CHAPTER III
RESEARCH METHODOLOGY

This chapter described the procedure of the research in order to find out the answers of the two research questions previously stated in chapter one. It includes the research design, population and sample, variable, data resources, data collection procedure and data analysis.

3.1 Research Design

As this research is aimed at finding out whether the use of Edublog in the implementation of Project-based learning is effective to improve students' writing skill and what students' perceptions after using Edublog for writing project, this research employed a quantitative study. As stated by Gay, Mills, & Airasian (2009), a quantitative approach is the approach used to describe current conditions, investigates relations, and study of cause-effect phenomena. This quantitative approach focuses on testing objectives theories by examining the relationship among variable (Malik & Hamied, 2014). The rationale of choosing this design due to the fact that the intention of this study is to describe a phenomena of interest, which is the effectiveness and students' perception of project-based learning using Edublog for EFL writing.

3.2 Variable of the research

There were two variable involved in this research, they were independent and dependent variables (Nunan, 1992, p. 25). Independents is known as a major variable to be investigated, which is selected, manipulated and measured by the research (Nunan, 1992, hal. 25). On the other hand, dependent variable is known as variable upon which the independent variable is acting (Nunan, 1992, hal. 25).

Based on those ideas, since this research was about the effectiveness of using Edublog in project-based learning in EFL writing, so, the independent variable of this research is Project-based Learning using Edublog and the dependent variable is EFL writing.

3.2.1   Project-based learning using Edublog

Learning model in this research was a learning model that emphasizes on the project, which used Edublog as a media. It was expected that through the process of the project-based learning using Edublog, students were expected to be better on their writing. In practice, this project-based learning model implemented in three stages, namely preparation, the implementation and evaluation. Preparation relates to the activities in preparing students with the skills need for the project, the implementation relates to activities in conducting the project, while evaluation relates to activities of reviewing and giving feedback to students' project result. In order to evaluate this variables, the researchers also used the instrument in the form of questionnaire and interview.

3.2.2.   EFL writing achievement

The writing achievement in this study was conceived as writing competence which were summarized in KD, namely: analyze social function, the structure of the text, and linguistic elements of analytical exposition text about a topic. The level of writing ability was then measured through some indicators, namely: students are able to identify the structure of analytical exposition text, students are able to identify the language features of analytical exposition text, and students are able to write an analytical exposition text. The writing achievement was then measured using scoring rubric by Hughes (2003), which consists of aspects of grammar, vocabulary, mechanics, fluency, and organization.

3.3 Data resources

Data resources of this study refered to the kinds of information that researcher obtained on the subjects of the research (Fraenkel, Wallen, & Hyun, 2011). For the present research, the data resources used are:

3.3.1   Students' writing score

Since this study was aimed to find out the effectiveness of implementing Project-based learning using Edublog in students' writing, so a test was assumed to be necessary. A test in this study was an instrument and a set of techniques,

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procedure, or items that requires performance on the part of the test takes (Brown, 2004) .

A writing test in this study was useful to know the students' achievement in writing skill, before and after the treatment/ intervention. For that purpose, the researcher then conducted pre-test and post-test. Pre-test was given before the students got some activities in using Edublog, in order to know students' writing skill score at first. On the other hand, post-test was given after having some activities in using Edublog.

Hughey (1983, p. 140) states in evaluating the students' improvement in writing, the researcher would use scoring system for assesing students' writing. Based on that idea, after giving the writing test, the researcher then analyzed students' writing based on writing scoring rubric (see appendix 6). The rubric was categorized in some criteria: organization, content, grammar, punctuation, and quality of expression (Hughes, 2003). The cumulative score for students' writing ranging from 0-100 based on the five categories. This students' writing score was further used to indicate whether the intervention provided an enhancement in the ability to write or not.

3.3.2   Questionnaire

Questionnaire is a written collection of self-report questions to be answered by a selected group of research participants (Gay, Mills, & Airasian, 2009, p. 373). Questionnaire in this study was given to experimental group in order to find out the students' response toward the implementation of project-based learnig using Edublog in EFL writing. The items in questionnaire were made based on the frameworks by Hmelo-Silver, Duncan, & Chinn (2007) and van Aalst (2009) of research instruments that have been set.There were 20 items in total on the questionnaire, including three focus: on cognitive, affective and behavioral aspect. The type of questionnaire was likert scale with five options: Strongly agree, agree, undecided, disagree and strongly disagree. The questionnaire used in this study was adapted from Vesley, Bloom, & Sherlock, (2007); Klic & Gokdas (2014); Blackstone, Spiri, & Naganuma (2007).

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Questionnaire in this research allowed the researcher to collect large amounts of data (see Appendix 4).

3.3.3 Interview

The third instrument in this study was interview. Interview is known as a purposeful conversation, usually betwen two people but sometimes involving more (Morgan in Bogdan & Biklen, 1992). Interview in this research was assumed to be important for answering the second research question; "what students' response after using Edublog for their writing". Based on that, interview in this research was then used to get deep information from the students' experiences, perceptions, and motivation that is not possible described from questionnaires. The data in interview was effective way to collect students' response regarding to the topic discussed (Guba and Lincoln, 1981 as cited in Alwasilah, 2003).

This study adopted stratified sampling to ensure the representative presence of particular subgroups of the population under study (Mackey & Gass, 2005). In the initial phase of the interview, three students were selected. The criterion of selection was based on the average of writing score. This sample method seemed to be more representative because of the limited sample size.

The rationale for the interview was to elicit information relating to three major areas: students' perception toward Edublog as a language learning media, difficulties encountered, and solutions to those difficulties.

3.4 Subjects of the research

3.4.1 Population and Sample

Population is any group the researcher is trying to represent (Malik & Hamied, 2014). The population in this study was a vocational school in Cimahi. The basic reason the researcher chose vocational school for this study because the allocated time for vocational students to learn English was very limited, therefore, the students need alternative media to improve their writing. Another reason

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because the facilities of teaching and learning process in this school is more complete than the other school. Each classroom is provided some digital technologies, such as LCD, LCD screen and speaker. Moreover, this school is also provided the students with wireless, which is very helpful for the students to access internet for finding their learning resources.

This study was conducted on teaching-learning process by exploiting the use of Edublog in project-based learning at the eleventh grade of KP (Kontrol Proses) class. Samples in this study consisted of two classes namely class KP 1 as control class and KP 2 as experimental class, with total number of students 60 students. The researcher chose this class as the subject of the research because the class has been provided with understanding of blog for few meetings. The meetings were basically about the ways to create the blog and the ways to access blog. In other words, this class have good knowledge about blog. Therefore, that understanding was assumed to be helpful for the researcher to do this research well.

3.5 Data collection procedure

There were two research questions in this study, namely, does the implementation of Project-based learning using Edublog improve students' writing skill and what students response after conducting the project with Edublog. Data which are needed in answering the first question was tests, while the data needed to answer the second question was questionnaire and interview.

3.5.1. Carrying out tests

In the study, the measurement of learning outcomes needs to be conducted to determine whether a study has reached the objectives or not. Based on that purpose, the study gave the test for control and experimental class, in order to compare the results obtained. There were two tests that were given, namely pre-test and post-test:

a. Pre-test

The data were collected through pre-test in both experimental and control classes, in order to know the difference between the two classes that taught by

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project-based learning using Edublog and conventional learning method. Pre-test was held in both classes to measure the students' writing achievement before the treatment.

b. Post-test

After the researcher applied project-based learning using Edublog in EFL writing, then the post-test were given. After that, the result of the test was scored and calculated by using SPSS 21 for Windows.

The form of test in the study was writing test. In this case, students were asked to make a text based on the topic being discussed. Before the test was conducted, the researcher firstly looked at the feasibility of the test. As Sugiyono (2005) mentions, there are several steps test instruments are as follows:

1. Consulting the instruments with the supervisor to see the validity of the theoretical.

2. Adjusting the instrument with mentors outside lecturers, such as teachers in the research site.

3. Testing the instrument on learners

In the study, the test was done by constructing the writing topic with the course's objective. As mentioned in syllabus, the basic competence of teaching writing English for the eleventh grade of KP class based on Standard of Content (Standar Isi) is analyzing social function, the structure of the text, and linguistic elements of analytical exposition, according to the context of use of the text. Secondly, understanding the meaning in text analytical exposition about the hot topic discussed in common. Based on those ideas, writing activities in this research was making an analytical exposition text about hot topic discussed in common. Since the writing activities fulfilled the indicators of teaching writing for the eleventh grade of KP class, it can be concluded that the test items were valid. Additionally, the instrument in this writing activities were discussed to English teachers and supervisors in advance, in order to validate the instruments and make it sure that the instruments used has represented the curriculum and syllabus.

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3.5.2 Questionnaire

Questionnaire was useful to know about the students' responses toward the influence of Edublog media for their writing project. In this research, each of students in the class involved as participants, who required to answer the questionnaires about their response about the use of Edublog. The questionnaire was distributed after implementing the experiment research, the researcher applied Likert Scale in questionnaires as a measure to check the level of individual argument about classroom activities. Likert scale used in this research to measure attitudes, opinions, and perceptions of a person or a group of social phenomenon (Sugiyono, 2005).

In questionnnaire, students provided an answer by giving sign for each coloumn that has been provided (Kountur, 2007). The data in this questionnaire would suggested students' perception about the use of Edublog as a media in writing project.
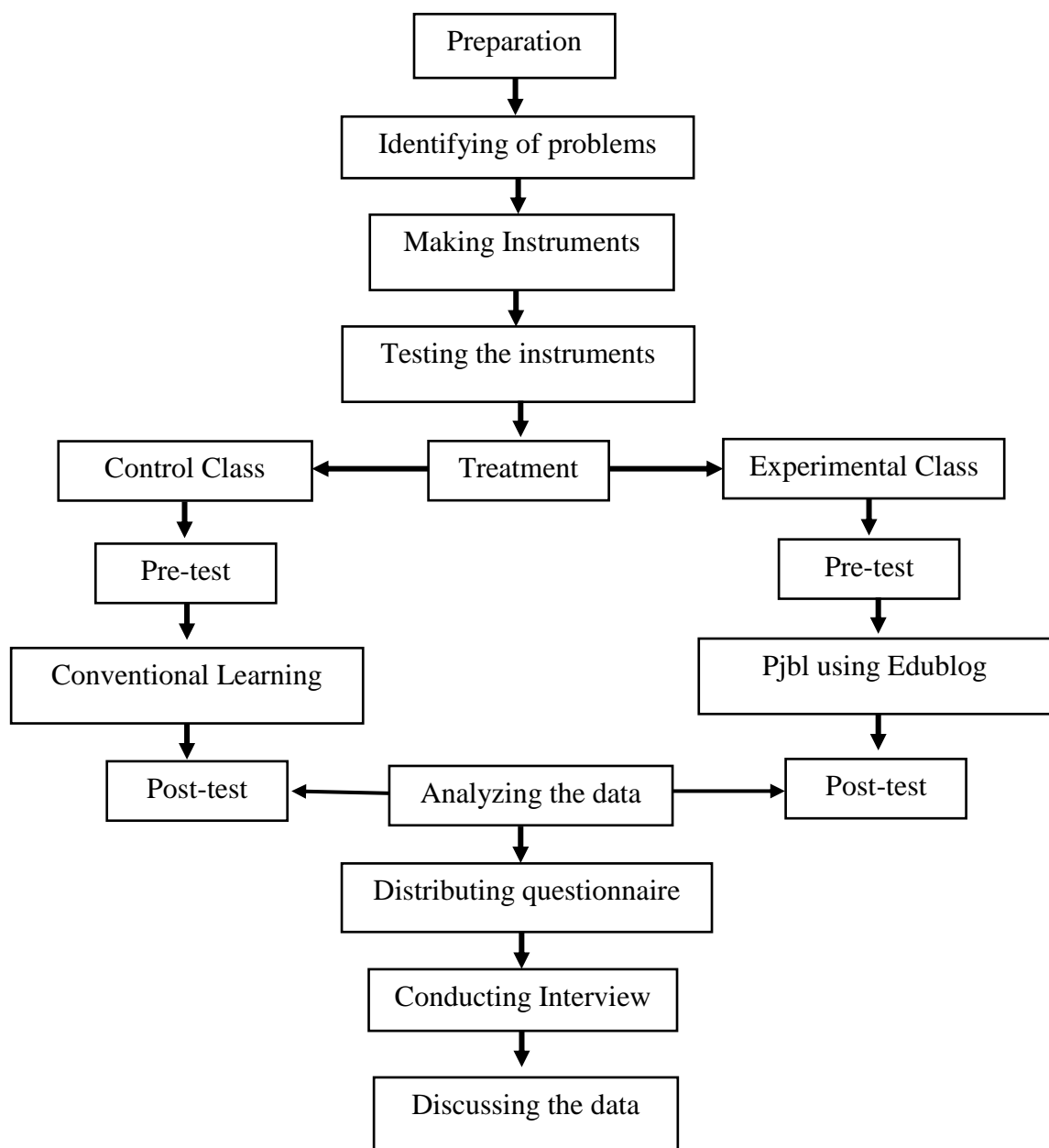
3.5.3 Interview

In this research, the researcher also conducted an interview for some students. In interview, the researcher asked some questions and recorded the answers from only one participant at that time (Cresswell, 2008). The participants were given opportunities to speak up their ideas or opinions frankly. The interview was recorded by a sound recorder and the data were transcribed. The researcher used semi-structure interview, which enable the researcher to know specific information which can be compared and contrasted with information gained in other interview (Dawson, 2009). The questions in interview were about their response about the impact of using Edublog as an alternative for applying project-based learning in EFL Writing Classroom (Appendix 8).Those items were prepared beforehand.

The interview in this study was done once, which was after the research. The researcher interviewed three students for three different categories, regarding to the use of Edublog in writing for writing project. Interview in this study was done one-by-one in order to gain students' expression, thoughts, feelings,

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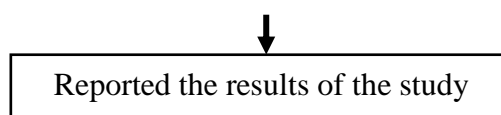
opinions, or perspective on the topic being studied, (Merriam, 1988: 76). The result of interview in this research was about students' deep response after using Edublog in their project (see Appendix 8).

3.6 Procedure Detail

The procedure of research in this study was divided into three general phases, namely, the preparation phase, the implementation phase and evaluation phase. The details, can be illustrated in the figure below:

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                               │
                               ▼
                    ┌─────────────────────┐
                    │Identifying of problems│
                    └─────────────────────┘
                               │
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                    ┌─────────────────────┐
                    │  Making Instruments │
                    └─────────────────────┘
                               │
                               ▼
                    ┌─────────────────────┐
                    │Testing the instruments│
                    └─────────────────────┘
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┌──────────────┐    ┌─────────────┐    ┌──────────────────┐
│ Control Class│◄───│  Treatment  │───►│Experimental Class│
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  ┌─────────┐                            ┌─────────┐
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│Conventional Learning│               │ Pjbl using Edublog│
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  ┌─────────┐    ┌─────────────────┐    ┌─────────┐
  │Post-test│◄───│Analyzing the data│───►│Post-test│
  └─────────┘    └─────────────────┘    └─────────┘
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                │Distributing questionnaire│
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                │Conducting Interview│
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│  Reported the results of the study  │
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Figure 10. Research Procedure

a. Preparation phase

The researcher firstly found what the problem to be investigated. In formulating the problem, the researcher created the problem based on the issues to be studied. After that, the researcher conducted a preliminary study. This activity was done in order to gather information and research instruments, which were related to the issues to be investigated. After that, the researcher then test the instrument. The final step in this preparation phase was to determine the sample of the study.

a. The implementation stage

In this stage, there were some activities were implemented. Firstly, collecting data that were available from classes. This activity was based on the guidelines that have been prepared in the study design. Data collected through research activities as basis for testing the hypothesis. After that, the researchers analyzed data. The data analysis was conducted after all the data was obtained.

b. The publication stage

In this stage, the researcher reported the dsicussion of the study. This stage was the final step in this study.

3.7 Integration of Project-based learning platform into Edublog

In this part, the researcher implemented Project-based learning in EFL writing. Stages of Project-based learning using Edublog that were be applied by the researchers were as follows:

3.7.1 Task Planning

Task planning was basic component to be implemented project-based learning in the classroom. In this step, the researcher began with an explanation of

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the materials to be studied, classroom activities that would be done for some upcoming meetings, and followed by project assignment instructions and the provision of time for project. These activities were intended to prepare students with the skill needed for the project. Further steps of this task planning was as follows:

Firstly, the researcher and students determined the project, such as choosing a theme/ topic for product (a report of observation / investigation) and emphasized the originality of the product to be produced. The determination of product in this study was adapted to the task criteria, taking account into the level of students' ability, learning resources and tools that were available in school and classroom.

Secondly, the researcher and students designed the steps completion of the project from start to finish. In this activity, students were asked to identify parts of the product to be produced, and discussed the steps and techniques to resolve problems that might be occured until the final product achieved.

Thirdly, the researcher and students then developed project implementation schedule, which was drawing the stages of project implementation, while still considering to some complex steps that might be found, such as students' level of ability, provision time for project, and so oon.

3.7.2 Investigation

In this step, the students started to conduct their project. Students went to the things that could support their project and conduct some investigations for the topic discussion. In this step, students were asked to complete projects, which facilitated and monitored by the teacher. Students were allowed to search or collect data/ material inside or outside the classroom, they shared ideas with their friends, go to library or access internet for finding the data needed, in accordance to researcher's instruction and permission.

3.7.3 Reviewing and evaluating

Review and monitoring in this research were carried out by assessing the students' work. That activities was aimed to determine whether the purpose of the implementation of project has been achieved or not. Moreover, review and

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monitoring in this study was aimed to maximize the use Edublog in Project-based learning in this study.

3.7.4 Project Presentation

Teacher asked students to publish the works after editing them. In this step, researcher, how to publish the works in blog, and encouraged them to post their comments on each others' work and share their experience through posting their comments. Moreover, the researcher in this tep also used to post comments on the postings of all the experimental group learners.

Based on the explanation above, the implementation of this study can be illustrated in the schematic below.
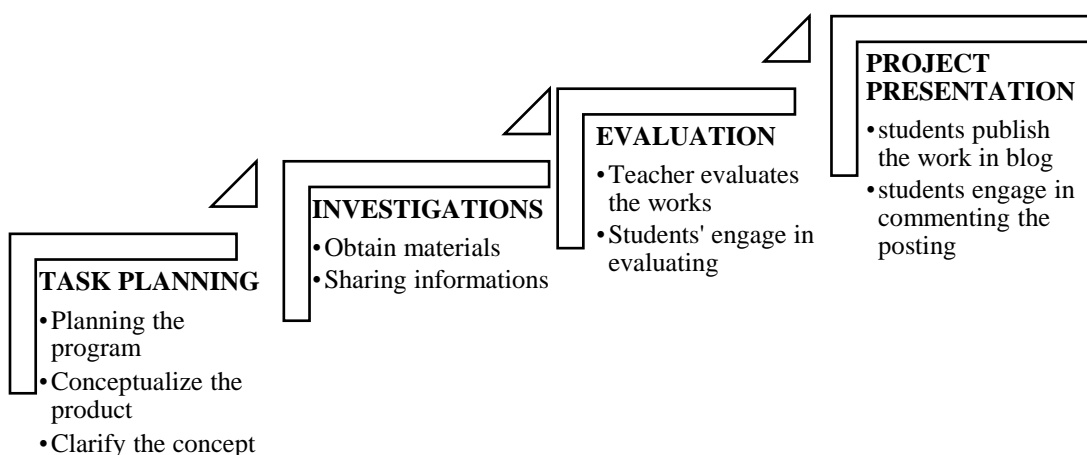
TASK PLANNING
• Planning the program
• Conceptualize the product
• Clarify the concept

INVESTIGATIONS
• Obtain materials
• Sharing informations

EVALUATION
• Teacher evaluates the works
• Students' engage in evaluating

PROJECT PRESENTATION
• students publish the work in blog
• students engage in commenting the posting

Figure 11. Integration of PjBL platform into Edublog

3.8 Data Analysis

Data analysis is the last stage before drawing any conclusions. In this research, data analysis is divided into two parts; quantitative and qualitative. The steps were described below:

3.8.1 Analysis data from tests

After collecting the data, pre-test and post-test from the experimental group and control group, then the researcher measured the score differences from pre-test and post-test of experimental group and control group by the statistical calculation.

a. **Normality distribution test**

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Normality test aims to determine whether the research data obtained were in normal distribution or not (Cresswell, 2008; Fraenkel, Wallen, & Hyun, 2011). Normality test used in this study were calculated with the *Kolmogorov-Smirnov* in SPSS 21 for windows. Hypothesis was used as follows:

- Ho = the score of the experimental and the control group are normally distributed
- H1 = the score of the experimental and the control group are not normally distributed

By using 5% level of significance (α), the criteria of normality test is Ho is rejected if the significance value (Sig.) < 0.05, meanwhile, if significance value (Sig.) > 0.05, Ho is accepted

b. Homogeneity test

Homogeneity test is intended to determine whether the data in both experimental and control classes have a homogeneous variance or not (Cresswell, 2008; Fraenkel, Wallen, & Hyun, 2011). Homogeneity test to be performed in this study was *Levene's Statistic* in SPSS 21 for windows, with the level of sig. (α) = 0.05. The hypothesis used in testing homogeneity pre-test data as follows:

- Ho = Variance in the control group and the experiment of the same (homogeneous)
- H1: The variance in the control group and the experiment is not the same (not homogeneous)

The variance homogeneity test used was Levene Test at 5% level of significance (α). The criteria of the test are Ho is rejected if the significance value (Sig.) < 0.05. Meanwhile, if significance value (Sig.) > 0.05, Ho is accepted.

c. T-test Computation

This data analysis used t-test. T-test used in this analyzing data is useful to compared means of two groups; experimental and control classes. The calculation was made to find out whether the implementation of project-based learning using Edublog in students' writing skill has a significant difference between two means

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(pre-test and post-test) in teaching or not. The procedures of data analysis in post-test were exactly same as pre-test data analysis. The data in test were calculated quantitatively, by using independent t-test in SPSS 21 for Windows.

3.8.2 Analysis data from Questionnaire

After analyzed data from the experimental research, the researcher then came to questionnaire data analysis. The data in questionnaire were calculated quantitatively then described descriptively. Through the data in questionnaire, the researcher was able to see the whole class response regarding to the implementation of project-based learning using Edublog for students' writing.

3.8.3 Analysis data from Interview

Interview data in this research were analyzed descriptively, by relating the answer in interview to some theories mentioned in this study. Those descriptions were functioned as a way to summarize data and to present the findings of the investigation discussed in this study.

In the study, the analysis data from interview involved data reduction, data display and conclusion drawing (Miles & Huberman, 1984). Data reduction refers to the process of selecting, focusing, simplifying, abstracting and transforming the data that appear in written transcriptions, (Miles & Huberman, 1984). This occurs continuously throughout the life of the research project. The researcher then interpreted the data as a ways to make the sense of the data. The interpretation in qualitative research was done as a way the researcher step back and forms some larger meaning about the phenomenon based on personal views, comparisons with past studies, or both (Cresswell, 2008). The interpretations of the data in this study involved the review of the major findings and how the research questions were answered, the reflection of the researcher about the meaning of the data, and the personal views compared and contrasted with the literature. The results were functioned to support, modify, or reject the underlying theory.

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