

CHAPTER III

RESEARCH METHODOLOGY

This chapter covers the elaboration of where the research is taking place, who are the research participants, research hypotheses, what is the research design, how to collect the data, and how to analyze the data.

3.1 Site and Participants of the Research

3.1.1 Site of the research

This research was conducted in one of the senior high schools in Kuningan. Kuningan is a small regency located near the provincial border between West Java and Central Java. Also, the school is not located in the main part of the regency. This place was considered to be suited for the research as this research was aimed to find out whether students' engagement of students in rural area of Indonesia can be improved through the implementation of autonomy-supportive motivating style conducted by the teacher.

3.1.2 Participants of the research

The participants of this research were eleventh grade students of an English *peminatan* class in a senior high school in Kuningan. There are approximately 33 students in the class. This class was assigned as an experimental group. The amount of sample is sufficient, it is about the minimum amount of sample that suggested by Fraenkel, Wallen, and Hyun (2012) which is 30 individuals in each group.

There were some considerations in choosing the aforementioned participants. First, the senior high school chosen in this research was the researcher's alma mater. Researcher was familiar with its situation and condition and had a close relationship with the school staffs. Moreover, the researcher was also familiar

with students' condition when the researcher was still schooling there and throughout the years after graduated since there was a regular communication between the researcher and school staffs.

Second, since the school is implementing 2013 curriculum where English subject only taught once a week in the main classes, *peminatan* classes were chosen to improve the exposure of research intervention because English subject is taught twice a week, 90 minutes for each.

3.2 Hypotheses

Creswell (2012) stated that hypothesis is a predictive statement of the research outcome that contains the relationship among variables. Fraenkel (2012) also stated the same. Since this research is a quantitative research, hypothesis is necessary to be stated. This research used null hypothesis. Null hypothesis is used to test that there is no differences between variables (Creswell, 2012). The formula of null hypothesis for this research is

$$H_0: \mu \text{ pretest} = \mu \text{ post-test}$$

The formula above means that there is no difference of students' engagement before and after autonomy-supportive motivating style has been implemented. If the formula cannot be rejected, it means that the research is not working.

3.3 Research Design

$$O_1 \gg X \gg O_2$$

Based on the aforementioned formulated hypotheses, this research used pre-experimental research design (Nunan, 1992), or one-group pretest-posttest design in Johnson and Christensen (2008) and categorized as one of the quasi-experimental research design models in Shadish, Cook, and Campbell (2002). Pre-experimental research design is a research design that administers pretest

before the treatment and post-test after the treatment, however it only has a experimental group and lacks of control group (Nunan, 1992). Although pre-experimental research design has a quite high potential threats to internal validity of a research (Johnson & Christensen, 2008), this design was considered to be suitable because there was no previous data on the research concept and what it tries to find in site of the research (Thyer, 2012) and it still does provide the data on what happens between pretest and post-test (Johnson & Christensen, 2008). The illustration on how the research would be conducted is illustrated above. Pretest (O₁) would be administered first to gather the data of students' engagement before the intervention (X) was conducted and after the intervention was conducted, post-test would be administered to gather the data of students' engagement after the intervention. There are some reasons why the research design was chosen. First, the implementation of autonomy-supportive motivating style to improve students' engagement has not been conducted in Indonesia, especially in its rural area, it is a new concept that needs to be tested first before a full long-term research is conducted in the future to avoid unnecessary obstacles and miscalculated results of the research, considering whether this concept is worthy for further investigation or not. Second, the limited time to conduct the research itself. Third, the limited number of participants that researcher had access to. Lastly, the fourth, the research tried to grasp the data in its real condition while applying the treatment on independent variable. There were two variables that were employed in this research, autonomy-supportive motivating style that would be conducted by teacher as independent variable and student engagement as dependent variable.

In order to implement autonomy-supportive motivating style in the experimental group, researcher studied and adapted theory of students' engagement; SDT; and how to adapt autonomy-supportive motivational style and become autonomy-supportive teacher. Several articles and supporting studies on those topics (e.g. Assor, Kaplan, & Roth, 2002; Reeve, 2009; Reeve et al., 2004; Reeve & Jang, 2006; Reeve & Halusic, 2009; Skinner & Belmont, 1993) were used in order to do that. After that, the researcher conducted the intervention as an English teacher by infusing the aforementioned materials into teaching activities

(e.g. how teacher responds to students questions, how teacher responds to negative behaviors, how teacher gives instructions in the classroom, how teacher provides explanatory rationales of teaching instructions or any behaviors done by the teacher) in the classroom for 8 session in four weeks. There were no step-by-step procedures since every teacher behaviors were mostly spontaneous as the responds to learning materials that needed to be taught and students' actions and feedbacks.

3.4 Data Collection Techniques

3.4.1 Instrumentation

There are three instrumentations that were used in this research, they were attitude scales in a form of engagement measurement test that would be administered in the pretest and post-test as the main instrument; behavior rating sheet to observe students behaviors during classroom activities as the supportive instrument; and teacher's field notes as a detailed source of information also as the supportive instrument.

3.4.1.1 Engagement measurement test

A pretest by using this instrumentation conducted before an intervention was applied in form of the application of autonomy-supportive motivating style. In the pretest, data of students' engagement based on their prior experiences with their current English teacher was collected. The data collected before the intervention would be used later as a base comparison with the data collected after the intervention in the post-test. In the last class session (week 4, 8th session), the post-test was conducted to collect the data after the intervention. By comparing those data, the effect of autonomy-supportive motivating style towards students' engagement could be observed.

Attitude scale in the form of engagement measurement test is used to collect data that can only be done by assessing research subjects (Fraenkel et al., 2012), in this research the subjects are students. There are two kinds of instrumentation

that are suggested to measure student engagement (Fredricks et al., 2004), they are observation and self-report. Although there was a behavioral component that could be measured through observation in this research, self-report in form of attitude scale was preferred to measure all of student engagement components since observation had one potential problem of limiting the information of quality of effort, participation, or thinking of behavioral component (Fredricks et al., 2004). Nevertheless, behavior rating sheet was also used in this research as a supportive instrument.

The attitude scale was created based on engagement taxonomy that suggested by Christenson and Anderson (2002) which consisted of four components namely academic, behavior, cognitive, and affective engagement. Although Finn and Zimmer (2012) suggested newer engagement classification that also consisted four components, researcher chose the classification of Christenson and Anderson (2002) since it had a more clear classification.

There are 27 items in engagement measurement test to measure academic (8 items), behavior (7 items), cognitive (8 items), and affective (4 items) engagement in four Likert scale to avoid student's ambiguous neutral answer. The Likert scale used in the test consists of 4 categories and scored as follows: Very Agree = 4; Agree = 3; Disagree = 2; and Very Disagree = 1. Some items were reversed, where the negative respond to the item would get the highest score (4) and positive respond would get the lowest score (1). Although it is controversial among researcher to use the results of Likert scale and convert them into scores to further analyzed by using parametric tests, this practice has been proved possible to be done without fear of coming into a wrong conclusion (Jamieson, 2004; Murray, 2013; Norman, 2010).

3.4.1.2 Behavior rating sheet

Behavior rating sheet is used to collect data of engagement from students during classroom activities through observation. The form and rated items of the sheet were replication from student's engagement observation rating sheet that was used by Reeve et al. (2004). The function of rating sheet is to judge

individual's behavior (Fraenkel et al., 2012), in this research it was particularly used to judge the students' engagement which reflected in their behaviors in the classroom. There are five items in rating sheet to rate student's attention, effort, verbal participation, persistence, and voice tone in seven point scale, from one which indicated no presence of the behaviors at all to seven which indicated the presence of the behaviors fully shown in the classroom. Those items reflect four common components of engagement which suggested by Christenson and Anderson (2002). The sheet is used to record the flow of rated items throughout the classroom session from the beginning to the end, divided into 6 periods of time, 15 minutes for each. Since it is quite difficult to assess students' behavior while teaching, researcher re-observed the classroom by using videos that recorded throughout the sessions to assess students' behavior in the classroom.

3.4.1.3 Teacher's field notes

Although observational instrument such as teacher's field notes considered to be one of the qualitative method data collectors (Creswell, 2012), this instrument also administered as one of the supportive instruments in this research to give detailed information on what happened in the classroom with the highlight on teacher's implementation of autonomy-supportive motivating style. In administering this instrument, researcher took a role as participant observer as the researcher took part in classroom activities as teacher who implemented autonomy-supportive motivating style and took notes based on what he did by using the help of videos that recorded throughout the sessions to assess students' behavior in the classroom.

3.4.2 Procedure

In a week before the intervention program was started, the class was given the engagement measurement test in the end of the session in order to measure the pretest data of student engagement on four components, academic, behavior, cognitive, and affective.

The total score from each student were added to find its total value. This total value would be used as engagement pretest score that would be analyzed further. After that, the intervention was started in the next week.

During the 8 sessions of intervention, researcher who took a role as an English teacher taught the students the English materials that have been planned to be taught by school without any change while infusing autonomy-supportive motivating style to his conducted teaching activities. Eight videos were took during this time to record classroom activities that happened during this time, each video for each session. These videos were took as the source data for helping to administer behavior rating sheet and teacher's field notes.

In the last class session (week 4, 8th session), the intervention was done and the engagement measurement test was given in another session after that. The result would be processed with the same procedure that was used to collect the pretest score in order to get the engagement post-test score.

3.5 Data Analysis Techniques

$$t_{obt} = \frac{M_D}{\sqrt{\frac{n \sum D^2 - (\sum D)^2}{n(n-1)}}}$$

Using dependent non-directional t-test, which the formula is drawn above, pretest and post-test results of student's engagement were calculated. Significance level of .05 was used in this calculation. In educational research, .05 level of significance is common to be used to reject null hypotheses (Kranzler & Moursund, 1999). The final results would be used to accept or reject the suggested hypotheses. Computer program of IBM Statistical Product and Service Solution (SPSS) 23.0 for Windows was used to run the data analysis.

3.6 Validity and Reliability

Validity refers to the ability of questions to grasp what they are intended to measure (Johnson & Christensen, 2008). Meanwhile, reliability refers to the internal consistency of a set of test score (Johnson & Christensen, 2008). Validity and reliability test assure that the engagement measurement test questions are able to do their function in a right way by grasping the intended measurement of concept and having a consistent score while measuring the intended concept. In this research, the validity and reliability test were administered by using cronbach's alpha in computer program of IBM Statistical Product and Service Solution (SPSS) 23.0 for Windows.

The coefficient alpha that greater or equal to .70 is needed to say that the instrument is valid and reliable (Johnson & Christensen, 2008). Since cronbach's alpha is intended to measure unidimensional construct (Johnson & Christensen, 2008) and the engagement measurement test that was used in this research is measuring four constructs of engagement (academic, behavioral, cognitive, and affective), the cronbach's alpha would measure the test items from each construct separately.

3.7 Concluding Remark

This chapter has elaborated where the research is taken place, who are the participants, research hypotheses, the method and procedure used in the research, how to collect the data, and how the collected data is analyzed. In the next chapter, the collected data and its analysis will be discussed.