a qualitative study. Through this qualitative study, the researcher tried to answer the research questions:

1. How is a bilingual program implemented in JHS?
2. Does the bilingual program in JHS affect students' academic achievements in the subjects of Mathematics, Physics, and Biology??

Given those primary guiding research questions, as well as the purposes of the research, a qualitative study represented an appropriate means of obtaining data. In the first sub chapter of this chapter, the researcher begins with a description of the setting and participants of the research. Overall, this chapter presents setting, participants of the research, research design, data collection, and data analyses. Each sub chapter is described as follow.

3.1 Setting

This research took place in one state junior high school in Bandung, initially known as JHS. The selection of the school as the research setting was based on the school's achievement to be included in the government's projects to implement a bilingual program.

The school was established in 1994 and it was appointed by Department of National Education of Indonesia (*Departemen Pendidikan Nasional*) to be a member of national-coalition schools or *Sekolah Koalisi Nasional* (SKN) in which the schools were appointed to teach students bilingually in 2003.

SKN was developed after the Education Ministers of Southeast Asia in the 37th conference in Chiang Mai in 2002. The countries participating in the conference committed to implement a bilingual program. In Indonesia, JHS is one of the schools appointed to implement the program. Based on the achievement of JHS in implementing the bilingual program, this school supported the significance of this research.

3.2 Participants of the Research

In this research, the participants (P) of the research were chosen purposively and voluntarily (Nunan, 1992:142). It was based on the purposes of the study, which were not to generalize the findings, but to

find out the answers to the certain case (Alwasilah, 2003:73; see also Cohen and Manion, 1985 as cited in Nunan, 1992: 142; Merriam, 1988) (i.e., bilingual program in JHS). Also, the participants in this research were chosen because “of their convenience and availability” (Babbie, 1990 as cited in Creswell, 1994:120; Fraenkel and Wallen, 2003:103). Based on those reasons, the participants of the research were:

1. Six bilingual students from grade eight as P1, P2, P3, P4, P5, and P6

Those bilingual students had been involved in the bilingual program since grade seven. These participants consisted of three male students and three female students. The reason for the researcher involved eight grade students was that they had already experienced bilingual program for one year, so they would give the significant contribution to this research. Differently from the eight grade bilingual students, the seventh grade bilingual students were new students in the bilingual program for they had not experienced the bilingual program before. Whereas the reason why the researcher did not choose the ninth grade was that they were preparing for the national examination when this research was conducted.

2. Teachers of Mathematics, Physics, and Biology as P7, P8, and P9

These teachers were involved in this research, mainly, because the teachers had already had experience as teachers in the bilingual program in JHS. Moreover, those teachers had attended workshops and trainings for bilingual program. Additionally, all of the teachers in

this research are female – there was no male teacher of Mathematics, Physics, or Biology for the eight grade bilingual program in JHS when this research was conducted. Thus, based on the two first reasons, those participants would give significant to this research.

3.3 Research Design

This research was conducted under a qualitative study and was designed as an attempt to “better understand any phenomenon about which little is yet known.” (Strauss & Corbin, 1990: as cited in <http://scholar.lib.vt.edu/ejournal/JTE/v9n1/hoepfl.html>). This research was conducted to “better understand a particular case” (Berg, 2007: 291) namely a bilingual program in JHS. Furthermore, this research was grounded on the data obtained from the field (through observations, interviews, and document analyses), which were analyzed inductively (Alwasilah, 2003:105; Glaser, 1978:31 as cited in Creswell, 1944:44). Therefore, based on those reasons, the qualitative research design was employed in this research.

3.4 Data Collection

Focusing the research on documenting a portrait of the practice of a natural bilingual program in JHS, data collection such as observations, interviews, and document analyses were appropriate techniques for

collecting it (Creswell, 1994:150; Sugiyono, 2005:63; Nunan, 1992; Alwasilah, 2003).

3.4.1 Observations

As proposed by Creswell (1994:152), to obtain data from a natural setting, six observations were carried out in this research. This type of data collection was primarily intended to find out the use of English and Indonesian in the classroom through the learning-teaching activities. The researcher videotaped the learning-teaching activities and observed the natural atmosphere during the bilingual learning-teaching activities in the classes of Mathematics, Physics, and Biology to record the data (Bogdan and Biklen, 1992:121 as cited in Creswell 1994:152). Also, the researcher took field notes.

In conducting the observations, the researcher chose the role as a passive participant-observer (Sugiyono, 2005:66). It was because the researcher did not want to disturb the learning-teaching activities. Playing this role, the researcher sat behind the classrooms, videotaped, observed, and took field notes. However, at the first time, the researcher did not choose to be in the classroom, rather, set a recording camera instead of the researcher's presence.

This option was effective to minimize the awkward nesses of the participants for being observed or likely disturbed by the researcher's presence. Nevertheless, the researcher decided not to do this in the second until the sixth sessions of class observations because the researcher could not zoom in nor zoom out to obtain expected-good angles.

According to Creswell (1994:152), being in the classrooms allowed the researcher much to take field notes that the researcher really realized that could not be captured if the researcher had not been around. To overcome the awkward nesses of the participants, the researcher tried hard to chat with the students, made jokes, and discussed many things prior to the observation. In short, the researcher approached them to create a conducive, comfortable observer-respondent relationship.

The data obtained through the observations were then explored. Not all the data were put into account. Rather, the researcher selected the relevant data by sticking to the research questions which had directed the researcher a lot in order to the researcher stood around the circle. The relevant data from observation is presented in chapter four of this paper.

3.4.2 Interviews

Realizing the role as a passive participant-observer would influence on the nature of learning-teaching activities (Sugiyono, 2005:66), the researcher conducted some in-depth interviews to get further data. The very basic argument of having them in this research was to triangulate and crosscheck the data collected through the other techniques, those were, observations and document analyses. There were one interview with P7, P8, and P9 and one interview with P1, P2, P3, P4, P5, and P6.

The interviews that involved P1, P2, P3, P4, P5, and P6 were mainly purposed to get further data about the implementation of the bilingual program in JHS and in what ways the students were influenced by the bilingual program.

Whereas, the interviews that involved P7, P8, and P9, were primarily intended to get further data about in what ways the bilingual program affected students' academic achievements in terms of Mathematics, Physics, and Biology.

Interviewing the participants was beneficial to obtain the in-depth information related to the research questions. The researcher chose semi-structured interviews. The reasons of choosing this kind of interviews were based on several bases as proposed by Nunan (1992:150), such as semi-structured interview

gives the researcher “a great deal of flexibility”. Also, it gives “a degree of power and control over the course” for the researcher – questions asked in interviews can be seen in appendices.

Finally, to obtain the valid data through this data collection technique, the researcher recorded the interviews and wrote notes related to the interviews with the participants (Nunan, 1992: 153).

3.4.3 Document Analyses

Some documents truly helped the researcher a lot to support the data collected through the other techniques. The documents collected were:

1. The profile of JHS
2. Samples of several pages of printed books published by the Directorate of Junior Secondary Schools or *Pendidikan Lanjutan Pertama*, lower secondary education (PLP): Student Books, Student Books Guide, Student Worksheets, Student Worksheet Guides, Teacher Guides, Evaluation, Evaluation Guides, syllabus, and Lesson Plans
3. Samples of tests and students’ answer sheets
4. Some government regulation papers such as UU *Sisdiknas* 2006 and *Permendiknas* 2006

The documents above provided the researcher with the data related to characteristics passed by the government about the bilingual program through international standard schools, such as vision and mission (it can be seen from the profile of JHS) as one of international standard schools or *Sekolah Bertaraf Internasional* (SBI), the materials of the bilingual program for Mathematics, Physics, and Biology (it can be seen printed books), students' academic achievements in Mathematics, Physics, and Biology (it can be seen from students' answer sheet), and the school's accreditation (it can be seen from regulation papers).

All in all, there were three techniques of data collection employed in this research, namely, observations, interviews, and document analyses. Each technique contributed to obtain the answers to the research questions.

Observations mainly contributed to find out how the bilingual program was implemented in JHS. Interviews were advantageous to confirm or get further explanation about what had been recorded through observations, and document analyses as well as another data collection technique to triangulate the data obtainment. The last, document analyses were particularly purposed to find out some information related to the research questions.

Finally, having collected the data, the researcher inductively analyzed them so the research questions could be answered based on the data collection (Bogdan and Biklen, 1982 as cited in Sugiyono, 2005:9).

3.5 Data Analyses

Data analysis is a form of analysis that is used by the researcher after the data was collected (Hatch and Farhady, 1982:36). Referring to what proposed by Hatch and Farhady, data analysis in this paper discusses what the researcher did with the data after the researcher collected them.

Since the data collection and the data analysis are highly intertwined in the qualitative research, so the researcher analyzed and interpreted the data simultaneously with the data collection (Creswell, 1994:153; Huda, 1999: 43; Alwasilah, 2003:296; Sugiyono, 2005:3).

The data analysis in this research was purposed to find out how a bilingual program was implemented and to find out whether the bilingual program affected students' academic achievements in terms of Mathematics, Physics, and Biology. In the process of data analysis, the researcher systematically explored the video recordings, transcribed the interview tapes then analyzed and interpreted the transcripts of the interviews, and some documents, then the researcher categorized, synthesized them, searched for the patterns, discovered what was

important, and finally, decided what story the researcher would tell and how (Bogdan & Biklen, 1988).

In addition, the triangulation of data was carried out to obtain valid conclusion. Alwasilah (2003:150; see also Calabreses, 2006 and Silverman, 2006 as cited in Emilia, 2008:198) mentions how crucial is the implementation of the triangulation of data in a qualitative study: (1) to minimize the risk of the limited or insufficient conclusion under the certain methods and data sources and (2) to increase the validity in order to broaden the domain analysis. The data obtained through observations, interviews, and document analyses was then cross-checked from variety of sources.

3.5.1 Observations

Firstly, the researcher explored and analyzed the video recordings and the field notes taken during the observations to obtain the significant data through this data collection technique. Having explored and analyzed the data, then, the data was interpreted by comparing and contrasting the data with the previous studies and theories in the literature review of this paper (Creswell, 1994:24).

Specifically, the researcher adapted the steps proposed by Tesch (1990, as cited in Creswell, 1994:154) to analyze the data from observation. The steps were:

1. The researcher got a sense of the whole observations by watching the video recordings many times.
2. The video recordings were transcribed.
3. The transcriptions were read carefully.
4. Next, the researcher merged the findings from the transcription by comparing and contrasting with the previous studies and theories based on the research questions – the researcher wrote these notes in the margin of the transcriptions.
5. Finally, the researcher clustered together similar topics and patterns from the observation of Mathematics, Physics, and Biology class concerned with the research questions.

3.5.2 Interviews

Secondly, the researcher systematically analyzed the data from interviews. It was started from transcribing the interview tapes. Then, the transcripts were given to the participants of the research to confirm what the participants had said before. The next step was merging the transcripts with the field notes and observation analysis. The last, the researcher analyzed and interpreted each case because each participant may “represent a different thematic finding” (Chapelle & Duff, 2003:166) by comparing with the theories underlying this research (Emilia, 2007 as cited in Emilia, 2008:197). Then the researcher looked for the similarities and differences among the participants.

Similarly with the data analysis from observations, the researcher adapted the steps were suggested by Tesch (1990, as cited in Creswell, 1994:154) to analyze the data from in-depth interviews. The steps were:

1. The researcher got a whole sense of the interviews by listening to the tape recordings.
 2. The tape recordings were transcribed.
 3. The transcriptions were given to the participants to confirm them.
 4. The transcriptions were read carefully.
 5. Next, the researcher merged the findings from the transcriptions by comparing and contrasting with the theories related to this research based on the research questions – the researcher wrote the notes in the margin of the transcription.
 6. Finally, the researcher looked for the similarities and differences among the participants.
- 3.5.3 Document Analyses

Thirdly, some related documents were analyzed and interpreted to triangulate the data obtainment from two other techniques by relating with the previous studies and theories underlying this research.

Particularly, several steps were carried out to analyze the documents related to this research. Again, these steps were adapted from Tesch (1990, as cited in Creswell, 1994:154). The steps were:

1. The researcher read all the documents gathered.
2. The researcher selected several documents concerning with the research questions.
3. Next, the researcher merged the findings from these documents by comparing with the findings from observations, interviews, and the previous studies and theories based on the research questions – the researcher wrote these notes in the margin of the documents.
4. Finally, the researcher clustered together the similar topics and patterns from them.

Finally, the researcher presented the collected data, interpreted them, and arrived at conclusions based upon them.

In conclusion, the data collection was so beneficial that the researcher could obtain the data related to the research questions. Analyzing the data, the researcher found some important findings to this research and finally came to conclusions based upon them. Therefore, the following chapter discusses data presentation and analyses.