## CHAPTER III

## RESEARCH METHODOLOGY

## A. Research Design

The design of this research is a correlational. It is a research to discover or to measure the relationship between two or more than two variable. Cressswell (2008:60) states that Correlational research design is a procedure of quantitative research in which investigators measure the degree of association (relationship) between two or more variables or sets of scores. Specifically explanatory research design because one basic objective of this form of a correlational research is to explain the association between or among variables, we will use the term explanatory research in this discussion. Cresswell (2012:340) also claims that an explanatory research design is a 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 in changes in the other. Explanatory designs consist of a simple association between two variables. This research can be said explanatory research because it have the same characteristics which are Cresswell mention:

1. The investigators correlate two or more variables.

The first is students' understanding of skimming and scanning technique as the independent variable $\left(\mathrm{X}_{1}\right)$ and (X2), the second is the students' reading comprehension on expository text as the dependent variable (Y)
2. The researchers collect data at one point in time.
3. The investigator analyzes all participants as a single group.
4. The researcher obtains at least two scores for each individual in the group-one for each variable.
5. The researcher reports the use of the correlation statistical test (or an extension of it) in the data analysis.
6. Finally, the researcher makes interpretations or draws conclusions from the statistical test results.

## B. The Location and the Time of the Research

The research was conducted at Dwi Sejahtera Vocational High School of Pekanbaru at Dirgantara Street No. 04 Pekanbaru, Riau. The research was done in July 2016.

## C. The Subject and the Object of the Research

The students of the first grade of Dwi Sejahtera Vocational High School Pekanbaru was the subject in this research meanwhile the object of this research was the correlation between students' understanding of skimming and scanning techniques and their reading comprehension on expository text.

## D. The Population and the Sample of the Research

## 1. The Population

The population of this research will be the first and second year students of Dwi Sejahtera Vocational High School of Pekanbaru. There are 7 classes of the first year. Thus, the total number of the population is 73students that can be seen as follow:

Tabel III. 1
The Population First Grade Students of Dwi Sejahtera Vocational High School of Pekanbaru

| No. | Class/ Major | Number of <br> Students |
| :--- | :--- | :--- |
| 1 | XI T. Roda 4 | 23 |
| 2 | XI T. Roda 2 | 9 |
| 3 | XI T. Bangunan | 2 |
| 4 | XI T. Kom. Jaringan | 14 |
| 5 | XI T. Multi Media | 3 |
| 6 | XI. T. Listrik | 5 |
| 7 | XI Akuntansi | 12 |
| 8 | XI Perbankan | 5 |
| Total |  | 73 |

## 2. The Sample

In this research, researcher simple random sampling, it is 95 per cent of the students that is 70 students. It based on Krejcie and Morgan (1970: 610) in Cohen determining sample size for simple random sampling the sample should be 95-99 percent of the total population without consider the class and or intelligence level.

## E. The Techniques of Collecting Data

To collect the data from the sample, the researcher uses the tests technique. Tests are assessment instruments that pose problems for students to solve, Syafi'i(2013:101). In collecting the data, the writer gave tests to the students. There are two sets of tests:

1. First Test X 1 (Understanding of Skimming Technique) and X 2 (Understanding of Scanning Technique)

Understanding of skimming and scanning exercise was given as the first test to the students which is consists of 20 questions (multiple choices). The items of the test were constructed based on the indicators of understanding of skimming and scanning techniques. It can be seen on the following blue print table (see Appendix)
2. Second Test (Reading comprehension test)

Reading comprehension test was given as the second test to the students which is consist of 20 questions (multiple choices). The items of the test were conducted based on the indicator of reading comprehension. It can be seen on the following blue print table (see Appendix).

In this research, the data were analyzed by using statistical method and has been approved by the Head Master of Dwi Sejahtera Vocational High School of Pekanbaru The data were analyzed by using Pearson Product moment to know whether the result of the research is statistically significant or not, and the data were analyzed though SPSS 16 version. The category of score in reading test could be classified, as follows:

Table III. 2
The Score of Reading Comprehension

| Score of Reading <br> Comprehension | Category |
| :---: | :---: |
| $85-100$ | Very good |
| $70-84$ | Good |
| $55-69$ | Sufficient |
| $40-54$ | Less |
| $<40$ | Fail |

## 1. The Reliability and the Validity of the Test a. Validity

To construct the best validity, the writer needed to consider the validity. According to Gronlund (1998: 226) in Brown (2003:22), validity is the extent to which inferences made from assessment results are appropriate, meaningful, and useful in terms of the purpose of the assessment. It means that validity is whether the test is suitable to be tested to the students' or not.

In addition, according to Ary, et. al. (2010:225), validity is the most important consideration in developing and evaluating measuring instruments. Historically, validitywas defined as the extent to which an instrument measured what it claimed to measure. The focus of recent views of validity was not on the instrument itself but on the interpretation and meaning of the scores derived from the instrument. This research used content validity. Brown (2003:22) stated that content validity is if a test actually sample the subject matter about which conclusions are to be drawn, and if it requires the test-taker to perform the behavior that is being measured. According to Hughes (1989:22), a test is said to have content validity if its content constitutes a representative sample of the language skills, structures, etc. The test would have content validity only if it included a proper sample of the relevant structure.

The test given to students was considered too difficult or too easy, often showing the low reliability. Item difficulty was determined as the proportion of correct responses. This was held pertinent to the index difficulty; it was generally expressed as the percentage of the students who answered the questions correctly.

According to Arikunto (2007:208) the formula of each item difficulty as follows :

$$
P=\frac{B}{J S}
$$

Note:
$P=$ Index of difficulty or facility
$\mathrm{B}=$ The number of correct answers
$\mathrm{JS}=$ Thenumber of examiners or students
The formula above was used to find out easy or difficult test items that writer gave to the respondents. The standard value of the proportion of correct can be seen in the table as follows:

Table III. 3
The Index Difficulty Level of Instrument

| Proportion Correct (p) | Item Category |
| :---: | :---: |
| $\mathrm{P}>0.70$ | Easy |
| $0.30 \leq \mathrm{P} \leq 0.70$ | Average |
| $\mathrm{P}<0.30$ | Difficult |
| Based on table III.5 above, the facility value under 0.30 is |  | considered difficult and above 0.70 is considered easy. The items are categorized into the level of easy or difficult ( $\mathrm{p}<0.30$ or $\mathrm{p}>0.70$ ) should be modified. That means the items are rejected.

Therefore, the standard value of the proportion of correct is between 0.30 and 0.70 . It means that the items are accepted.

## 1) Validity of Understanding of Skimming and Scanning Techniques in Expository Text

To analyze the validity of variable X , the researcher used Microsoft Excel 2010 program version. Based on the try out result of the instrument validity to the 20 items, it showed that all items were valid. It means that there were 20 items that were used in this research. In the following table is the result of the instrument validity.

Table III. 4
The Students' Ability to Identify the Main Idea of the Expository Text

| Variable | Identify the Main Idea of the <br> Expository Text |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Item No | 1 | 7 | 11 | 17 |  |
| Correct Item | 12 | 11 | 13 | 12 | 20 |
| P | 0.60 | 0.55 | 0.65 | 0.60 |  |
| Q | 0.40 | 0.45 | 0.35 | 0.40 |  |

Based on the table III. 4 above, it could be shown the portion of correct answer. For item number 1 showed the proportion of correct 0.60 , item number 7 showed the proportion of correct 0.55 , item number 11 shows the proportion of correct 0.65 , item number 17 showed the proportion of correct 0.60 . Based on the standard level of difficulty "p" $>0.30$ and $<0.70$, it is pointed out that item difficulties in average of each item number for identifying the main idea on the expository text are accepted.

Table III. 5
Students' Ability to Identify the Author's Purpose for the Expository Text

| Variable | Identify the Author Purpose on <br> Expository Text |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Item No | 2 | 6 | 12 | 16 |  |
| Correct Item | 13 | 12 | 12 | 10 | 20 |
| P | 0.65 | 0.60 | 0.60 | 0.50 |  |
| Q | 0.40 | 0.40 | 0.40 | 0.50 |  |

Based on the table III. 5 above, it could be shown the portion of correct answer. For item number 2 showed the proportion of correct 0.65 , item number 6 showed the proportion of correct 0.60 , item number 12 shows the proportion of correct 0.60 , item number 16 showed the proportion of correct 0.50 . Based on the standard level of difficulty "p" $>0.30$ and $<0.70$, it is pointed out that item difficulties in average of each item number for identifying the author purpose on expository text are accepted.

Table III. 6
Students' Ability to Identify the Kind of text

| Variable | Identify the kind of text |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Item No | 3 | 8 | 14 | 18 |  |
| Correct Item | 9 | 10 | 12 | 13 | 20 |
| P | 0.45 | 0.50 | 0.60 | 0.65 |  |
| Q | 0.35 | 0.50 | 0.40 | 0.35 |  |

Based on the table III. 6 above, it could be shown the portion of correct answer. For item number 3 showed the proportion of correct
0.45 , item number 8 showed the proportion of correct 0.50 , item number 14 shows the proportion of correct 0.60 , item number 18 showed the proportion of correct 0.65 . Based on the standard level of difficulty "p" $>0.30$ and $<0.70$, it is pointed out that item difficulties in average of each item number for identifying the kind of text text are accepted.

Table III. 7
Students' Ability to Identify the Factual Information of the Expository Text

| Variable | Identify factual information of the <br> Expository Text |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Item No | 4 | 9 | 13 | 19 |  |
| Correct Item | 10 | 13 | 12 | 13 | 20 |
| P | 0.50 | 0.65 | 0.60 | 0.65 |  |
| Q | 0.50 | 0.35 | 0.40 | 0.35 |  |

Based on the table III. 7 above, it could be shown the portion of correct answer. For item number 4 showed the proportion of correct 0.50 , item number 9 showed the proportion of correct 0.65 , item number 13 shows the proportion of correct 0.60 , item number 19 showed the proportion of correct 0.65 . Based on the standard level of difficulty "p" $>0.30$ and $<0.70$, it is pointed out that item difficulties in average of each item number for identifying the factual information of the expository text are accepted.

Table III. 8
Students' Ability to Identify the Word or Phrase of the Expository Text

| Variable | Identify the word or phrase of on <br> Expository Text |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Item No | 5 | 10 | 15 | 20 |  |
| Correct Item | 11 | 10 | 9 | 10 | 20 |
| P | 0.65 | 0.50 | 0.45 | 0.50 |  |
| Q | 0.35 | 0.50 | 0.55 | 0.50 |  |

Based on the table III. 8 above, it could be shown the portion of correct answer. For item number 5 showed the proportion of correct 0.65 , item number 10 showed the proportion of correct 0.50 , item number 15 shows the proportion of correct 0.45 , item number 20 showed the proportion of correct 0.50 . Based on the standard level of difficulty "p" $>0.30$ and $<0.70$, it is pointed out that item difficulties in average of each item number for identifying the word or phrase of the expository text are accepted.

From the tables and explanations about the validity of understanding of skimming and scanning on expository text test, all items are valid.

## 2) Validity of Reading Comprehension in Expository Text

To analyze the validity of variable Y , the researcher used Microsoft Excel 2010 program version. Based on the try out result of the instrument validity to the 20 items, it showed that all items werevalid. It means that there were 20 items that were used in this research. In the following table is the result of the instrument validity.

Therefore, the standard value of the proportion of correct is between 0.30 and 0.70 . It means that the items are accepted.

Table III. 9
Students' Ability to Identify the Word Meaning on
Expository Text

| Variable | Identify the Word Meaningon Expository |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| Item No | 1 | 6 | 11 | 16 |  |
| Correct Item | 12 | 12 | 13 | 10 | 20 |
| P | 0.60 | 0.60 | 0.65 | 0.50 |  |
| Q | 0.40 | 0.40 | 0.35 | 0.50 |  |

Based on the table III. 9 above, it could be shown the portion of correct answer. For item number 1 showed the proportion of correct 0.60 , item number 6 showed the proportion of correct 0.60 , item number 11 shows the proportion of correct 0.65 , item number 16 showed the proportion of correct 0.50 . Based on the standard level of difficulty "p" $>0.30$ and $<0.70$, it is pointed out that item difficulties in average of each item number for identifying the word meaning on expository text are accepted.

The table below is the categories of reliability test used in determining the level of reliability of the tests.

Table III. 14
The Level of Reliability

| No | Reliability | Level of Reliability |
| :--- | :--- | :--- |
| 1 | $>0.90$ | Very High |
| 2 | $0.80-0.90$ | High |
| 3 | $0.70-0.79$ | Reliable |
| 4 | $0.60-0.69$ | Marginally/Minimally |
| 5 | $<0.60$ | Unacceptably Low |

Cohen, Manion and Mansion (2007:506)

## 1) Reliability Understanding of Skimming and Scanning Techniques Test

For X variable (skimming and scanning techniques), the writer gave oral test to 70 students. After getting the result, the writer used Cronbach's alpha formula to find out the reliability of the test through SPSS 16.00. It can be seen on table as follows:

Table III. 15
The Reliability of Understanding ofSkimming and ScanningTechniques in Expository Text Try Out (Obtained By SPSS 16.00)

| No | Respondent | Test(X) | Re-Test (Y) |
| :--- | :--- | :---: | :---: |
| 1 | Student 01 | 50 | 55 |
| 2 | Student 02 | 55 | 45 |
| 3 | Student 03 | 55 | 50 |
| 4 | Student 04 | 65 | 65 |
| 5 | Student 05 | 60 | 70 |
| 6 | Student 06 | 65 | 75 |
| 7 | Student 07 | 55 | 45 |
| 8 | Student 08 | 65 | 60 |
| 9 | Student 09 | 65 | 75 |
| 10 | Student 10 | 65 | 60 |
| 11 | Student 11 | 55 | 50 |
| 12 | Student 12 | 55 | 60 |
| 13 | Student 13 | 55 | 55 |
| 14 | Student 14 | 65 | 60 |
| 15 | Student 15 | 40 | 50 |
| 16 | Student 16 | 50 | 60 |
| 17 | Student 17 | 55 | 60 |
| 18 | Student 18 | 50 | 55 |
| 19 | Student 19 | 55 | 65 |
| 20 | Student 20 | 60 | 70 |
|  |  |  |  |

## Reliability Statistics

| Cronbach's <br> Alpha | N of <br> Items |
| ---: | ---: |
| .727 | 2 |

From the table III.15, it can be read that the reliability of students' understanding of skimming and scanning techniques test 0.727 with reliablelevel and the correlation between X and Y score items was 0.593 at medium level correlation.

## 2) Reliability of Reading Comprehension Test

Then, to find out the reliability of Y variable (Reading Comprehension), the writer tried out the reading comprehension test to 70 students. After getting the result, the writer also used Cronbach's alpha formula through SPSS 16.00.It can be seen on table as follows:

Table III. 16
The Reliability of Reading Comprehension in Expository Test (Obtained By SPSS 16.00)

| No | Respondent | Test(X) | Re-Test (Y) |
| :--- | :--- | :--- | :--- |
| 1 | Student 01 | 65 | 65 |
| 2 | Student 02 | 60 | 55 |
| 3 | Student 03 | 65 | 65 |
| 4 | Student 04 | 60 | 65 |
| 5 | Student 05 | 60 | 70 |
| 6 | Student 06 | 65 | 65 |
| 7 | Student 07 | 65 | 60 |
| 8 | Student 08 | 60 | 60 |
| 9 | Student 09 | 60 | 70 |
| 10 | Student 10 | 60 | 60 |
| 11 | Student 11 | 50 | 55 |
| 12 | Student 12 | 55 | 60 |
| 13 | Student 13 | 55 | 60 |
| 14 | Student 14 | 65 | 60 |
| 15 | Student 15 | 65 | 60 |
| 16 | Student 16 | 70 | 75 |
| 17 | Student 17 | 55 | 50 |
| 18 | Student 18 | 65 | 65 |
| 19 | Student 19 | 70 | 65 |
| 20 | Student 20 | 60 | 65 |

Reliability Statistics

| Cronbach's <br> Alpha | N of Items |
| ---: | ---: |
| .730 |  |

From the table III.16, it can be read that the reliability of students' understanding of skimming and scanning techniques test 0.730 with reliable level and the correlation between X and Y score items was 0.578 at medium level correlation.

## C. Normality

1) The Test of Normality of Understanding of Skimming and

## Scanning Techniques Data

In skimming and scanning techniques data, the writer used SPSS 16.00 for testing the normality.

Table III. 17
The Descriptive Statistic for the Normality Test of the Understanding of Skimming and Scanning Techniques Data

| No | Description | Value |
| :--- | :--- | :--- |
| 1 | Statistic | 0.870 |
| 2 | Degree of Freedom (DF) | 20 |
| 3 | Significant | 0.076 |

Based on the table above, it shows that the significance of the skimming and scanning techniques is 0.870 . According to Shapiro Wilk formula if the variable $\mathrm{p}>0.05$ it can be said that data of variables distributed normally. From the table above, the data of reading comprehension is normal because $0.126>0.05$.

Below is the spread of the normality of the skimming and scanning techniques data:

## Chart III. 10



The Q-Q plot above shows that the understanding of skimming and scanning techniques in expository text data are normal because the data points spread around the diagonal line and spreading follow the diagonal line.

## 2) The Test of Normality of Reading Comprehension Data

In reading comprehension data, the writer used SPSS 16.00 for testing the normality.

Table III. 18
The Descriptive Statistic for the Normality Test of the Reading Comprehension Data

| No | Description | Value |
| :--- | :--- | :--- |
| 1 | Statistic | 0.917 |
| 2 | Degree of Freedom (DF) | 20 |
| 3 | Significant | 0.087 |

Based on the table III.18, it shows that the significance of the reading comprehension is 0.917 . According to Shapiro Wilk formula if the variable $\mathrm{p}>0.05$ it can be said that data of variables distributed normally. From the table above, the data of reading comprehension is normal because $0.087>0.05$.

Below is the spread of the normality of the reading comprehension data:

## Chart III. 2



The $\mathrm{Q}-\mathrm{Q}$ plot above shows that the reading comprehension 0 n expository text data are normal because the data points spread around the diagonal line and spreading follow the diagonal line.

## F. The Technique of Data Analysis

The independent variable $\left(\mathrm{X}_{1}\right)$ and $\left(\mathrm{X}_{2}\right)$, and dependent variable $(\mathrm{Y})$ were the three variables correlated. In analyzing the data, the writer chooses the multiple regression based on Syofian Siregar (2013). And the researcher analyze the data through SPSS 16.

Then, to determine the level of correlation between the two variables, the following categories from Cohen (2007:521) were used:

Table III. 19
The Interpretation of Correlation Coefficient

| No | Coefficient Interval | Level of Correlation |
| :--- | :--- | :--- |
| 1 | $0.00-0.10$ | Weak |
| 2 | $0.11-0.50$ | Moderate |
| 3 | $0.51-0.80$ | Strong |
| 4 | $\geq 0.80$ | Very strong |

