

## **Chapter Three**

### **Research Methodology**

This chapter discusses the methodology used in this study. There are six sections explained in this chapter three namely research design, research setting, research population, sample, and sampling technique, data gathering method, data collecting procedure, and data analysis. Several theories are also included in this chapter to support the research methodology.

#### **Research Design**

The researcher should seek the answer by studying the tendency of the people or the respondents. Creswell (2012) stated that the characteristic of quantitative research is to identify a research problem based on tendency. This study intended to see the indication of the respondents in correlation of using school regulations as the tools to gain students discipline. From the title, the researcher used descriptive quantitative method because there were two variables included in this study.

Besides, this study adopted correlational design because the title had two variables. According to Creswell (2012), correlational design is used to describe and measure the degree of association (or relationship) between two or more variables or sets of scores. There were two variables in this study. The first variable was the enforcement of school regulations in the school, and the second variable was the students' discipline in the school. To find out the correlation between two variables, the researcher used explanatory correlation as research design in this study. Creswell (2012) asserted that an explanatory research design is correlational design in which the researcher is interested in the extent to which two variables (or more) co-vary, that is, where changes in one variable are reflected by changes in the other.

## **Research Setting**

This study was conducted in a vocational school in Yogyakarta. This school is one of the Senior high School level. The researcher chose Vocational School to find the data because the researcher have taught and doing an observation in this school during teaching practice. The other reason of choosing this school was that because from the researcher's experience, the school regulations enforcement and the students' discipline were very low. Then, researcher intended to know whether there is a correlation between school regulation and students' discipline or not. The researcher conducted the research data around two months. Besides, the researcher got the data on the second month of the research. After getting the data from the students, the data were analyzed.

## **Research Population, Sample, and Sampling Technique**

In this part, the researcher explains about the populations, the target populations, total of target populations, and sample and sampling technique. For more detailed explanation, each part is explained in the following paragraphs.

### **Research Population**

The population of this study was the students of vocational school in eleventh grade. There were eleven classes for grade eleven. The eleven classes were further divided in to seven majors namely Seni Lukis (painting), Patung (sculpting), DKV (design), Animasi (animation), Kriya Kayu (woodworking), Kriya Keramik (pottery), and Kriya tekstil (textile). The researcher obtained the data from Vocational School in Yogyakarta and chose the students in grade eleven to be the respondents of this study because the students in grade eleventh (XI) were the students who had enough experience in facing issues about the school regulation enforcement at school and also about their discipline. Also, they knew the regulation and the consequences of punishment.

Moreover, the researcher found that the students in grade eleven were the students who had studied at school for a year. From the statement mentioned, the students had already known their school well. In addition, the researcher had taught the students, and the researcher had observed the students while teaching at the school. From the observation, the researcher found that the students were indisciplined at school. Besides, there were eleven classes in eleventh grade at Vocational School in Yogyakarta, and a number of eleventh grade students were 223 students.

### **Research Sample**

The population sample of this study were eleventh grade students in Animasi (*Animation*) class 1 and 2, DKV (design) class 1, Seni Lukis (painting) class 1 and 2. The researcher conducted the study at those classes by taking randomized research samples through several considerations. Besides, there were 5 classes chosen by using lottery, and there were 29 students in each class. Based on the tables on random sizes, if the total populations were 223 students, and the confidence interval was 5%. Thus, the populations of this research included 132 students.

### **Sampling Technique**

This research utilized cluster sampling as the sampling technique. Cohen, Manion and Morrison (2011) stated that cluster sampling can select specific number of the schools and test all the students in those selected school. In this study, the population was chosen by voting or lottery. Then, the researcher prepared all the name of the classes and did the lottery to choose the class to be the sample.

### **Research Instrument**

In this research, questionnaire was used as an instrument to collect the data of this research. Besides, the questionnaires provided a numerical based and date. By using

questionnaire, the researcher got a numerical data easily because there were no bias data regarding the answer of the respondents. According to Wilson and Mclean (1994), questionnaires provide structured and numerical data, and the researcher will use a structured questionnaire to gather the data using structured questionnaire. Then, the questionnaires are organized.

In the types of the responses in structured questionnaire, the researcher used dichotomous question and scale. The questions used by the researcher of dichotomous questions were name, gender, and the class. Cohen et al (2011) the dichotomous question is useful since it compels respondents to come of the fence on an issue, and it provides clear unequivocal response. That way, it is possible for the respondents to answer the questionnaire quickly. In addition, the researcher also used scale type for the questions of questionnaire. Cohen et al (2011), scales are useful devices for researcher as they build in degree of sensitivity and differentiation. Therefore, the types of responses of the questionnaire about school regulation enforcement and students' discipline are shown on table below.

Table 1

*Types of Responses*

|                               |                  |
|-------------------------------|------------------|
| School Regulation Enforcement |                  |
| (1) Never                     | → Tidak Pernah   |
| (2) Rarely                    | → Jarang         |
| (3) Sometimes                 | → Kadang- kadang |
| (4) Always                    | → Selalu         |

Here are the scores for each answer shown in the following table.

Table 2

*Scores for Each Answer: School Regulation Enforcement and Students' Discipline*

| <b>Answer Categories</b> | <b>S</b> | <b>KK</b> | <b>J</b> | <b>TP</b> |
|--------------------------|----------|-----------|----------|-----------|
| Positive (+)             | 4        | 3         | 2        | 1         |
| Negative (-)             | 1        | 2         | 3        | 4         |

In addition, there were two variables of this research, and both of them used the questionnaires as the instrument. The questionnaire included 30 questions. In the first part, items number 1-10 were intended to answer the first research question about the school regulation enforcement at Vocational School in Yogyakarta. In the second part, items no 1-10 were intended to answer second research question about students' discipline At Vocational School in Yogyakarta. The questions of questionnaire were adopted from an expert. The first variable about school regulation was adopted from a questionnaire for school discipline. The second variable was about students' discipline taken from Nurdin Khan (2012). Both questionnaires used Indonesian language for transparency. Moreover, the researcher wanted to know about the level of each variable, and each variable was classified into four levels. Thus, the criteria of the levels are shown in the data collection procedure on the table form.

### **Data Collecting Procedure**

The respondents of this research were senior high students of Vocational School in Yogyakarta. To collect the data using questionnaire, the researcher distributed the questionnaire by self- administration. In this situation, the participants answered the questionnaires in the presence of the researcher. Cohen et al (2011) defined that the presence of the researcher is helpful by enabling any queries or uncertainties to be addressed immediately with the questionnaire design. With the presence of the researcher, the questions had a complete answer.

In regard to the questionnaire of this research, the questionnaires were rapid complete on one occasion. The questionnaires were paper-based questionnaire. Besides, in this data collecting procedure, it provided validity and reliability test to ensure an effective research, and detailed information is shown in the following paragraphs.

**Validity test.** In data analysis the researcher wanted to investigate the instrument by using expert judgment. By using expert judgment, the researcher could whether the instrument is valid or not. Validity is a crucial key to make an effective research. According to Cohen et al (2011), validity is one important part in quantitative research to measure the appropriate instrument in the research. Besides, if the instrument of research is not suitable, the data are invalid. Besides, in validity test, the tool used by the researcher was Aiken test by using Microsoft Excel. Based on the view validity, it is essential demonstration that an instrument in fact measures what it purports to measure, or that is intended to describe or explain Winter, 2000, p. 1 (as cited in Cohen et al 2011). Likewise, the researcher used direct survey in asking the validator to fill out the validity test in checking out the instrument. In the next step, the researcher adopted Aiken test in Ms. Excel and input the score of validity test by expert judgment.

The first step of the validity test was taken by asking to the validator to fill the validity form. In this case, the researcher used four-point rating scales from 1 to 4. The following table shown below is four-point rating scale.

*Table 3*

*Types of Response*

|                         |
|-------------------------|
| Four-Point Rating Scale |
| (1) Not Relevant        |

|                    |
|--------------------|
| (2) Quite Relevant |
| (3) Relevant       |
| (4) Very Relevant  |

The result of the validity test indicated if the score of the result from Aiken test in Microsoft excel was  $< 0.4$ . The validity test was low, if the score was  $< 0.8$ . Thus, the validity test was moderated, if the score  $> 0.8$  showing high validity test.

Table 4. *Result of Validity Test*

| items | Validator1 | Validator2 | Validator3 | S1 | S2 | S3 | SUM | V    | Category |
|-------|------------|------------|------------|----|----|----|-----|------|----------|
| 001   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 002   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 003   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 004   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 005   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 006   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 007   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 008   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 009   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 010   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 011   | 4          | 4          | 4          | 3  | 3  | 3  | 9   | 1.00 | TINGGI   |
| 012   | 4          | 4          | 4          | 3  | 3  | 3  | 9   | 1.00 | TINGGI   |
| 013   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 014   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 015   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 016   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 017   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 018   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 019   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |
| 020   | 4          | 4          | 3          | 3  | 3  | 2  | 8   | 0.89 | TINGGI   |

The result shows all the questions are valid, with the score 0.89 for nineteen questions and one 1.00 for one question. With the criteria is high.

**Reliability test.** Reliability test is essential to know how reliable the questionnaire items for data collection. To check the reliability of instrument, the researcher used SPSS and Cronbach's Alpha to read the result of the reliability test. In addition, reliability is a measure of consistency time and samples. Cohen et al (2011) asserted that reliability is a test to examine an accuracy and precision of instrument. The instrument can be used for over time and similar samples which the result has accurate data. Thus, this research measured the reliability after the researcher did the validity of the items

The researcher investigated the instrument reliability by using SPSS. In this part, the data questionnaire was input to SPSS, and the researcher checked whether the question of the questionnaire was reliable or not. Hence, the valid question items as reliability test were processed through test displayed in the following table.

Table 5

*Cronbach's Alpha*

|   |                               |
|---|-------------------------------|
| Cronbach's Alpha  |                               |
| According to Brymen and Cramer (1990 p.71 (as cited in Cohen et al 2011)) suggest that the reliability level is acceptable at 0.8, though other suggest that it is acceptable if it is 0.67 or above. |                               |
| > 0.90  | Very Highly Reliable          |
| 0.80-0.90   | Highly Reliable               |
| 0.70-0.79   | Reliable                      |
| 0.60-0.69   | Marginally/Minimally Reliable |
| <0.60   | Unacceptably Low Reliability  |



There were results table in data output in SPSS, and the results were read by using Cronbach's Alpha. To test the reliability of the questionnaire, the researcher did piloting. Piloting is trial test to check the questionnaire that reliable or not (Cohen et al. 2011). The researcher shared the link of the questionnaire to 10 respondents in grade of eleventh and grade of third. The researcher measured the reliability by using SPSS application. The data were put into SPSS application, and the results show in the Cronbach alpha score of 0,771. Therefore, the result show that all the items of the questionnaire in this study are reliable, shown in the following table

| Table 6<br><i>Result of Cronbach' Alpha</i> |            |
|---|------------|
| Cronbach' Alpha                             | N of Items |
| 0.771                                       | 132        |

## Data Analysis

This research was an explanatory correlation which included two variables in the research question. Both variables used questionnaire. In correlational design, the researcher should investigate descriptive and inferential statistics to check the data. In descriptive statistic, the researcher investigated the missing values, data outlier, dominant, and range. Besides, inferential statistic was also used in Correlational design. According to Cohen et al (2011) "inferential statistics, by contrast, strive to make inferences and predictions based on the data gathered." (p. 606). To find out the range of the each variable, the researcher used Supranto's (2008) formula. The formula is written below.

$$\text{Range: } c : \frac{\text{Max}-\text{Min}}{n(\text{Category})}$$

Details:

$c$  : the range prediction

$n$  category : number of class that the researcher wants

$X_n$  : the maximum value / score of variable

$X_1$  : the minimum value / score of variable

In this study, the maximum score of school regulation enforcement was 39.00, and the minimum score was 18.00. Meanwhile, the maximum score of students discipline was 40.00, and the minimum score was 16.00. Then, the researcher calculated the category using Suprpto's (2008) formula. Thus, the calculating for school regulation enforcement mentioned below.

$$c : \frac{40-10}{4}$$

$$c : \frac{30}{4} = 7.5$$

The calculating for students' discipline was

$$c : \frac{40-10}{4}$$

$$c : \frac{30}{4} = 7.5$$

The range of school regulation enforcement was classified into four levels. Here are the intervals of school regulation enforcement:

Table 7

*Interval school regulation enforcement*

| Interval    | The level of school regulation enforcement |
|-------------|--|
| 32.8 – 40.0 | Excellent                                  |
| 25.2 – 32.7 | Good                                       |
| 17.6 – 25.1 | Moderate                                   |
| 10.0 – 17.5 | Bad  |

The range interval of students' discipline level was classified into four levels. For details, here are the intervals of students' discipline at school

Table 8

*Interval students' Discipline at School*

| Interval    | The level of students discipline |
|-------------|----------------------------------|
| 32.8 – 40.0 | Very high                        |
| 25.2 – 32.7 | High                             |
| 17.6 – 25.1 | Moderate                         |
| 10.0 – 17.5 | Low                              |

For the second variable, the researcher should find the level of students' learning motivation which could be found by the output in SPSS about mean total of variable two. Inferential statistic in correlational design was used to investigate the normality test of the data and hypotheses test.

**Normality test.** Normality test was used to investigate whether the data were normal or not. The data were considered normal if the Asymp significance value was  $> 0.05$ . To test the normality test, the researcher used SPSS version 22.0.

**Hypothesis test.** In this research, the hypothesis explained about whether correlation between variable one and variable two included or not. For the criteria, if  $H_0$ : There was no correlation between the enforcement of school regulations and students' discipline, and  $H_1$ : There was correlation between the enforcement of school regulations and students' discipline. The data found that if  $H_0$  were rejected, then, there were the correlation between two variables, but if the  $H_0$  were accepted, there were no correlation between variable one and variable two. To investigate the correlation between those variables, the researcher used SPSS and Pearson Product Moment Correlation ( $r$ ). Cohen et al. (2011) argued that the Pearson's product moment was coefficient for correlation research. Two variables have correlation if the value of the significance ( $r$ -value) higher than the level of the significance ( $r$ -table). The hypothesis will be rejected if the ( $r$ -value)  $\geq 0.05$ , and hypothesis will be accepted if the ( $r$ -value)  $< 0.05$ . The following table showed the range of association the correlation based on Cohen and Manion (1994).

According to (Creswell, 2011) the Pearson product moment correlation coefficient is a measure of the strength of a linear association between two variables and is symbolized by  $r$ . Pearson product moment indicates how far away all these data point are to this line of best fit.

Table 9

*Pearson Product Moment*

| <b>Coefficient of Correlation (r)</b> | <b>Degree</b> |
|---------------------------------------|---------------|
| 0.86 and above                        | Very strong   |
| 0.85 – 0.66                           | Strong        |
| 0.65 – 0.36                           | Moderate      |
| 0.35 – 0.20                           | Low           |