CHAPTER III

RESEARCH METHODOLOGY

III.1 Research Design

The design of the research was correlation research. According to Gay (2000: 321), correlational research involved collecting data in order to determine whether, and to what degree, a relationship exists between two or more quantifiable variables. This research consists of three variables; Using internet (X) is independent variable, students' reading comprehension (Y1) and vocabulary mastery (Y2) are dependent variables.

III.2 Time and Location of Research

This research was conducted at the Private Islamic Senior High School MAS PP MTI Tanjung Berulak Kampar. The duration of the research was two months, (May and June 2017).

III.3 Subject and Object of the Research

The subject of this researchwasthe tenth grade students of Private Islamic Senior High School MAS PP MTI Tanjung Berulak. The object of this research is the influence of using internet on students' reading comprehension and vocabulary mastery.

III.4 Population and Sample

III.4.1 Population of the Study

Population is a group of people or items from which the data are collected (Hadi, 1980:35). The population of this research was the first year students of MAS PP MTI Tanjung Berulak Kampar in the academic year 2016/2017 which consisted of two classes (X Science and X Social). Each of the class had the same number of students, 20 students. Thus, the total of the participants were 40 students. To see a clearer description about the population of this research, it is tabulated in the following table:

Table 0.1. Table of Population

Class	Male	Female	Total
X Science	10	10	20
X Social	11	9	20
Total			**80**

III.4.2 Sample of the Study

Best (1981:130) asserts that a sample is a small proportion of the population selected for observation and analysis. Additionally, Kerlinger (1965:118) states that a sample is a part of the population, which is supposed to represent the characteristics of the population. In this research, X Science was taken as samples of the research. The sample of the research is presented in the following table:

Table 0.2. Samples of the Research

Class	Male	Female	Total
X Social	9	11	20

III.5 Instrumentation

In this research, there weretwo independent variables and one dependent variables. The independent variable (X) was using internet, students' reading comprehension (Y1), and vocabulary mastery (Y2) weredependent variables. The independent variable which is elaborated by some indicators will be measured by using questionaire following rating questions model (Singh, 2006:140). And the dependent variables was measured by giving a test due to students' reading comprehension and vocabulary mastery on English news item.

III.5.1 Validity and Reliability

III.5.1.1 Validity

The validity of a measure is the extent to which it measures what we intend it to measure (Bordens, 2011:133). An instrument has its internal validity if the grains and the factors that shape the instrument are not deviated from the instrument function. External validity test is done through try out to the respondents that will be taken as the subject of try out.

Validity is the extent to which inferences made from assessment results are appropriate, meaningful, and useful in terms of the purpose of the assessment (Gronlund:1998). As a process, validation involves collecting and analyzing data

to assess the accuracy of an instrument. Validity consists of four types. They are predictive validity, concurrent validity, construct validity, and content validity or test appropriateness (Tuckman:1978).

Validity can be established by relating a test to some actual behavior of which the test is supposed to be predictive. If a test can be used to predict an outcome in terms of some performance or behavior criterion, then the *predictive validity* of the test can be obtained by relating test performance to subsequent performance on the related criterion. What is usually done in this case is to relate performance on the test with performance on another, well reputed test (if such exists). This procedure is termed *concurrent validity*. Another procedure for establishing the concurrent validity of a test is to compare qualities or performance as assessed by another procedure.

Construct validity is established by relating a presumed measure of a construct or hypothetical quantity with some behavior or manifestation that it is hypothesized to be underlined. Moreover, content validity or test appropriateness refers to the appropriateness of the content of an instrument. In other words, do the measures (questions, observation logs, etc.) This would involve taking representative questions from each of the sections of the unit and evaluating them against the desired outcomes. If a test actually samples 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 (Mousavi, 2002: Hughes 2003).

The validity of the questionnaire was counted by correlating the items with the total number of questions. Sudijono (2007:195) points out that if the r value > the value of r table it means that the item is valid, conversely if the r value is < the value of r table it means that the item is invalid.

III.5.1.2 Realibility

Reliability of a measure concerns its ability to produce similar result when repeated measurements are made under identical conditions (Bordens, 2011:131). The basic strategy for assessing the reliability is to administer the assessment twice to a large group of individuals and then determine the correlation (Pearson r) between the scores on the first and the second administrations. The higher the correlation, the greater the reliability.

Test reliability means that a test is consistent (Tuckman:1978). There are four approaches for determining reliability: test-retest reliability, alternate-forms reliability, split-half reliability, and Kuder-Richardson reliability.

Test-retest reliability, the scores are obtained by each person on the first administration of the test are related to his or her score on the second administration to provide the reliability coefficient. *Alternate-forms reliability* is determined by administering alternate forms of a test to the same people or personand computing the relation between each person's score on the two forms. *Split-half reliability* enables the researcher determines whether the halves of the test are measuring the same quality or characteristics. The obtained correlation

coeficient (r_1) is then entered into the Spearman Brown formula to calculate the whole test reliability (r_2).

III.6 Data Collection Technique

The technique of collecting the data in this study will be given by a set of questionnaire and a set of reading comprehension and vocabulary mastery test to the eleventh grade students in the Private Islamic Senior High School MAS PP MTI Tanjung Berulak.

III.6.1 Questionaire

As mentioned earlier, to know the level of students' intensity in using Internet, the writer set questionare. The questionaire consisted of 13 items to know about students' attitudes dealing with their intensity in using Internet. Thus, the writer used a Likert scale format to measure the strength of their attitudes and opinions (Singh:2006). The table below is shown the degree of statements of the questionaire.

No.	Item Statements
1	I use Internet for fun.
2	I use Internet for education.
3	I use Internet to do assignment from teachers.
4	I use Internet to find material of learning English news item
5	I access Internet in a week
6	I access online news in a day.
7	I access English news through the Internet.
8	1. I do not feel hard to understand English news.

9	I like to access English news
10	I do not feel hard to understand English news
11	I try to overcome my difficulties to understand English news by using dictionary or transtool
12	I try to rewrite difficult words in an English news that I have read.
13	I am helped to understand other texts by accessing English news.

Indicators that will be used to measure the statements are; 1 (never); 2 (seldom); 3 (sometimes); 4(often); 5 (always). But for statements number 4, 5 and 8 are the exception. The statements required specific opinions due to students' intensity in using Internet. However, the writerwill measure the items constantly on the scale 1 to 5.

III.6.1.1 Testing Validity of Questionaire

The validity test is used to measure validity of a questionnaire. A questionnaire is said to be valid if the question on the questionnaire is able to reveal something that is measured by the questionnaire (Ghozali, 2009). The test has done by Pearson product moment correlation method by looking at the correlation coefficient number (rxy) which states the relationship between the item score with the total item (total-correlation) score. The itemwas said to be valid or if $r_{counted} > r_{tabel}$.

To test the items, the value of $r_{counted}$ is obtained by looking at the Corrected Item-Total Correlation value. Whereas the r_{table} is obtained with the equation df = N-2 = 20-2 = 18 = 0.443. The test results of the validity of the variables are presented in the following tables:

Table 0.3. Validity of the Questionnair

Item	R$_{counted}$	R$_{table}$	Result
Q1	0,879	0.443	Valid
Q 2	0,950	0.443	Valid
Q 3	0,890	0.443	Valid
Q 4	0,894	0.443	Valid
Q5	0,942	0.443	Valid
Q 6	0,942	0.443	Valid
Q 7	0,950	0.443	Valid
Q 8	0,890	0.443	Valid
Q 9	0,913	0.443	Valid
Q 10	0,950	0.443	Valid
Q 11	0,888	0.443	Valid
Q 12	0,740	0.443	Valid
Q 13	0,908	0.443	Valid
Q 14	0,942	0.443	Valid
Q 15	0,890	0.443	Valid

Sumber: Data Olahan, 2017

The table indicates the lowest R$_{counted}$ is 0,740 (Q12). Therefore, it can be concluded that all the items of the questionnairs are upper than 0,443. In brief, all the items are valid

III.6.1.2 Testing Reliability of Questionaire

Reliability refers to whether the test is consistent in its score and gives us an indication of how the test score is accurate (Shohamy, 1985:70). It defines as the extent to which a test produces consistent results when it is administered under similar condition (Hatch and Farhady, 1982:243). In addition, Brown (2003) suggests reliability has to do with accuracy of measurement. That is why reliability is important to be measured. The Relibility of the questionnair of this research was conducted using *cronbacbh alpha* test through SPSS 20. The instruments are reliable if the value of the *cronbach alpha*> 0.60 (Ghozali, 2009).

Table 0.4. Reliability of the Test

Reliability Statistics

Cronbach's Alpha	N of Items
,985	15

Table III.4 displays that the value of cronbach's alpha is 0.985 > 0.60. It means that the items of the questionnair are reliable.

III.6.2 Vocabulary Mastery Test

To investigate the student's vocabulary mastery, this study will use multiple choice test which consisted of 20 questions. The participants choose the answer by crossing (A, B, C or D), based on the true answer. To avoid misunderstanding, the items of the tests are shown in the following table:

III.6.2.1 Indicators of Vocabulary Mastery

Table 0.5. Blue Print of the Vocabulary Mastery

No	Indicators of Vocabulary Mastery	Items
1.	The students are able to identify nouns	1, 2, 3, 6, 12
2.	The students are able to identify verbs	7, 13, 17, 20
3.	The students are able to identify adjective	8, 18,
4.	The students are able to identify adverb	9, 19
5.	The students are able to identify synonym	4, 10, 14, 15, 16
6.	The students are able to identify antonym	5, 11

Then, the classification of the students' test score isshown below.

Table 0.6. The Classification of Students' Vocabulary Mastery Score

Score	Categories
80 – 100	Very good
66 – 79	Good
56 – 65	Sufficient
40 – 55	Less
30 – 39	Fail

(LDC Assessment, 2016)

III.6.2.2 Testing Validity of the Vocabulary Test

The test is done by Pearson product moment correlation method by looking at the correlation coefficient number (rxy) which states the relationship between the item score with the total item (total-correlation) score. The item is said to be valid or if $r_{counted} > r_{tabel}$.

To test the items, the value of $r_{counted}$ is obtained by looking at the Corrected Item-Total Correlation value. Whereas the r_{table} is obtained with the equation df = N-2 = 20-2 = 18 = 0.443. The test results of the validity of the variables are presented in the following tables:

Table 0.7. Validity of the Vocabulary Test

Item	$R_{counted}$	R_{table}	Result
Y2_1	0,571	0.443	Valid
Y2_2	0,644	0.443	Valid
Y2_3	0,836	0.443	Valid
Y2_4	0,655	0.443	Valid
Y2_5	0,836	0.443	Valid
Y2_6	0,836	0.443	Valid
Y2_7	0,353	0.443	Valid
Y2_8	0,836	0.443	Valid
Y2_9	0,717	0.443	Valid
Y2_10	0,836	0.443	Valid
Y2_11	0,356	0.443	Valid
Y2_12	0,680	0.443	Valid
Y2_13	0,564	0.443	Invalid
Y2_14	0,564	0.443	Valid
Y2_15	0,836	0.443	Valid
Y2_16	0,673	0.443	Valid
Y2_17	0,573	0.443	Invalid
Y2_18	0,673	0.443	Valid
Y2_19	0,538	0.443	Valid
Y2_20	0,711	0.443	Invalid

Based on the table, it is apparent that there are three items that their $T_{counted}$ are lower than R_{table} (0.443). They are item number 7 (0,353) and 11 (0,356). Therefore, eightenn items were used as a vocabulary mastery test in this research; meanwhile the two others were dismissed.

III.6.2.3 Testing Reliability of the Vocabulary Test

The Relibility of the test of this research was conducted using *cronbacbh alpha* test through SPSS 20. The instruments are reliable if the value of the *cronbach alpha*> 0.60 (Ghozali, 2009).

Table 0.8. Reliability of the Vocabulary Test

Reliability Statistics

Cronbach's Alpha	N of Items
,946	20

Table III.8 displays that the value of cronbach's alpha is 0.946 > 0.60. It means that the items of the questionnair are reliable.

III.6.3 Reading Comprehension Test

A test will use to identify the level of students' comprehension level on reading English news item. The comprehension will be measured based on Langan theory. The students's score could be categorized (Harris, 1986:124) into four level as below:

Table 0.9. Blue Print of the Reading Test

No	Classification of the Question	Number of Question	Total Item
1	Summarizing the selection in a title	1,8, 14	3
2	Determining the main idea	2, 10, 16	3

3	Recognizing key supporting details	3, 9, 15	3
4	Making inference	4, 5, 12, 13, 19	5
5	Understanding vocabulary in context	6, 7, 11, 17, 18, 20	5

III.6.4 Testing Validity of the Reading Test

The test is done by Pearson product moment correlation method by looking at the correlation coefficient number (rxy) which states the relationship between the item score with the total item (total-correlation) score. The item is said to be valid or if $r_{counted} > r_{tabel}$.

To test the items, the value of $r_{counted}$ is obtained by looking at the Corrected Item-Total Correlation value. Whereas the r_{table} is obtained with the equation df = N-2 = 20-2 = 18 = 0.443. The test results of the validity of the variables are presented in the following tables:

Table 0.10. Validity of the Reading Test

Item	$R_{counted}$	R_{table}	Result
Y1_1	0,872	0.443	Valid
Y1_2	0,718	0.443	Valid
Y1_3	0,528	0.443	Valid
Y1_4	0,528	0.443	Valid
Y1_5	0,872	0.443	Valid
Y1_6	0,615	0.443	Valid
Y1_7	0,624	0.443	Valid
Y1_8	0,615	0.443	Valid
Y1_9	0,528	0.443	Valid
Y1_10	0,685	0.443	Valid
Y1_11	0,522	0.443	Valid
Y1_12	0,645	0.443	Valid
Y1_13	0,420	0.443	Invalid
Y1_14	0,872	0.443	Valid
Y1_15	0,890	0.443	Valid
Y1_16	0,872	0.443	Valid
Y1_17	0,341	0.443	Invalid
Y1_18	0,872	0.443	Valid
Y1_19	0,724	0.443	Valid
Y1_20	0,420	0.443	Invalid

Source: Ouput SPSS 20, 2017

Based on the table, it is apparent that there are three items that their $R_{counted}$ are lower than R_{table} (0.443). They are item number 13 (0,420), 17 (0,341),

and 20 (0,420). Therefore, seventeen items were used as a reading comprehension test in this research; meanwhile the three others were dismissed.

III.7 The Technique of Data Analysis

Data analysis is the process of searching and arranging systematically dataObtained from the observation, to find the answer to the problemresearch. One of the purposes of data analysis is toimprove the quality of research results. That is whether the results are acceptablebecause it has been supported by sufficient statistical data; whether the results are provenThere are weaknesses, and the results in the analysis produce conclusionsIn research (Sumarna: 10).

In this study,Multivariate variant analysis (MANOVA) test was conducted through SPSS 20. It is a translation of multivariate analysis of variance (MANOVA). Similar to ANAVA, MANOVA is used to Test different variants. The difference is, in ANAVA the variant that is compared comes fromone dependent variable, whereas in MANOVA, variants were comparedcomes from more than one dependent variable (Subana: 169). This test was carried out to find out whether there is any influence of using internet on students' reading comprehension and vocabulary mastery. However, before using the test, pre-requisite tests were carried out. They were:

a.   Testing Homogeneity of Varience

b.   Testing Homogeneity of Co-Varience