CHAPTER III
RESEARCH METHODOLOGY

A. Research Design

The researcher uses quantitative research method in this study. Quantitative method can be referred to as scientific methods that are concrete, empirical, objective, rational, and systematic.[1] Quantitative method uses data in the form of numbers with various classifications, such as in the form of average values, percentages, maximum values, minimum value and others. These data are used to test the hypothesis. Data processing in quantitative method uses a statistical formula that is appropriate to the type of data.[2]

This research uses a correlational study. Correlational study aims to ascertain the correlation between two or more variables based on the correlation coefficient.[3] That is, this research design seeks to examine whether there is an increase or decrease in one variable according to an increase or decrease in another variable. When two variables change together in the same direction, it is called a positive correlation. Conversely, if two variables change together in opposite directions, it is called a negative correlation. So, in this research, the researcher analyzed the data taken from the students' tests which consisted of their mastery in using simple present tense and their ability in writing of analytical exposition texts.

B. Research Variables

Research variables are properties, attributes, or values of people, objects, or activities that have certain variations that are set to be studied, and then conclusions are drawn. This research has two kinds of variables, they are independent variable and dependent variable. The independent variable is the variable that affects or the cause of changes in the independent variable. While, the dependent variable is a variable that is affected or becomes effect (because of the independent variable).[4]

In this research, the researcher correlates the mastery in using simple present tense with the students' ability in writing of analytical exposition texts. It can be said that this research consisted

---

[1]Sugiyono, *Metode Penelitian Kualitatif, Kuantitatif, dan R&D,* (Bandung: Alfabeta, 2013), 7.

[2] Mahmud, *Metode Penelitian Pendidikan*, (Bandung: Pustaka Setia, 2011), 29.

[3] Mahmud, *Metode Penelitian...*, 33.

[4] Sugiyono, *Metode Penelitian Kualitatif...,* 38-39.

of two variables. The first variable is the students' mastery in simple present tense, which is called the independent variable (X), while the second variable is the students' ability in writing analytical exposition text, which is called the dependent variable (Y). The diagram below is a correlation of research variables:

Figure 3.1 The Correlation of Research Variables

$$\boxed{X} \quad \boxed{=>} \quad \boxed{Y}$$

Note :

X   =   Students' mastery in using simple present tense

Y   =   Student's ability in writing of analytical exposition text

C. Operational Definition of Variables

The operational definition of variables is described to explain the variables used in this research. So that there are no gaps or misperceptions of the variables presented in this research.

1. Students' Simple Present Tense Mastery

    The ability of students to state events that are factual, repeated, and currently are expressed in nominal sentences or verbal sentences which include positive, negative, or interrogative sentences with verbs 1.

2. Students' Ability in Writing Analytical Exposition Text

    The ability of students to convey information to someone or public in written form that contains ideas about an important phenomenon by using five aspects, among them are content, organization, grammar, vocabulary, and mechanics.

D. Research Population/Sample

The data used in the research can be in the form of a population or a sample. The population is the whole object or individual to be studied which has certain characteristics, clear, and complete.[5] The researcher took the population from all students of the eleventh grade at MA Darul Ulum Purwogondo in the 2021/2022 academic year. The total population was 122 students which consist of three majors of study, among them are science, social, and language. The following is the number of the elevent grade students at MA Darul Ulum Purwogondo:

---

[5] Mahmud, *Metode Penelitian...,* 154.

25

Table 3.1 Student Population of the Eleventh Grade

Class	Gender		Total
	Female	Male	
XI MIPA	23	11	33
XI IPS 1	18	15	34
XI IPS 2	15	15	30
XI Bahasa	24	12	25
Population			122

After finding the population, the researcher reduced the object of research. That is, the researcher only selected a part which was considered representative of the population. This stage is called sampling.[6] The sample is part of the population that is the object of research. The research sample selected must be representative or can represent the population.[7]

In determining the research sample, the researcher used two theories, they are from Arikunto and Fraenkel et al. For the first, Arikunto (Cited in Hatmoko) stated that if the subject is less than 100, then the researcher can take all of those subjects, so that the research is called a population study. But if the number of subjects is more than 100, then the researcher can take between 10-15% or more than 20%.[8] For the second, Fraenkel et al, stated that most researchers took samples with a number of not less than 30 in correlational studies. If the data obtained from the sample is smaller than 30, then the estimated data produced is inaccurate. However, if the sample used is greater than 30, it will provide significant data result.[9]

Based on the theories presented by Arikunto and Fraenkel et al, the researcher took a sample of 27% of the population, so that the number of samples produced was 33.

E. Instrument and Data Collection Technique

The technique used to collect data in this research is a measurement technique. The measurement technique involves standardized instruments which will then produce measurement data

---

[6] Mahmud, *Metode Penelitian...,* 155.

[7] Mahmud, *Metode Penelitian...,* 114.

[8] Jefri Hendri Hatmoko, *Survei Minat dan Motivasi Siswa Putri terhadap Mata Pelajaran Penjasorkes di SMK se-Kota Salatiga Tahun 2013*, Journal of Physical Education, Sport, Health and Recreations, April (2015): 1731.

[9]Jack R, Fraenkel, et al. *How to Design and Evaluate Research in Education.* Eight Edition. (New York: Mc-Graw Hill, 2012), 338.

in the form of numbers. In the measurement technique, there are two kinds of instruments, they are tests and scales.[10]

Instruments are tools used by researchers to measure natural or social phenomena.[11] The researcher applied the tests as instruments to collect data. The type of test used here was an achievement test. The researcher used two kinds of types to obtain empirical data regarding students' mastery in using simple present tense and the ability to write analytical exposition texts. Those tests are grammar and writing tests.

1. Grammar Test in Using Simple Present Tense

In this test, the researcher applied the "completion test". This is because the assessment technique on the test is quite easy. In addition, it is more practical for students to answer. Based on directions from validator, the simple present tense test is adapted from the English learning modules for the eleventh grade. For the try out test, there are 50 questions contained in 5 analytical exposition texts.

Those analytical exposition texts were adapted from Ministry of Religious Affairs and Minister of Education and Culture English learning module for the eleventh grade. The students were asked to write the correct form of simple present tense. The researcher allowed the students to work on 50 questions in 45 minutes. The specifications of simple present tense test can be seen in the tables below:

Table 3.2 Specifications of Try Out Test
for Simple Present Tense

Indicator	Number of Items	Item Number
Positive form in verbal sentence	34	1, 4, 5, 7, 9, 10, 11, 12, 13, 14, 15, 19, 20, 21, 22, 23, 25, 26, 27, 28, 30, 31, 32, 34, 36, 37, 39, 42, 43, 44, 45, 46, 48, 49
Negative form in verbal sentence	3	3, 17, 47
Interrogative form in verbal sentence	-	-
Positive form in	10	2, 6, 8, 16, 18, 29, 33, 35,

---

[10] Nana Syaodih Sukmadinata, *Metode Penelitian Pendidikan,* (Bandung: PT Remaja Rosdakarya Offset, 2012), 222.

[11] Sugiyono, *Metode Penelitian Kualitatif...,* 102.

nominal sentence		41, 50
Negative form in nominal sentence	3	24, 38, 40,
Interrogative form in nominal sentence	-	-
Total	50 Items	

As for knowing the score of each student in try out test of simple present tense, the researcher used the following formula:

$$SC \quad = \quad NT \times 2$$

Note:

SC = Score Total

NT = Number of correct answers

2. Writing Test of Analytical Exposition Text

In this test, the researcher used the type of essay test. This is because the researcher feels that the writing test will be better if it gives students the freedom to express all the ideas they have. So in this test, the researcher asked students to write an analytical exposition text entitled "should students be allowed to bring smartphones in offline class?". Content of the text must match the title and include a complete general structure. In addition, students have to use vocabulary, mechanics, and grammar properly. Students were given 45 minutes to take the test.

In evaluating students' writing scores, the researcher used the assessment adapted from Brown. Aspects of writing that are assessed include content, organization, vocabulary, grammar, and mechanics. The total score in the analytical exposition text writing test in this research is 100 points. Each aspect of the scoring rubric is given a score from 1 to 4. The content has a weight of 30% because it is the main aspect to determine the relationship between one sentence and another. Organization and grammar are given 20% because they have an important role in supporting the content of the writing. For the last two aspects, vocabulary and mechanics are given lower weight, at 15%, because they just a complement of the writing.

Table 3.3 Writing Ability Specifications on Analytical Exposition Text

Aspect	Criteria	Score	Weighting
Content (C)	The topic written is complete and clear. In addition, the detail described is also related to the topic.	4	3x (30%)
	The topic written is complete and clear, but the detailed description is lacking or almost related to the topic.	3	
	The written topic is representative of the whole and clear, but the detail is not related to the topic.	2	
	The topics written are completely unrelated. In addition, the detail is very unrelated to the topic.	1	
Organization (O)	The writer's identification of the topic is representative of the whole. The descriptions are also structured with the right links.	4	2x (20%)
	The writer's identification is almost entirely representative. The descriptions are structured with almost right links.	3	
	The writer's identification is not representative. The descriptions are structured with a few inappropriate links.	2	
	The writer's identification is not representative. The descriptions are structured with inappropriate links.	1	
Grammar (G)	The writing contains very few grammatical or agreement inaccuracies	4	2x (20%)

29

	The writing contains few grammatical or agreement inaccuracies. In addition, it does not affect the meaning.	3	
	The writing contains many numerous grammatical or agreement inaccuracies.	2	
	The writing contains frequent grammatical or agreement inaccuracies.	1	
Vocabulary (V)	The writer can use effective word choice and tenses.	4	1,5x (15%)
	There are a few inappropriate vocabularies, word forms. It does not change the meaning.	3	
	The writing contains a limited range of words and confusing word forms.	2	
	The writer has very poor knowledge of words and word forms. In addition, the vocabulary written is not understandable.	1	
Mechanics (M)	The writer can use correct spelling, punctuation, and capitalization.	4	1,5x (15%)
	The writing has occasional errors of spelling, punctuation, and capitalization.	3	
	The writing has frequent errors of spelling, punctuation, and capitalization.	4	
	The writing is dominated by errors of spelling, punctuation and capitalization.	1	

The total score measurement system of the analytical expostition text test, as follows:

$$ SC = \frac{(3 \, x \, C) + (2 \, x \, O) + (2 \, x \, G) + (1{,}5 \, x \, V) + (1{,}5 \, xM)}{40} \, x \, 100 $$

Note:

SC = Score Total

30

C = Score of Content
O = Score of Organization
G = Score of Grammar
V = Score of Vocabulary
M = Score of Mechanics

F. Validity and Reliability

1. Validity

The term "validity" refers to the truth, appropriateness, meaningfulness, and specific use of conclusions that researchers make based on the data they collect.[12] It means that validity test is used to measure whether the instrument is valid or not.

a. Validity for Grammar Test

In testing the validity of each item in the simple present tense test, the researcher conducted a try out on April 12, 2022 at MA Darul Ulum Purwogondo. In conducting the try out, the researcher selected the XI IPS class with a total of 34 students. The number given by the researcher was 50 questions. Students must complete the blank sentences with the appropriate simple present tenses. The purpose of the try out was to see whether each item in the instrument was feasible or not to be used as an instrument in this research. To see the results of this validity, researcher used the SPSS (Statistical Package for Social Science) version 25.0 program. The criteria for testing the validity using SPSS are as follows:

Table 3.4 The criteria for Testing the Validity

Requirement	Result
r-item > r-table	valid
r-item < r-table	invalid

Based on the results obtained, it shows that there are 33 valid question items, among them are 1, 2, 4, 5, 6, 8, 9, 10, 11, 12, 16, 17, 18, 21, 24, 25, 28, 31, 33, 34, 35, 36, 37, 38, 40, 42, 43, 45, 46, 47, 48, 49, 50 items number. In addition, there are 17 items that are not valid, they are 3, 7, 13, 14, 15, 19, 20, 22, 23, 26, 27, 29, 30, 32, 39, 41, 44 items number. It can be concluded that there are 33 question items that can be used in the real test. In calculating the score of each student

---

[12] Jack R Fraenkel, et al., *How to Design and Evaluate Research in Education: Eight Edition*, (New York: Mc-Graw Hill, 2012), 148.

on the real test of simple present tense, the researcher used the following formula:

$$SC = \frac{NT}{NQ} \; x \; 100$$

Note:

SC = Score Total

NT = Number of Correct Answers

NQ = Number of Questions

b. Validity for Writing Test

Content validity was used to test the instrument of writing skills. The instrument is included in the type of achievement test, which aims to measure student learning outcomes that have been studied in school. In designing this test, the researcher must adjust the specifications of the test to the research objectives. Therefore, content validity is highly emphasized as a consideration in research that uses achievement test.[13]

Content validity relates to the designed properties which are based on cautious examination of textbooks, syllabus, objectives, and subject matter.[14] Based on the 2013 Curriculum for high school students, analytical exposition texts and simple present tense are taught to the eleventh grade students.

Validation instruments in this research were carried out by raters or validators to evaluate and assess the quality of the instruments that have been made. According Guion (Cited in Sujarwadi), content validity can only be determined based on expert judgment. It means that content validity is a type of validity where the instrument that has been made is feasible or not to be used in research after getting an assessment from rater or validator. The experts' judgment determines that the instrument is valid based on the grids that have been made previously.[15] The researcher conducted a content validity test by selecting two validators, they were Laili Ni'amah, S.Pd and Azizah Maulina Erzad, M.Pd. The

---

[13] Syahrum and Salim, *Metodologi Penelitian Kuantitatif.* (Bandung: Citapustaka Media, 2012), 145.

[14] John W Best and James V Kahn, *Research in Education,* Seventh Edition, (New Delhi: Prentice-Hall of India, 1995), 219.

[15] Sri Sujarwadi, *Validitas dan Reliabilitas Instrumen Penelitian,* (Jakarta: Universitas Negeri Jakarta, 2011), 5.

32

resulting data is processed using the Aiken's V formula, as follows:[16]

$$V = \frac{\sum s}{n\,(c-1)}$$

Note:

s = r – lo
lo = The lowest rating score of validity
c = The highest rating score of validity
r = The rater's score
n = Number of raters

Table 3.5 Result of Content Validity

Item	Rater 1	Rater 2	s1	s2	∑s	n(c-1)	V	Result
1	5	4	4	3	7	8	0.87	Medium
2	5	5	4	4	8	8	1.00	High
3	5	5	4	4	8	8	1.00	High
4	5	4	4	3	7	8	0.87	High
5	4	4	3	3	6	8	0.75	Medium

After calculating each item, the researcher then calculated the entire item, the results obtained were as follows:

Item	Rater 1	Rater 2	s1	s2	∑s	v	Result
1-5	24	22	19	17	36	0.89	High

Based on those tables above, it showed that item 1 and item 5 have a medium level of validity with each value was 0.87 and 0.75. In addition, item 2, item 3, and item 4 have a high level of validity with each value was 1.00, 1.00, and 0.87. In the entire item calculation table, the value was 0.89 with a high level of validity. It means that the writing skill instrument can be used in this research.

In interpreting the validity value of Aiken's V with the following criteria:[17]

Table 3.6 Content Validity Interpretation

Categories	Interpretation
<0.4	Low
0.4 – 0.8	Medium
>0.8	High

---

[16] Hendryadi, *Content Validity¸* Teorionline Personal Paper, Number 01, June (2014): 3.

[17] Heri Retnawati, *Analisis Kuantitatif Instrumen Penelitian,* (Yogyakarta: Parama Publishing, 2016), 33.

2. Reliability

Reliability refers to the level of consistency or consistency of scores obtained how consistent is the score that each individual gets from one instrument administration to another or from one set of items to another. [18] In addition to having high validity, a good test must also have high reliability. A good instrument will produce reliable data as well. Reliability test of an instrument is also related to measurement error. The greater the reliability value of an instrument, it means that there is a slight error in the measurement. As well as conversely, the smaller the value of reliability, it means that there are many errors in the measurement.[19]

There were two types of test used in this research, they were completion type for the grammar test and essay type for the writing test, so the researcher applied two different types of reliability, as follows:

a. Reliability for Grammar Test

In calculating the reliability for grammar test, the researcher chose the coefficient *alpha Cronbach (α)*. Data processing was carried out using SPSS version 25.0 program. This reliability is used to find out whether the instrument is reliable or not.

Figure 3.2 Reliability Statistics of Grammar Test

Reliability Statistics

Cronbach's Alpha	N of Items
.904	33

Based on the table above, the reliability value of the grammar test obtained was 0.904. If the Cronbach Alpha value ≥ 0.6, the instrument is declared reliable. In addition, if the Cronbach Alpha value ≤ 0.6, the instrument is declared unreliable. The result showed that $0.904 \geq 0.6$, it means that the grammar test was reliable. If the value was interpreted with reliability criteria, 0.904 was included in the very high reliable category. For more details, see the table below:[20]

---

[18] Jack R Fraenkel, et al., *How to Design...*, 154.

[19] Heri Retnawati, *Analisis Kuantitatif...*, 85.

[20] Louis Cohen et al., *Research Methods in Education*, Sixth Edition, (London and New York: Routledge, 2007), 506.

Table 3.7 Interpretation of Cronbach's Alpha

Cronbach's Alpha	Interpretation
> 0.90	Very High Reliable
0.80 – 0.90	High Reliable
0.70 – 0.79	Reliable
0.60 – 0.69	Minimally Reliable
< 0.60	Unacceptable Low Reliable

b. Reliability for Writing Test

To know the reliability of writing test, the researcher applied inter-rater reliability. This reliability can be done by asking two raters for an assessment. The researcher chose two raters who were considered experts in mastering writing and grammar. The researcher asked two raters in assessing and giving the score of the students' ability in writing of analytical exposition text. The assessment had been based on the assessment rubric provided by the researcher. If the resulting reliability of the raters is high, then the two raters can be used interchangeably.[21]

In this reliability, the researcher correlated the scores from rater 1 and rater 2, in order to find out if the scores are similar or different. After that, the researcher decided how close the scores from two raters. The statistical formula for computing the reliability of writing test was *Cronbach's Alpha*. The researcher used SPSS (Statistical Package for Social Science) version 25.0 program to find out whether the test is reliable or not.

Figure 3.3 Reliability Statistics of Writing Test

Reliability Statistics

Cronbach's Alpha	N of Items
.964	2

---

[21] Kilem Li Gwet, *Handbook of Inter-Rater Reliability,* (Gaithersburg: Advanced Analytics, 2014), 4.

Based on the table above, it can be seen that the value of Cronbach's Alpha was 0.964. It indicated that the writing test was reliable. Based on the reliability criteria in table 3.8, it was in the level of very high reliable.

G. Data Analysis Techniques
1. Pre-requisite Analysis

Before analyzing all the data acquired statistically, the researcher must analyze pre-requisite tests to confirm that the data for each variable is normal and linear.

a) Normality Test

Normality test is a procedure used to determine whether the data comes from normal distribution or not. The researcher uses the normality test to determine whether the simple present tense test data and the analytical exposition text writing test is normal or not. In addition, the researcher uses SPSS (Statistical Package for Social Science) version 25.0 program for the normality test.

The normality test can be executed by using *Kolmogorov-Smirnov test* or *Shapiro-Wilk test*. According to Dahlan (Cited in Ramadhani and Bina) stated that if the sample is ≥ 50, then the normality test used is *Kolmogorov-Smirnov*. In addition, according to Razali and Wah (Cited in Ramadhani and Bina) stated that if the sample is ≤ 50, then the normality test used is *Shapiro-Wilk*.[22] Due to the number of samples in this research is ≤ 50, the researcher uses *Shapiro-Wilk test*.

The following are the criteria for acceptance or rejection of the normality test, including:

Table 3.8 The Criteria of Normality Test

Requirement	Result
Sig. > α = 0.05	H_0 is accepted
Sig. < α = 0.05	H_a is accepted

---

[22] Rahmi Ramadhani and Nuraini Sri Bina, *Statistika Penelitian Pendidikan: Analisis Perhitungan Matematis dan Aplikasi SPSS,* (Jakarta: Prenadamedia Group, 2021), 202.

36

Based on the requirement above, H_0 means that the data have a normal distribution. Furthermore H_a means that the data do not have a normal distribution.[23]

b) Linearity Test

Linearity test is carried out with the aim of knowing the correlation between the independent and dependent variables is linear or not. The researcher conducts the linearity test to measure whether the data obtained is linear or not. The linearity test is used to measure students' scores in the simple present tense test and the analytical exposition text writing test. The researcher uses SPSS (Statistical Package for Social Science) version 25.0 program to check the linearity. Next, the researcher interprets the results of the linearity by comparing the significant level $\alpha = 0.05$, with the following criteria:[24]

Table 3.9 The Criteria of Linearity Test

Requirement	Result
Sig. > $\alpha = 0.05$	H_0 is accepted
Sig. < $\alpha = 0.05$	H_0 is rejected

2. Hypothetical Test

The researcher used simple linear correlation test to measure the correlation between two variables. The scores of the simple present tense test and the students' analytical exposition text writing test are calculated by using Rank Spearmans' formula. Then, the results are interpreted to the correlation coefficient interval. The researcher used SPSS (Statistical Program for Social Science) for hypothetical test. The criteria for testing through SPSS are as follows:[25]

Table 3.10 The Criteria of Hypothetical Test

Requirement	Result
Sig. > $\alpha = 0.05$	H_0 is accepted
Sig. < $\alpha = 0.05$	H_0 is rejected

---

[23] Nuryadi, et al., *Dasar-Dasar Statistik Penelitian,* (Yogyakarta: Sibuku Media, 2017), 80.

[24] Wayan Widana and Putu Lia Muliani, *Uji Persyaratan Analisis,* (Lumajang: Klik Media, 2020), 47.

[25] Nuryadi, et al. *Dasar-Dasar...,* 76.

To find out the level of correlation from the correlation coefficient, the researcher interprets it with the following criteria:[26]

Table 3.11 Interpretation of Correlation Coefficient

Correlation Coefficient	Interpretation
0.00–0.10	Negligible correlation
0.10–0.39	Weak correlation
0.40–0.69	Moderate correlation
0.70–0.89	Strong correlation
0.90–1.00	Very strong correlation

The correlation coefficient is a determining value of how strong the correlation between the two variables. The correlation coefficient is a decimal number which is between 0.00 and +0.00 or -0.00 and -1.00. In This case, there are 3 criteria in determining the correlation. The first criterion is if the correlation coefficient is close to +1.00, it means that the two variables have a positive correlation. In other words, if a person has a high score on a variable, then she/he will also have a high score on another variable. The second criterion is if the correlation coefficient is close to 0.00, then the two variables have no correlation. In other words, it means that a person's high or low score on a variable does not have any effect on another variable. The third criterion is if the correlation coefficient is close to -1.00, it means that the two variables have a negative correlation. In other words, if someone has a high score on a variable, then she/he will have a low score on another variable, and vice versa.[27]

---

[26] Patrick Schober, et al. *Correlation Coefficients: Appropriate Use and Interpretation,* Department of Anesthesiology, VU University Medical Center, Amsterdam, the Netherlands, Volume 126, Number 5, May (2018): 1765, accessed on April 15th, 2022. https://doi.org/10.1213/ANE.0000000000002864,

[27] Emzir, *Metodologi Penelitian Pendidikan: Kuantitatif dan Kualitatif,* (Jakarta: Rajawali pers, 2014), 42-43.