CHAPTER III

RESEARCH METHODOLOGY

This section explains the research design, the setting and the participants of the study, data collection, the procedure of the study, and the data analysis that were carried out to answer the following research questions:

1. How does PBL integrate four language skills?
2. What benefits and challenges do the students gain?

At the end of this section, summary subsection will conclude the explanation.

3.1 Research Design

Considering the research questions, a qualitative descriptive design was considered appropriate to be used in this study.

Qualitative study was considered appropriate for this study because this study has similarities with the characteristics of qualitative research. First, with the aforementioned research questions, the purposes of this study were to explore how the PBL integrate four language skills in a class of eleventh graders of EFL classroom at a state vocational school in Cimahi and to explore the benefits and challenges encountered by the students. Hence, the data that were collected were qualitative in nature. It is in accordance with Alwasilah (2002), Creswell (2009), Stake (2010) that qualitative research mainly deals with qualitative data. Second, in collecting data for answering the first research question, participant observation was employed in this study. It is in accordance with Stake (2010) that qualitative research use participant observation. Third, as it was mentioned earlier that this study explored the benefits and challenges that the students encountered which data were collected from the students themselves as the human participants in the

participants' setting. Thus, this is in line with Stake (2010) that qualitative research relies on human perception. Also it is similar to one of characteristics of qualitative research that the data to achieve the purpose was collected in the participant's setting (Creswell, 2009). Fourth, the data analysis of this study was inductive. Then, from that, the researcher interpreted the data. According to Alwasilah (2002), Creswell (2009), and Stake (2010), qualitative researcher make interpretation of data.

Furthermore, a descriptive design was used for several reasons. First, this study was not aimed at finding out the impact of the implementation of PBL but rather investigating how PBL integrated the four language skills and exploring the benefits and the challenges that were encountered by the students. It is similar to the definition of descriptive research that a descriptive research is "an investigation that provides a picture of a phenomenon as it naturally occurs, as opposed to studying the impact of the phenomenon." (Tavakoli, 2012. P. 160). Second, as it was mentioned earlier, this study was concerned with the implementation of PBL that integrated the four language skills. It is in line with Tavakoli (2012) that a descriptive research is concerned with a process that are going on. Third, this study also investigated the benefits and the challenges that were encountered by the students. The benefits and the challenges were investigated from the students' beliefs or points of view. It is in accordance with Tavakoli (2012) that a descriptive research is also concerned with points of view, beliefs, or attitudes; effects that are felt; etc.

3.2 Setting and Participants

The study took place at a state vocational school in Cimahi, Indonesia. It involved an EFL class of 35 eleventh graders. The school and the class were chosen purposively. Alwasilah (2002), Creswell (2009), and Merriam (1988) state that in qualitative research, purposive sampling can be applied. The school was chosen because the school has a special characteristic that it was one of

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international-based national-schools in Indonesia that thus English language is encouraged to be used at the school. Moreover, the selection of the school was also on the basis of accessibility.

Furthermore, thirty five eleventh graders who had learnt English at the vocational school for more than a year was chosen because their level of English proficiency was considered sufficient to involve in PBL that integrated four language skills.

3.3 Data Collection

Multi data collection techniques were employed by the researcher namely classroom observations, document analysis, and questionnaires. They were acceptable techniques in this study as Creswell (2009) states that observing, interviewing, and examining documents are done to collect data by qualitative researchers themselves. Similarly, Alwasilah (2002) mentions that questionnaire, observations, and document analysis are among the methods of data collection that can be carried out in qualitative research.

The following table shows the timeline of the procedures of this study as well as the data collection.

Table 3.1

The Timeline of the Procedures of the Study and Data Collection

Date	Activity/Stage	Method
Before the 20th of April 2015	Pre-observations	Field Notes
The 20th of April 2015	Questionnaire distribution about grouping and theme for project	Questionnaire Field Notes
The 25th of May 2015	Explanation about PBL Planning Stage: agreeing on theme, determining final outcome, structuring the project	Video/field notes Students' Journal
The 27th of May 2015	Preparing Information Gathering Stage Information Gathering Stage	Video/field notes Students' Journal

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The 2nd of June 2015	Information Gathering Stage Preparing Information Compilation and Analysis Stage Information Compilation and Analysis Stage	Video/field notes Students' Journal
The 4th of June 2015	Information Compilation and Analysis Stage Preparing Information Reporting Stage	Video/field notes Students' Journal
The 18th of June 2015	Preparing Information Reporting Stage	Video/field notes Students' Journal
The 23rd of June 2015	Information Reporting Stage: Presentation	Video/field notes Students' Journal
The 25th of June 2015	Information Reporting Stage: Presentation Evaluation Stage Distributing questionnaire of benefits and challenges	Video/field notes questionnaire

a. Observation

As it can be seen in table 3.1, the observation was conducted before and during the implementation of the PBL. The pre-observations were carried out in order that the students familiar with the researcher's presence and that the researcher also familiar with the students: the number of the students, their faces, names, etc. It is also as Alwasilah (2002) states that it can be the method of establishing a rapport. The observations during the implementation were also carried out in every meeting as many as seven meetings. The observations were to gain data of the implementation of projects-based learning especially how the PBL integrated four language skills: listening, speaking, reading, and writing. It was video recorded as Sapsford and Jupp (2006) state that recording observation systematically is preferred to storing it in memory. By recording, the researcher can revisit and study the research site repeatedly.

This technique of observation is of the two primary data collection methods in qualitative research (Alwasilah, 2002; Merriam, 1988). Moreover, Sapsford and Jupp (2006, p. 59) add that by using observation technique,

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"information about the physical environment and human behavior can be recorded directly." In observing classroom, the researcher applied participant observation in which the researcher participated in the researched environment as the teacher. Non-participant observation is also employed that the observation was recorded using video recorder.

b. Document

Another data collection instrument was document analysis. This data collection method can be employed in qualitative study (Alwasilah, 2002; Creswell, 2009). The documents that were analyzed were students' daily journal and teacher's field notes that record their activities, teacher's presentation hand-out and lesson plan. All the documents could be sources for answering all the research questions. This was carried out simultaneously as the implementation of PBL applied. Also, this was employed for data triangulation.

c. Questionnaire

The third instrument of data collection that was employed in this study was open-ended questionnaire. It was suitable with this study design that is qualitative in nature as Alwasilah (2002) states that questionnaire can be used in qualitative study. Moreover, questionnaire, as Sapsford and Jupp (2006, p. 60) state, is "an economical way of collecting detailed data which are more broadly representative." There were two kinds of questionnaire. The first one was used for the sake of the implementation of PBL that was about grouping and group work (See in appendices). It was distributed on a day before the implementation day. It was to get students' input about group composition: the number of members they think is effective, classmates whom they think can work with them in group, and their opinion about who deserves to be a group leader. It is in line with Teaching

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Excellence and Educational Innovation (n. d.) that says that a teacher can ask students for their input about group composition. It also conforms to Harmer's (2007, p.168) statement that a vital consideration of compositing group is to make sure that friends are with friends, "rather than risking the possibility of people working with others whom they find difficult or unpleasant." From the results of the questionnaire, teacher could compose groups. The group composition was made so that it fulfilled several criteria: consisting of high, middle, and low achievers and considering students' input or request. The questionnaire was also to elicit students' opinion about interesting themes if they were about to make a project.

The second kind of questionnaire contributed directly to the study. As it can be seen in table 3.1, it was distributed to students after the implementation of PBL to gain data about benefits and challenges students encounter. The questionnaire was in form of open-ended questions (see appendices) with two big questions as follow:

1. What benefits do you gain from doing the project?
2. What challenges do you encounter in doing the project?

Besides the two open questions, the students were provided with cues in form of themes or aspects such as benefits in term of language skills, motivation, group work and social skill, knowledge, confidence, problem-solving skill and critical thinking, communication, presentation skill, independence, technology skill, creativity, and time. In addition, the students were also freed to add any aspect that had correlation to the benefits and challenges that the students got. The questionnaire was distributed to the students after the implementation of the PBL had been accomplished. It was after the seventh step of PBL implementation that was evaluating the project was finalized.

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3.3 Data Analysis

The data analysis was carried out simultaneously with the data collection. It is in line with Cresswell (2009) and Merriam (1988) who state that data analysis is an ongoing process. After the simultaneous data analysis and collection is ended, an intensive analysis is begun (Merriam, 1988).

Some authors propose quite different steps in analyzing data. The first step is reviewing the research proposal (Goetz and LeCompte, 1984, as cited in Merriam, 1988). The next is organizing data (Cresswell, 2009) topically or chronogically (Goetz and LeCompte, 1984, as cited in Merriam, 1988) and preparing the data (Cresswell, 2009). After that, an initial reading through the information is carried out (Cresswell, 2009). The reading should be done several times from beginning to end (Goetz and LeCompte, 1984, as cited in Merriam, 1988). Then, coding the data is done (Cresswell, 2009; Merriam, 1988). From the codes, developing a description and thematic analysis (Cresswell, 2009) and developing typologies, or themes (Merriam, 1988) were carried out. The following step is representing the findings in tables, graphs, and figures (Cresswell, 2009). Computer programs can be used in analysis (Cresswell, 2009) to code, store data (Merriam, 1988), etc. Some last steps are interpreting the findings (Cresswell, 2009), making inference and developing theory (Merriam, 1988).

This study somehow applied some of the suggested steps above to answer the research questions as follows:

1) How does PBL integrate four language skills?
2) What benefits and challenges do the students and the teacher gain?

a. Observation

The observations that were recorded were transcribed in the computer then printed out for easy analysis. Reviewing proposal was conducted some times

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before and whilst data reading and analysis. The initial reading was done while transcribing the observation records. After the transcriptions were printed out, the analysis was started.

The first thing to analyze was the answer for research question number one. The analysis comprised reading thoroughly and giving code '1' that meant answers for research question number one; 'L' or 'listening' that meant answers about listening; 'S' or speaking that meant answers about speaking; 'R' or 'reading' that meant answers about reading; and 'W' or 'writing' that meant answers about writing.

The second thing to analyze, then, was the answer for research question number two. In fact, there was nothing could be found to answer research question number two in the transcriptions. Nevertheless, the transcription could be used as supporting evidences.

b. Documents

The data from individual journal and group activity log were the first that were analyzed. The analysis was conducted simultaneously with the data collection. Once the individual journal and group activity log were collected. Data analysis was conducted involving reading and data reduction. After that, the useful data were put into computer. And then when other individual journal and group activity log were collected again, the same things were conducted. Then, the data were printed out. Initial reading was conducted afterwards to find out which research questions the data could answer. In fact, there was nothing to answer research question number one. Then, the analysis was continued with reading thoroughly and giving code '2' that meant answer for number two; 'B' that meant benefit; and 'C' that meant challenge.

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Field Notes were typed into computer. After the field notes had been printed out, the analysis was started including reading thoroughly, giving highlight, and giving code were applied. The codes were the same codes used in the transcription.

The lesson plans that had been printed were analyzed in the way transcriptions were analyzed.

The teacher's presentation hand out was analyzed by reading thoroughly to confirm the lesson plan.

c. Questionnaire

The questionnaires that were analyzed for answering research questions were about benefits and challenges. In analyzing the data from the questionnaires, first, reading thoroughly was carried out. While reading, highlighting and reducing some data were applied. Then, the useful data from each questionnaire were put together into computer so we have documentation of the questionnaires (see appendices). After the documentation of the questionnaires was printed out, data analysis was continued involving reading thoroughly and giving code and colour. Blue colour was used for answers of research question number one. Pink colour was used for answers of research question number two. While, code '1' that meant answers for research question number one; 'L' or 'listening' that meant answers about listening; 'S' or speaking that meant answers about speaking; 'R' or 'reading' that meant answers about reading; 'W' or 'writing' that meant answers about writing; '2' that meant answers number two; '""' (quotation) or underline was for sentences that were quoted, etc. After giving code and colour, reading thoroughly was still carried out while writing the findings to find common patterns or themes.

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After the above analysis of all instruments was accomplished, the report writing of the finding could be done by still reading all the analysis results and comparing one instrument to another to have triangulation data.

3.5 Validity

A study must be believed and trusted according to Merriam (1988) therefore validity of the study should be enhanced. According to Cresswell (2009) and Merriam (1988), one of strategies to ensure validity is triangulation. Validity of this study was enhanced with a data triangulation. Data were collected using several instruments namely observation, document analysis, and questionnaire. Thus, there are several sources of data. Then, examining the consistency of the data from different sources was carried out.

Furthermore, with regard to dependability, it is established by delivering in details the implementation of the PBL of this study in the previous subchapter.

3.6 Summary

In this chapter, research methodology has been explained so this study, within qualitative research, was a case study that at a state vocational school in Cimahi, Indonesia. It involved an EFL class of 35 eleventh graders. In collecting the data, this study employed triangulation of methods so there were observation, document analysis, and questionnaire. The procedures taken in this study were mainly based on Stoller's (n. d.) steps of implementation of PBL with some adaptation. In analyzing the data, steps proposed by Cresswell (2009) were mainly employed.