

## **CHAPTER III**

### **RESEARCH METHOD**

This chapter presents research design, population and sample, instrument of the research, data collection and data analysis.

#### **A. Research Design**

The researcher that conducted this study used the correlation approach in their investigation. The correlation is a statistical test that is used to identify the propensity or trend for two or more variables or two sets of data have a consistent relationship with one another. It also builds their link to one another, which is a significant benefit. An application of the Pearson Product Moment Correlation is used in this investigation to ascertain the importance of the connection that exists between two variables. To determine the significance of a link between three variables, one can utilize regression linear (multiple correlations). When there is a positive correlation, both variables increase or decrease together. Strongly positive correlations are shown by correlation coefficients that are close to +1.00. A negative correlation between two variables suggests that one variable drops as the other increases. Strongly negative correlations are indicated by correlation coefficients that are close to -1.00.<sup>67</sup>

To determine the degree of correlation between three variables, the researchers choose this sort of study using statistics quantitative in coefficient correlation. In detail, researcher uses three types of variables were self-regulated learning (X1), Vocabulary Mastery (X2), and Reading Comprehension (Y).

---

<sup>67</sup> Wiersma, William. Research Methods in Education. (USA: A Pearson Education Company.2000) .67

## B. Participants of the Research

Population is any group that is the focus of the investigation is considered. A population is an assortment of items or persons with distinct attributes and traits that are examined by researchers in order to derive conclusions. Students at SMAN 1 Kediri were the research population. There was no random sampling employed in the population selection process. Twelve classes in this grade for students in the tenth grade at SMAN 1 Kota Kediri, there are 456 students. This is the population table.

**Table 3.1 Table of Population**

<b>Class</b>	<b>Total of Students</b>
X – A	38
X – B	38
X – C	38
X – D	38
X – E	38
X – F	38
X – G	38
X – H	38
X – I	38
X – J	38
X – K	38
X – L	38
<b>TOTAL</b>	<b>456</b>

The sample is subset of the population chosen for research purpose. A representative sample of the population under study is required. A sample is a

group of people selected according to specified criteria from a wider population.<sup>68</sup> If the subject has fewer than 100 participants, everyone should take it all; if the object has more than 100 participants, then 10-15% or 20–25% or more should be taken.<sup>69</sup> Class X-L was the sample that the researcher chose for this investigation. To assess the validity and reliability of the test, samples from those populations will need to complete one class in which they will be asked to try out the instrument. The researcher uses the class X-H until K of 35% of the population—roughly 152 students—as a sample to collecting data from that population.

**Table 3.2 Table of Sample**

<b>Class</b>	<b>Total of Students</b>
X – H	38
X – I	38
X – J	38
X – K	38
<b>TOTAL</b>	<b>152</b>

### **C. Research Instruments**

In this research, two instrument kinds of devices were used by the researchers in this study to collect data. These are questionnaire and tests. First, a questionnaire was used to gauge how well students managed their own learning. Then, the reading comprehension and vocabulary mastery tests were administered. The next subtopic provides a more thorough explanation of the device.

<sup>68</sup> Goddard, W. & Melville, Stuart. *An Introduction: Research Methodology*. Second Edition. (Lansdowne: The Berne Convention. 2001). 34.

<sup>69</sup> Arikunto, S. 2010. *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.

## 1. Questionnaire

The first instrument is the Self-Regulated Learning Questionnaire. The questionnaire is a data collection tool that includes sending out a list of written questions to respondents and compiling their answers. The instrument used in this study to collect the data needed for the investigation is a self-regulated learning questionnaire. The researcher adopted Zimmerman questionnaire. To make it easier for the students to understand the meaning of the statement, the questionnaire was available to them in Indonesian. There are 30 items require testing and validation. To ascertain the grades awarded to the Students, the author utilized a closed-ended questionnaire. The responders to this questionnaire reviewed the answers that the author had provided.

Four options were provided in the questionnaires based on the Likert Scale Types. The Likert scale is used to measure an individual's feelings, thoughts, and perceptions on a given topic. The following explanation was given for the questionnaire's indicators:<sup>70</sup>

**Table 3.3 Scores of Self-Regulated Learning Response Questionnaire**

Indicator Score	Positive	Negative
Always	4	1
Often	3	2
Rarely	2	3
Never	1	4

Students were given a long questionnaire with plenty of questions. Theory Zimmerman states that metacognition, motivation, and behavior are

---

<sup>70</sup> Arthur Hughes, *Testing for Language Teacher* (Cambridge:University Press,2003), P 135

indicators of self-regulated learning.<sup>71</sup> The researcher asked students to make one selection in this section. It suggests that their answers should disclose something about themselves or appropriately demonstrate how they have learned through self-regulation. The researcher also produced the complete Self-Regulated Learning questionnaire, which is included in (Appendix 1). The table below shows the indicator utilized by the questionnaire author.

**Table 3.4 Self-Regulated Indicator**

No	Indicators	Item Number
1	Metacognitive	3,4,7,8,9,11,15,12,20,22,23,24,25,26
2	Motivation	1,2,5,6,10,12,16,17,21
3	Behavior	13,14,18,19,27,28,29,30

## 2. Test

A test is a set of questions or exercises designed to evaluate a person or group's intelligence, knowledge, skill, or talent.<sup>72</sup> To determine their reading comprehension and vocabulary levels, students complete a test. A test is a tool used to evaluate an individual's performance, knowledge, and abilities in a certain field.<sup>73</sup>

In this study, to gather data from the sample, the researcher employed reading comprehension and vocabulary mastery tests. For this test, the author used multiple-choice questions. The researcher undertakes a tryout on the sample before doing the actual test.

<sup>71</sup> Zimmerman, 2015. *"Self-regulated learning: an overview of metacognition, motivation and behavior"*. Journal of Initial Teachers (University of Canterbury: New Zealand), 25

<sup>72</sup> Arikunto, S. 2010. P 150

<sup>73</sup> Brown, H. D. (2004). *Language Assesment: Principle and Classroom Practice*. United State: Pearson Education

### a. Vocabulary Test

Participants take a test to measure their skill in English Vocabularies. The researcher created this examination by examining the fundamental skills found in textbooks for senior high school. Word types (word classification, word meaning, and word creation) were the main focus of the vocabulary test. The vocabulary test questions were adopted from books for the tenth grade and other sources that were appropriate for their level and subject matter. There were 50 items before the validation. Multiple-choice examinations are used to assess vocabulary. Each test question is stated in terms of operational conceptions, with four possible answers: A, B, C, and D. Students will obtain a score of four if they successfully answer each exam question. Students will receive a zero if they provide an inaccurate response. On this test, a maximum score of 100 points is possible. Students' vocabulary mastery is graded in this manner.

$$\text{Students' Score} = \text{Students' Correct Score} \times 4$$

The whole Vocabulary Mastery test was also produced by the researcher, which is included in (Appendix 2). The following table displays the indicators that the author utilized for the test:

### 3.5 Vocabulary Test Indicators

The Objective	Indicator	Item number	Total
Vocabulary mastery refers to students' knowledge of words. It also addresses the meaning of individual words and the procedures for incorporating	1. Word classification a. Noun b. Verb c. Adjective d. Adverb	1,2,3,4,5, 6,7,8,9,10, 41,42	12
	2. Word meaning a. Synonym b. Antonym	11,12,13,14,15 16,17,18,19,20,43 ,44	12

those words into a language. The vocabulary mastery elements used are adjective, verb, noun, adverb, synonym, and antonym.	3. Word Function a. Preposition b. Article c. Pronoun	21,22,23,24,25, 26,27,28,29,30,45 ,46, 49,50	14
	4. The students can employ suitable word choice	31,32,33,34,35,36 ,37,38,39,40,47, 48	12
<b>Total</b>			<b>50</b>

During the course of this investigation, the researcher provided 50 items to a single class that was not included in the research sample. This was done in order to evaluate the validity and reliability of the vocabulary mastery exam. Following the completion of the test, the results are analyzed using SPSS version 26, which is then used to identify which items are valid or invalid. This means that the observed value for each item must be greater than the r-table in order for the items to be considered valid. It is possible to discover that these items do not have a significant correlation with the overall score (also known as invalid), and they need to be removed or corrected if the analysis reveals that the observed value is lower than the r-table.

After completing the tryout and the data is evaluated using SPSS version 26 to determine which items are valid or invalid. Based on the validity, there are 25 items is valid. It is number:

### 3.6 The Items' Validity of Vocabulary Mastery

No	Indicator	Item Number
1	Word Classification	1,2,4,5,8,9,41,42

2	Word Meaning	11,13,15,17,18,19,20,43
3	Word Function	24,26,30,46,49
4	Word Choice	31,32,33,34

#### **b. Reading Comprehension Test**

This exam is designed to assess students' comprehension and ability to respond to questions regarding the material they have read. The researcher created this examination by examining the fundamental skills found in textbooks for senior high school. The reading comprehension questions were adopted from books of the tenth grade. Additionally, the researcher employed a multiple-choice test. There were 50 items on this test before the validation. There are five alternative responses for each question: A, B, C, D, and E. The test is assessed in the following manner: students receive a score of two for each question they successfully answer. A zero will be awarded to students who answer the questions incorrectly. The highest possible score on this test is 100 points.

$$\text{Students' Score} = \text{Students' correct score} \times 2$$

The researcher also produced the reading comprehension exam in its entirety, which is included in (Appendix 3). The following table displays the indicators that the author utilized for the test:

**Table 3.7 Reading Comprehension Tests Indicators**

No	Indicators	Item Number
1	Finding Main Idea	2,6,9,11,15,22,24,30,33,37,38,44,46
2	Finding Factual Information	3,7,8,19,20,25,27,28,31,34,35,36,39,41,42,43,47,50
3	Finding Meaning of Vocabulary	8,10,12,16,21,45



4	Finding Inference	1,5,14,18,32,48
5	Finding Reference	4, 9,13,17,23,26,29,41,49

The researcher provided 50 items to a single class that was not included in the research sample. This was done in order to evaluate the validity and reliability of the vocabulary mastery exam. Following the completion of the test, the results are analyzed using SPSS version 26, which is then used to identify which items are valid or invalid. This means that the observed value for each item must be greater than the r-table in order for the items to be considered valid. It is possible to discover that these items do not have a significant correlation with the overall score (also known as invalid), and they need to be removed or corrected if the analysis reveals that the observed value is lower than the r-table.

After completing the tryout and the data is evaluated using SPSS version 26 to determine which items are valid or invalid. Based on the validity, there are 25 items is valid. It is number:

### 3.8 The Items' Validity of Reading Comprehension

No	Indicator	Item Number
1	Finding Main Idea	15,22,23,24,30,46
2	Finding Factual Information	7, 19,20,25,31,43
3	Finding Meaning of Vocabulary	8,10,12,16,21
4	Finding Inference	5,14,32
5	Finding Reference	4,9,13,17,23,49

#### D. Validity

If the instrument can measure what the researchers want it to measure, then it is valid. Validity is the degree to which the researcher's particular

conclusions are sound, correct, significant, and worthwhile. Using that justification, the researcher claims that validity is necessary for research since it plays a crucial role in evaluating the precision of the data collection tool. The researcher uses IBM SPSS 26.0 to calculate the Pearson Product Moment for the Self-Regulated Learning Questionnaire, Vocabulary Mastery Test, and Reading Comprehension Test. The test is deemed valid if the r-result is greater than the r-table. The test is deemed invalid if the r-result falls below the r-table.

**Table 3.9 Validity Result of Self- Regulated Learning**

No.	R hitung	R Tabel	Keterangan
1	0,376	0,320	VALID
2	0,456	0,320	VALID
3	0,488	0,320	VALID
4	0,216	0,320	INVALID
5	0,425	0,320	VALID
6	0,533	0,320	VALID
7	0,711	0,320	VALID
8	0,540	0,320	VALID
9	0,194	0,320	INVALID
10	0,475	0,320	VALID
11	0,453	0,320	VALID
12	0,270	0,320	INVALID
13	0,325	0,320	VALID
14	0,604	0,320	VALID
15	0,241	0,320	INVALID
16	0,490	0,320	VALID
17	0,672	0,320	VALID
18	0,709	0,320	VALID
19	0,407	0,320	VALID
20	0,532	0,320	VALID
21	0,697	0,320	VALID
22	0,527	0,320	VALID
23	0,599	0,320	VALID
24	0,325	0,320	VALID
25	0,375	0,320	VALID
26	0,640	0,320	VALID
27	0,210	0,320	INVALID

28	0,368	0,320	VALID
29	0,699	0,320	VALID
30	0,744	0,320	VALID

Based on the table, the researcher decided that 30 items are valid at the level of significance ( $\alpha = 0.05$  for  $N = 38$ ) of 0.320. There are 25 acceptable items because  $r\text{-value} > r\text{-table}$ . There are 5 invalid items due to  $r\text{-value} < r\text{-table}$ .

**Table 3.10 Validity Result of Vocabulary Mastery**

No.	R hitung	R Tabel	Keterangan
1	0,412	0,320	VALID
2	0,383	0,320	VALID
3	0,294	0,320	INVALID
4	0,363	0,320	VALID
5	0,358	0,320	VALID
6	0,264	0,320	INVALID
7	0,141	0,320	INVALID
8	0,551	0,320	VALID
9	0,526	0,320	VALID
10	0,163	0,320	INVALID
11	0,333	0,320	VALID
12	0,303	0,320	INVALID
13	0,493	0,320	VALID
14	0,215	0,320	INVALID
15	0,609	0,320	VALID
16	0,216	0,320	INVALID
17	0,471	0,320	VALID
18	0,493	0,320	VALID
19	0,555	0,320	VALID
20	0,405	0,320	VALID
21	0,256	0,320	INVALID
22	0,309	0,320	INVALID
23	-0.023	0,320	INVALID
24	0,411	0,320	VALID
25	0,225	0,320	INVALID
26	0,490	0,320	VALID
27	0,294	0,320	INVALID
28	0,286	0,320	INVALID
29	0,310	0,320	INVALID

30	0,532	0,320	VALID
31	0,423	0,320	VALID
32	0,470	0,320	VALID
33	0,404	0,320	VALID
34	0,369	0,320	VALID
35	0,218	0,320	INVALID
36	0,029	0,320	INVALID
37	-0.044	0,320	INVALID
38	0,143	0,320	INVALID
39	0,315	0,320	INVALID
40	0,274	0,320	INVALID
41	0,488	0,320	VALID
42	0,477	0,320	VALID
43	0,485	0,320	VALID
44	0,272	0,320	INVALID
45	0,289	0,320	INVALID
46	0,474	0,320	VALID
47	0,204	0,320	INVALID
48	0,036	0,320	INVALID
49	0,545	0,320	VALID
50	0,206	0,320	INVALID

Based on the table, the researcher decided that 50 questions are valid at the level of significance ( $\alpha = 0.05$  for  $N = 38$ ) of 0.320. There are 25 acceptable items because  $r\text{-value} > r\text{-table}$ . There are 25 incorrect items because  $r\text{-value} < r\text{-table}$ .

**Table 3.11 Validity Result of Reading Comprehension**

No.	R hitung	R Tabel	Keterangan
1	0,047	0,320	INVALID
2	0,004	0,320	INVALID
3	0,252	0,320	INVALID
4	0,536	0,320	VALID
5	0,486	0,320	VALID
6	0,076	0,320	INVALID
7	0,398	0,320	VALID
8	0,677	0,320	VALID
9	0,344	0,320	VALID
10	0,573	0,320	VALID
11	0,127	0,320	INVALID
12	0,486	0,320	VALID
13	0,378	0,320	VALID
14	0,410	0,320	VALID
15	0,330	0,320	VALID
16	0,623	0,320	VALID
17	0,557	0,320	VALID
18	0,180	0,320	INVALID
19	0,629	0,320	VALID
20	0,519	0,320	VALID
21	0,400	0,320	VALID
22	0,458	0,320	VALID
23	0,404	0,320	VALID
24	0,463	0,320	VALID
25	0,528	0,320	VALID
26	0,223	0,320	INVALID
27	0,017	0,320	INVALID
28	0,013	0,320	INVALID
29	0,289	0,320	INVALID
30	0,342	0,320	VALID
31	0,409	0,320	VALID
32	0,373	0,320	VALID
33	-0.091	0,320	INVALID
34	0,059	0,320	INVALID
35	-0.077	0,320	INVALID
36	0,251	0,320	INVALID
37	0,166	0,320	INVALID
38	0,204	0,320	INVALID
39	0,250	0,320	INVALID

40	0,149	0,320	INVALID
41	-0.014	0,320	INVALID
42	0,205	0,320	INVALID
43	0,361	0,320	VALID
44	0,251	0,320	INVALID
45	0,187	0,320	INVALID
46	0,398	0,320	VALID
47	0,297	0,320	INVALID
48	0,043	0,320	INVALID
49	0,453	0,320	VALID
50	0,118	0,320	INVALID

Based on the table, the researcher decided that 50 questions are valid at the level of significance ( $\alpha = 0.05$  for  $N = 38$ ) of 0.320. There are 25 acceptable items because  $r\text{-value} > r\text{-table}$ . There are 25 incorrect items because  $r\text{-value} < r\text{-table}$ .

### **E. Reliability**

Reliability and validity are interdependent. Dependability is the extent to which an individual's scores remain consistent from one use of the instrument to the next and from one set of items to another. It suggests that when the researcher administers the instrument more than once and at different times, the results should be almost comparable. A trustworthy instrument can be used to acquire data and handle trustworthy information. The researcher will use SPSS for Windows version 26.0 to perform a reliability test in order to determine the test's applicability, even if some of the questions and content were adopted from the Educational and Cultural Ministry's English book, which was reviewed and corrected prior to publication. The test is deemed reliable if  $r\text{-obtained}$  is greater than  $r\text{-table}$ . What determines the dependability coefficient is:

**Table 3.12 The Coefficient of Reliability**

<b>Coefficient Interval</b>	<b>Levels of Reliability</b>
0.80 < 1.00	Very high reliability
0.60 < 0.80	High reliability
0.40 < 0.60	Fair reliability
0.20 < 0.40	Low reliability
0.00 < 0.20	Very low reliability

The researcher used the Alpha Cronbach Formula and SPSS 26.0 to determine the reliability of Self Regulated Learning. The results of the reliability test are presented in the table below:

**Table 3.13 Reliability of Self-Regulated Learning**

<b>Reliability Statistics</b>	
Cronbach's Alpha	N of Items
0.880	30

Table 3.13 shows that the reliability coefficient for self-regulated learning is 0.880 in  $r\text{-table} = 0.320$  at the level of significance 0.05 for a total of 38 students. It signifies that all of the items in the Self-Regulated Learning questionnaire are very highly reliable and can be used on the following test.

The reliability of the Vocabulary Mastery test was also tested using SPSS, as shown in the table below:

**Table 3.14 Reliability of Vocabulary Mastery**

<b>Reliability Statistics</b>	
Cronbach's Alpha	N of Items
0.841	50

Table 3.14 shows that the reliability coefficient for students' vocabulary mastery is 0.841 in  $r\text{-table} = 0.320$  at the level of significance 0.05 for the number of students is 38. It signifies that all of the vocabulary mastery exam items are very highly reliable and can be utilized in subsequent tests.

The reliability of the Reading Comprehension exam was also tested using SPSS, as shown in the table below:

**Table 3.15 Reliability of Reading Comprehension**

<b>Reliability Statistics</b>	
Cronbach's Alpha	N of Items
0.735	50

The table 3.15 shows that the reliability coefficient for students' reading comprehension is 0.735 in  $r\text{-table} = 0.320$  at the level of significance 0.05 for a total of 38 students. It signifies that all of the items on the reading comprehension test are extremely dependable and can be utilized in the next test.

## **F. Data Collection**

The collecting the data listed below are used to gather data. The test's instrument will be distributed through reading comprehension and vocabulary tests, as well as a questionnaire designed to gather information on self-regulated learning. Every sample that completed the exam is used by the researcher. To conduct this investigation, the researcher followed certain procedures. Authorization from SMAN 1 Kota Kediri is obtained by the researcher prior to starting the study. With permission from the school, the researcher conducted a number of procedures in order to gather data.

Making the self-regulated learning questionnaire was the first step. There



are thirty closed-type items in it, and uses paper were employed. In the second step, the student receives the test from the researcher after completing the questionnaire. A vocabulary exam comes first. This is a 60-minute test with 50 multiple-choice questions. The reading comprehension test is the second. It lasts 60 minutes and has 50 multiple-choice questions.

Following the successful completion of all the data entry, the researcher verified the responses and tabulated them using Microsoft Excel. In order to assess the correlation of all the data in this experiment, researchers processed the data using SPSS software version 26.00 as a window.

### **G. Data Analysis**

The researcher employed a quantitative analysis to determine how to interpret the data after it was collected. Data analysis is the process of using test and questionnaire responses to determine student scores. The researcher used scoring tools and the Pearson product moment calculation to determine the correlation between two variables when analyzing the data. Furthermore, the Pearson's correlation coefficient is limited to describing the linear relationship between two variables and determining the normality of the data. In the meantime, a method known as multiple correlations (regression linear) can be used to analyze the correlation between the three variables. The concept of multiple correlations refers to the simultaneous knowledge of two or more variables, such as self-regulated learning (X1), vocabulary mastery (X2), and along with students' reading comprehension (Y).

To get a deeper understanding of each variable, the researcher will utilize Microsoft Excel to compute the mean of each score element that is a component

of each variable. This will allow the researcher to gain greater insight into each variable. After that, the researcher will compare the mean scores in order to determine which aspect of the grading system the students are lacking in. Pearson Product Moment analysis was used by the researchers in order to investigate the levels of correlation that existed between the two evaluators. The program used was SPSS version 26.00 for Windows. The coefficient's interpretation as follows<sup>74</sup>:

**Table 3.16 The Interpretation of Significant Standard Coefficient Correlation**

<b>Coefficient Correlation</b>	<b>Meaning of Interpretation</b>
0.80-1.00	Very High Correlation
0.60-0.79	High Correlation
0.40-0.59	Enough Correlation
0.20-0.39	Low Correlation
0.00-0.19	Very Low Correlation

The correlation is shown in the table ranging from extremely high correlation to extremely low correlation. This coefficient standard is applied when using an interval or ratio scale of measurement. There is a chart of coefficient correlation to determine if the correlation is high or low after measuring it with this formula. The coefficient correlation between the variables might then be displayed using the value of  $r$  as follows:

- a. Positive correlations occur when both variables increase or decrease simultaneously. Strongly positive correlations were indicated by correlation coefficients of + 1.00.
- b. Negative correlations show that when one variable increases, the amount of the other decreases. A high negative correlation was suggested by a correlation coefficient that was near to -1.00.

---

<sup>74</sup> Sugiyono. (2012). "Metode Penelitian Kuantitatif Kualitatif dan R&D". Bandung: Alfabeta.

- c. There is no connection, suggesting that the two variables have no link at all. There is no association when the correlation coefficient is 0.

To determine the significant hypothesis based on the value of coefficient correlation were formulated as follows:

$\text{Sig} < 0.05$   $H_0$  is rejected,  $H_a$  is accepted. It indicates that a correlation

$\text{Sig} > 0.05$   $H_0$  cannot be rejected,  $H_a$  is accepted. It means there is no correlation