CHAPTER III

RESEARCH METHOD

In this chapter, the researcher would like to present about the methodology of study. This chapter consists of researcher design, population and sample, instrument, data collection, and data analysis.

3.1 Research Design

Research design is a method how to analyze and sum up the data which is aimed as the purpose of the research. Research design is a method which has some steps successively so that the valid data can be collected (Creswell, 2014). A research can succeed if the researcher uses the appropriate research design. If the research design is inappropriate, it will influence the internal validity of the research.

As the main objective of this research is to investigate whether there is any significant correlation between SDL and students' achievement through PjBL, then the design is the quantitative one. Since it attempts to see the correlation of both variables, this study will be categorized into correlation study. Butler (1985) stated that correlation analysis is a statistic technique which aims to find relationship with correlation degree between two variables.

According to the explanation above, this study uses correlation study as the research design. It causes that the objective of the study is to find out the correlation between both independent and dependent variable. The independent variable of this study is SDL and the dependent variable is students' achievement.

3.2 Population and Sample

The populations of this study are the 6th semester students in English Education Department at Muhammadiyah University of Gresik. There are 29 students.

Hughes (2002) stated that population is the group of people which the researcher is going to generalize the finding of the study. Then, Most study need sampling method to represent the large population to be generalized. But in some cases, it will not be necessary to take sample from the small population. The researcher may be allowed to take the whole of population since the population is not large enough. Sampling the whole of population which has quite small amount of population is called *census* (Muijs, 2004: 38).

This study only has small population so the researcher uses the whole of population as the participant of this study. While the researcher also decides to conduct this study in "Curriculum and Material Development for ESP" class because it uses PjBL as the learning strategy that supports to examine this research.

3.3 Data Collection

Collecting the data is needed by the researcher to find out the data which affects toward the result of the study. In doing the data collection, the researcher needs the instruments and does some systematic procedures which are going to explain in the following.

3.3.1 Instrument

Instrument is one of tools in the study to help the researcher to collect the data. The researcher needs to use certain instrument which is suitable for supporting the analysis of the data in order to reach the objective of the study (Zaza, Linda, and Peter, 2000). In this study, the researcher uses questionnaire and document as the instruments.

3.3.1.1 Questionnaire

The first instrument that the researcher uses is questionnaire. The researcher adapted SDLRS questionnaire as a tool to measure students' SDL which is developed by Guglielmino in 1978. Three areas of SDL are attitudes, abilities, and characteristics which are defined into eight factors in it. Those eight factors are openness to learning opportunities, self-concept as an effective learner, initiative and independence in learning, self-responsibility in learning, love of learning, creativity, future orientation, and self-confident in abilities and skills in learning. There are 58 items which consist of 41 positively stated items and 17 negatively stated items. It uses 5-point Likert scale with the descriptions as "5 = almost never", "4 = rarely", "3 = sometimes", "2 = usually", and "1 = almost always". The scale can help the researcher to read whether the student has high SDL or low SDL.

To identify whether the student has high or low SDL skill, the researcher will take the score range of the students' answers. As the explanation before that there are 58 items and each item has point from 1 until 5 so the minimum score is

58 and the maximum score is 290. From the score, the researcher can know the students' level of SDL by looking at the table of scoring range:

Scoring range	Level of SDL
58 – 201	Low SDL level
202 – 226	Average SDL level
227 – 290	High SDL level

Adopted from Guglielmino (1991)

Table 3.3.1.1.1 The Scoring Range

3.3.1.2 Document

The last instrument is document. The researcher does not use any test but the researcher needs the students' score for knowing the students' achievement. The score is taken by the lecturer who teaches "Curriculum and Material Development for ESP". Furthermore, the score will determine the students' achievement and will be used to examine whether correlate with SLD.

3.3.2 The Procedure of Collecting Data

In order to reach the research objective, the researcher attempts to do these procedures of collecting data to support the data analysis. There are some procedures to collecting the data:

a. The researcher prepares the questionnaire by adapting SDLRS questionnaire which was developed by Guglielmino (1978).

b. The researcher is going to come to the class and ask the students to answer the questionnaires honestly to determine their SDL.

c. The researcher is going to analyze the result of the questionnaire by using Five-point Likert scale to determine the students' score in SDLRS questionnaire.

d. The researcher is going to meet the lecturer of "Curriculum and Material Development for ESP" to ask permission toward asking the students' score in 6th semester of English Education Department at Muhammadiyah University of Gresik.

e. The researcher is going to insert the data into SPSS software then analyze the correlation between SDL and students' achievement of the 6th semester in English Education Department at Muhammadiyah University of Gresik.

3.4 Data Analysis

The researcher needs variables of both students' SDL and achievement. The variable of students' SDL is gotten from the score of SDLRS questionnaire and students' achievement is gotten from the score of Curriculum and Material Development for ESP in 6th semester.

There are three types of data in educational research. Those are nominal, ordinal, and continuous (interval or ratio). In this study, the forms of data are ordinal and ratio data. Ordinal data refers to quantities that have a natural order, it can be seen from the rating Likert scales, while ratio data refers to the absolute zero, it means zero score also has strong meaning (Sauro, 2010). The ordinal data comes from the score of the SDLRS questionnaire and the ratio data comes from the score of students' achievement.

To determine the correlation between SDL and students' achievement, the researcher uses Spearman's rho correlation coefficient. Such Muijs (2004: 156) stated that Spearman's rho correlation coefficient is the appropriate one to measure the correlation between the independent variables with ordinal data and the dependent variable with ratio data. The correlation coefficients are between (-1) and (+1). (-1) indicates a perfect negative correlation, (+1) indicates a perfect positive correlation, and (0) indicates no correlation. In the end, the researcher will test the hypothesis whether the null hypothesis is rejected or not.

Carver (1978) stated that in educational research, the 5% (0.05) significance level is used as the standard of rejection. So if the significance value is higher than 5% (0.05) level, the null hypothesis (Ho) cannot be rejected or there is no significant correlation between both variables. Then if the significance value is lower than 5% (0.05) level, the null hypothesis (Ho) can be rejected or there is significant correlation between both variables (Butler, 1985: 71-74). By looking to the statistic conclusions, the researcher will get the result whether the null hypothesis can be rejected or not.