**CHAPTER III**

**RESEARCH METHODOLOGY**

1. **Research Design**

Sukardi (2005: 3) says that research is the way of observation or inquiry that has purpose to answer a problem or the finding process, either discovery or invention. Moreover, Hadjar (1999: 10) says that research is the process of systematically gathering and logically analyzing to the information (data) for a certain purpose. From the two definitions, it can be concluded that research is the finding process including gathering and analyzing the data to answer a problem.

In a research, it is important to think the design of the research. McMillan and Schumacher (in Hadjar, 1999: 102) say that the research design refers to the plan and the structure of investigation that are used to get empiric evidences in answering research question. The design determines how the data must be analyzed and how the result is interpreted. Hadjar (1999: 103-113) divides the design into qualitative and quantitative design. Moreover, he also divides the quantitative design into experimental, ex post facto, and descriptive design. The descriptive design is still divided into simple, inferential, and correlational descriptive design. The last design that is correlational descriptive design or usually only called correlational design is the design of this research.

According to Gay (in Sukardi, 2005: 166), “Correlational research is a research study that involves collecting data in order to determine whether and to what degree a relationship exists between two or more quantitative variables. The variables of this research are simple present tense mastery and ability in writing descriptive text. It means that this research is conducted to find out the correlation between simple present tense mastery and ability in writing descriptive text.

1. **Identification of Variable**

According to Suryabrata (2008: 25) that variable is everything that will become research object. This research describes the correlation between two variables; they are simple present tense mastery as the first variable and ability in writing descriptive text as the second.

1. **Population, Sampling, Sample of the Research**
2. Population

Prasetyo (2008: 119) says that population is the whole phenomenon that would be researched. Based on the statement, the population of this research is the first graders of SMPN 1 Kauman in academic year 2010/2011.

There are nine classes. They are class VII.A consisting 37 students, VII.B consisting 37 students, VII.C consisting 37 students, VII.D consisting 36 students, VII.E consisting 36 students, VII.F consisting 36 students, VII.G consisting 37 students, VII.H consisting 37 students, and VII.I consisting 27 students. So, the total number of the students of the population is 320 students.

1. Sampling

Hadjar (1999: 136) says that sampling is selecting a part of individuals from a population to represent the population. In this research, the researcher uses the cluster random sampling. It means the researcher chooses a group that exists in the population at random. The researcher uses the cluster random sampling because the groups in the population have the homogenous characteristic (Prasetyo, 2008: 133).

1. Sample

Arikunto (1992: 104) says that sample is a part of the population that is researched. A sample must be able to represent the population, because the research result of the sample will be generalized to the population. It means the research result of the sample acts as the research result of the population.

The sample of this research is determined by the English teacher of SMPN 1 Kauman. The sample is Class VII.G of SMPN 1 Kauman in academic year 2010/2011. The number is 37 students.

1. **Data and Data Source**
2. Data

Data can be classified into:

* 1. Primary Data

Primary data are data taken from the first source directly. In this research, data including primary data are the students’ scores of Class VII.G.

* 1. Secondary Data

Secondary data are data taken from served data. Secondary data are usually obtained through documentation. In this research data including secondary data are the lists of the students’ names of the whole first graders including in them the number of the students in every class.

1. Data source

Data source means everything where the data can be obtained from. The data source can be people, paper or place. In this research the data are obtained from people and paper.

* 1. People

The data obtained from people as the data source are students’ scores that are obtained through administering test.

* 1. Paper

Paper as data source refers to written document such as the lists of students’ names that are obtained through documentation.

1. **Method of Collecting Data**

 Method of collecting data is the technique used by the researcher to obtain data. The techniques of collecting data that are used in this study are:

* + 1. Administering Test

Ary et al (1985: 189) says, “Test is a set of stimuli presented to an individual in order to elicit responses on the basic of which a numerical score can be assigned”. There are two kinds of test in this research. They are try-out test and test. The try-out test is firstly conducted.

1. Try-Out Test

The try-out test is conducted to review and to give description about the material of test; and to find out which the test item that can be used in the next test and which one cannot. There are two sets of try-out test that are administered separately, they are:

* + - 1. Grammar Try-Out Test

The grammar try-out test in this research is about simple present tense. It is conducted on 5th May 2011. The try-out test contains 40 completion items. In this try-out test the students are asked to change verb in the brackets to the correct form. Every right answer scores 2.5, and every wrong answer scores 0. The maximum score that can be got is 100. The students have 70 minutes to do this grammar try-out test.

To find out which the try-out test item that can be used in the next test and which one cannot, all the try-out test items are examined from the point of view of their difficulty level and their level of discrimination.

1. Item Difficulty

Heaton (1975: 172) says, “*The index of difficulty (or the facility value)* of an item simply shows how easy or difficult the particular item proved in the test”. The index of difficulty is calculated by using the formula:

$$F.V.=\frac{R}{N}$$

F.V. : the index of difficulty

R : the number of correct answers

N : the number of students taking the test

1. Item Discrimination

Heaton (1975: 173) says, “The discrimination index of an item indicates the extent to which the item discriminate; between the testees, separating the more able testees from the less able”. The formula of the discrimination index is follows:

$$D=\frac{Correct U-Correct L}{n}$$

D : discrimination index

U : upper half

L : lower half

n : number of candidates in one group (a half of the whole group)

There are 15 test items that will be used in the next test. They are test items number 4, 5, 12, 15, 16, 24, 25, 26, 31, 33, 35, 36, 37, and 40 (see appendix III).

* + - 1. Writing Try-Out Test

The writing try-out test in this research is about descriptive text. It is conducted on 7th May 2011. The students are asked to make a descriptive text based on one of the nine served themes they choose. They have 70 minutes to build the descriptive text.

Then the themes the students choose will be used in the next test in different words. It means that the themes used in the next test are not absolutely the same, but those are the other themes that still have relationship with the themes the students choose. The themes the students choose are neighbor, actor/actress, family, animal, tourism place, and house (see appendix IV).

1. Test

The both try-out tests—grammar and writing try-out test—are revised and served as the real test. There are two sets of test that are administered separately, they are:

1. Grammar Test

The grammar test in this research is about simple present tense. It is conducted on 12th May 2011. The test contains 40 completion items. In this test the students are asked to change verb in the brackets to the correct form. Every right answer scores 2.5, and every wrong answer scores 0. The maximum score that can be got is 100. The students have 70 minutes to do this grammar test.

1. Writing Test

The writing test in this research is about descriptive text. It is conducted on 14th May 2011. The students are asked to make a descriptive text based on one of the nine served themes they choose. They have 70 minutes to build the descriptive text.

In this research, the analytic scoring is applied to score the writing. O’Malley and Pierce (1996: 145) propose the analytic scoring rubric for writing as follows:

**Table 3.1. The Rubric of Analytic Scoring for Writing**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| DomainScore\* | Composing | Style | SentenceFormation | Usage | Mechanics |
| 4 | Focuses on central ideas with an organized and elaborated text | Purposefully chosen vocabulary, sentence variety, information, and voice to affect reader | Standard word order, no enjambment (run-on sentences), completeness (no sentence fragments), standard modifiers and coordinators, and effective transitions | Standard inflection (e.g., plurals, possessives, -ed, -ing with verbs, and –ly with adverbs), subject-verb agreement (we were vs. we was), standard word meaning | Effective use of capitalization, punctuation, spelling, and formatting (paragraphs noted by indenting) |
| 3 | Central ideas, but not as evenly elaborated and some digressions | Vocabulary less precise and information chosen less purposeful | Mostly standard word order, some enjambment or sentence fragments | Mostly standard inflections, agreement, and word meaning | Mostly effective use of mechanic; errors do not detract from meaning |
| 2 | Not a focused ides or more than one idea, sketchy elaboration, and many digressions | Vocabulary basic and not purposefully selected; tone flat or inconsistent | Some non-standard word order, enjambment, and word omissions (e.g., verbs) | Some error with inflections, agreement, and word meaning | Some errors with spelling and punctuation that detract from meaning |
| 1 | No clear idea, little or no elaboration, many digressions | Not controlled, tone flat, sentences hated or choppy | Frequently non-standard word order, enjambment, and word omissions | Shift from one tense to another; error in conventions (them/those, good/well, double negatives, etc.) | Misspells even simple words; little formatting evident |

\* 4 = Consistent control

3 = Reasonable control

2 = Inconsistent control

1 = Little or no control

The rubric of the analytic scoring consists of five criteria that are composing, style, sentence formation, usage, and mechanics. The style, sentence formation, and usage criterion have logical relationship to simple present tense mastery. Whereas the composing and mechanics criterion don’t have relationship to simple present tense mastery at all. In order to make the logical correlation between simple present mastery and ability in writing descriptive text, the writing scoring concerns with the style, sentence formation, and usage criterion; and disobeys the composing and mechanics one. It means the writing is scored based on the style, sentence formation, and usage criterion only.

The highest writing score that can be got by the students will be equalized to the highest grammar score that is 100. To make the highest writing score 100, the total score of the analytic scoring—the sum of style, sentence formation, and usage score (the highest total score is 12)—will be divided into 12 and then multiplied by 100.

A good test has two qualities, they are validity and reliability.

* 1. Validity

Validity is the degree that indicates in which a test measures what intended to measure (Sukardi, 2005: 122). A test is valid only for a certain purpose. For instance, a test that is valid for mathematics test is not certainly valid for intelligence test.

In this research, the researcher emphasizes the content validity. Ary et al (1985: 214) says, “Content validity refers to the extent to which the instrument represents the content of interest”. It means a test is called valid, if it represents the content what intended to measure. To make the test valid, the test is focused on the using simple present tense and writing descriptive text only. The question items in the test represent simple present tense and descriptive text matter has been taught.

* 1. Reliability

Heffner (2003) says, “Reliability is synonymous with the consistency of a test, survey, observation, or other measuring device”. The reliability is usually expressed in the term of coefficient. The high coefficient expresses high reliability and vice versa (Sukardi, 2005: 128).

This study applies two kinds of test reliability; they are split-half reliability and inter-rater reliability.

1. Split-Half Reliability

Split-half reliability is a test reliability that is obtained from a single test administration where the test items are divided into two comparable halves (Ary et al, 1985: 231). This split-half reliability is applied to estimate the reliability of the grammar test. The grammar test that consists of 40 test items is divided into two comparable halves that are test items number 1-20 and 21-40.

The correlation between the test items number 1-20 and 21-40 on a 40-item test is a reliability estimate for a 20-item test, not a 40-item test. To estimate the reliability for the entire test, the Spearman-Brown prophecy formula is applied (Ary et al, 1985: 232):

$$r\_{xx}=\frac{2r\_{H}}{1+r\_{H}}$$

*r*xx = the estimated reliability of entire test

*r*H = the Pearson *r* correlation between the two halves

**Table 3.2. The Grammar Score Number 1-20 and 21-40**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Subject | Score for Test Items Number 1-20 | Score for Test Items Number21-40 |  | Subject | Score for Test Items Number 1-20 | Score for Test Items Number 21-40 |
| 1 | 42.5 | 45 |  | 20 | 50 | 50 |
| 2 | 22.5 | 32.5 |  | 21 | 37.5 | 37.5 |
| 3 | 40 | 45 |  | 22 | 50 | 50 |
| 4 | 45 | 42.5 |  | 23 | 5 | 10 |
| 5 | 37.5 | 20 |  | 24 | 42.5 | 42.5 |
| 6 | 50 | 50 |  | 25 | 20 | 25 |
| 7 | 15 | 7.5 |  | 26 | 42.5 | 50 |
| 8 | 35 | 45 |  | 27 | 50 | 47.5 |
| 9 | 47.5 | 47.5 |  | 28 | 42.5 | 47.5 |
| 10 | 50 | 50 |  | 29 | 45 | 35 |
| 11 | 10 | 12.5 |  | 30 | 35 | 35 |
| 12 | 45 | 45 |  | 31 | 30 | 25 |
| 13 | 47.5 | 47.5 |  | 32 | 25 | 20 |
| 14 | 50 | 50 |  | 33 | 45 | 40 |
| 15 | 42.5 | 40 |  | 34 | 47.5 | 42.5 |
| 16 | 50 | 50 |  | 35 | 22.5 | 27.5 |
| 17 | 47.5 | 50 |  | 36 | 47.5 | 42.5 |
| 18 | 45 | 40 |  | 37 | 25 | 20 |
| 19 | 42.5 | 37.5 |  |

To estimate the reliability for the 20-item test, the researcher uses the Pearson product moment correlation formula. Here is the result of the Pearson product moment correlation formula using SPSS 16.0:

**Table 3.3. The Reliability for The 20-Item Test**

| **Correlations** |
| --- |
|  |  | Test Items Number 1-20 | Test Items Number 21-40 |
| Test Items Number 1-20 | Pearson Correlation | 1 | .904\*\* |
| Sig. (2-tailed) |  | .000 |
| N | 37 | 37 |
| Test Items Number 21-40 | Pearson Correlation | .904\*\* | 1 |
| Sig. (2-tailed) | .000 |  |
| N | 37 | 37 |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). |  |

Then to estimate the reliability of the entire test, the Spearman-Brown prophecy formula is employed:

$$r\_{xx}=\frac{2r\_{H}}{1+r\_{H}}$$

$$r\_{xx}=\frac{2. 0.904}{1+0.904}$$

$$r\_{xx}=\frac{1.808}{1.904}$$

$$r\_{xx}=0.9495798319327731$$

$$r\_{xx}=0.950$$

A test is called reliable, if the reliability coefficient comes near 1.00; and less reliable, if the reliability coefficient comes near 0.00. This grammar test has the reliability coefficient 0.950, so this test is reliable.

1. Inter-Rater Reliability

Inter-rater reliability means that there are two or more raters in the test reliability. Heffner (2003) says, “Whenever observations of behavior are used as data in research, we want to assure that these observations are reliable.  One way to determine this is to have two or more observers rate the same subjects and then correlate their observations”. It means that although the two or more observers rate the same subjects, perhaps the observers will have different ratings. Then to estimate the reliability of the observations, the different ratings are correlated.

In this research, there is no behavior observed by two or more observers (raters) like example above, but there are writings scored by two raters. Like observing behavior, scoring writing makes the two raters have different scorings. In this research, the first rater is the researcher herself, and the second rater is Ledi Setiawan, the researcher’s colleague.

**Table 3.4. The Writing Score of Two Raters**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Subject | The Scoring of TheFirst Rater | The Scoring of TheSecond Rater |  | Subject | The Scoring of TheFirst Rater | The Scoring of The Second Rater |
| 1 | 58.33 | 58.33 |  | 20 | 75 | 66.67 |
| 2 | 41.67 | 33.33 |  | 21 | 58.33 | 66.67 |
| 3 | 66.67 | 58.33 |  | 22 | 75 | 66.67 |
| 4 | 50 | 58.33 |  | 23 | 66.67 | 58.33 |
| 5 | 66.67 | 58.33 |  | 24 | 58.33 | 58.33 |
| 6 | 75 | 58.33 |  | 25 | 50 | 50 |
| 7 | 58.33 | 41.67 |  | 26 | 75 | 58.33 |
| 8 | 75 | 50 |  | 27 | 66.67 | 66.67 |
| 9 | 66.67 | 75 |  | 28 | 58.33 | 66.67 |
| 10 | 75 | 58.33 |  | 29 | 75 | 75 |
| 11 | 41.67 | 33.33 |  | 30 | 58.33 | 75 |

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*Continuation Continuation*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Subject | The Scoring of TheFirst Rater | The Scoring of TheSecond Rater |  | Subject | The Scoring of TheFirst Rater | The Scoring of The Second Rater |
| 12 | 66.67 | 75 |  | 31 | 75 | 75 |
| 13 | 83.33 | 66.67 |  | 32 | 50 | 66.67 |
| 14 | 50 | 33.33 |  | 33 | 66.67 | 75 |
| 15 | 66.67 | 75 |  | 34 | 66.67 | 66.67 |
| 16 | 75 | 75 |  | 35 | 58.33 | 66.67 |
| 17 | 33.33 | 50 |  | 36 | 58.33 | 41.67 |
| 18 | 75 | 58.33 |  | 37 | 41.67 | 66.67 |
| 19 | 75 | 50 |  |  |  |  |

To estimate the reliability for the writing test, the researcher uses the Pearson product moment correlation formula. Here is the result of the Pearson product moment correlation formula using SPSS 16.0:

**Table 3.5 The Reliability for The Writing Test**

| **Correlations** |
| --- |
|  |  | The Scoring of the First Rater | The Scoring of the Second Rater |
| The Scoring of the First Rater | Pearson Correlation | 1 | .467\*\* |
| Sig. (2-tailed) |  | .004 |
| N | 37 | 37 |
| The Scoring of the Second Rater | Pearson Correlation | .467\*\* | 1 |
| Sig. (2-tailed) | .004 |  |
| N | 37 | 37 |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). |  |

A test is called reliable, if the reliability coefficient comes near 1.00; and less reliable, if the reliability coefficient comes near 0.00. This writing test has the reliability coefficient 0.467, so this test is reliable.

* + 1. Documentation

Documentation is a way to obtain information through served documents. The data obtained through documentation are the lists of the students’ names of the whole first graders including in them the number of the students every class.

1. **Method of Data Analysis**

The quantitative data in this research that is the test scores is analyzed by using mean score and Pearson product moment correlation.

1. Mean Score

Mean score is used to know how the students’ simple present tense mastery and ability in writing descriptive text is. The formula of mean score is as follows (Riduwan and Akdon, 2007: 28):

$$\overbar{x}=\frac{∑X\_{i}}{n}$$

$\overbar{x}$ : mean

∑Xi : the sum of data

n : the many of data

1. The Pearson product moment correlation

The Pearson product moment correlation is used to know if there is a correlation between the simple present tense mastery and the ability in writing descriptive text. The formula of product moment correlation is as follows (Irianto, 2007: 137):

$$r=\frac{ n ∑XY - ∑X ∑Y}{\sqrt{n∑X^{2}-(∑X)^{2}} \sqrt{n∑Y^{2}-(∑Y)^{2}}}$$

*r* : coefficient correlation

X : the student’s score of simple present tense test

Y : the student’s score of writing descriptive text test

N : the number of the students

The coefficient correlation can be classified as follows (Amirudin in Prassetya, 2009: 38):

**Table 3.1. The Coefficient Correlation**

|  |  |
| --- | --- |
| Coefficient Correlation | Interpretation |
| Less-0.20 | Very low correlation |
| 0.20-0.40 | Low correlation |
| 0.40-0.60 | Moderate correlation |
| 0.60-0.80 | High correlation |
| 0.80-above | Very high correlation |