

CHAPTER IV

PRESENTATION OF DATA AND DISCAUSSION

This chapter present presentation of data that are collected, the validity and reliability of the research instrument, hypotheses testing, and analyzing data.

A. Data Presentation

The researcher presents the data that are collected from each instrument the researcher used. As explained in the previous chapter, the researcher uses questionnaire to collecting the data related to X variable (students' interest) and Y variable (student English achievement).

The questionnaire is given to nine students of MTS Nasyrul Ulum as sample of population of this study. The data that have get from each instrument will be analyze and become the result of this study.

1. Data Presentation of Questionnaire.

To collect the data related to X variable (students' interest). And Y variable (students English achievement) the researcher use questionnaire. As stated in the previous chapter. The researcher carries out the questionnaire to the student at the 9th grade at MTS Nasyrul Ulum. So the researcher starts collecting the data of questionnaire at 24 december 2020 and lasts at 4th january 2021.

Indicator of this questionnaire has own score that is used to change the data into numerical data in order to being counted and analyzed by using statistical method. Here are the indicators and scores of Likert scale

Table 1.Likert Scale:

No	Indicator	Score
1	Strongly agree	5
2	Agree	4
3	Decided	3
4	Disagree	2
5	Strongly Disagree	1

The Interpretation of Questionnaire Alternative Answer Indicator Score strongly agree 5, agree 4, decided 3, disagree 2, and strongly disagree 1

After accepting the responds of the sample or respondent of the questionnaire, the researcher distributes it into each part of statement and interprets the statement into numerical data based on Likert scale's indicators as shown above (See in Appendix). Then the researcher accounts the score of each respondent.

The result of sample taking of students' nine grade of MTS Nasyrul Ulum. Based on the questionnaire can be seen in the table as follows.

**Table 2 The Result of Questionnaire's Respond Score Related to X
Variable (Students' interest)**

Subject	Sum of questionnaire's
Ach. Nurhamidi	47
Ach. Dhoni	42
Ach. Dzakiyur R.	43
Ach. Sahru Romadhona	45
Badrid Tamam	45
Daniah Karisma	49
Diki Wahyudi	49
Durriyatul Millah	40
Eka Dimas	48
Fitriyatul Hasanah	35
Hozeifah	48
Intan Wulan S.	40
Moh. Basri	43
Moh. Sutrisno	43
Moh. Muhlis	37
Moh. Idi	42
Musdelifah	45
Musyarrofah	40
Najwa Aslamia	43
Nawal Sabil	48
Nur Aisyah Divia Ali	36
Rifka Ramadina	46
Wildatul Jannah	46
SUM	1000

Based on the table above, the researcher claims that the students who is selected in this questionnaire are 23 students (N=23). This questionnaire from 23 students which has responded to the questionnaire.

The total score of questionnaire's respond related to X variable (students' interest) is 1000. The highest score of questionnaire's respond score is 48. The lowest score of questionnaire's respond score is 35.

**Table 3. The Result of Questionnaire's Respond Score Related to Y Variable
(Student English achievement)**

Subject	Sum respond
Ach. Nurhamidi	78
Ach. Dhoni	80
Ach. Dzakiyur	78
Ach. Sahru Rhomadona	81
Badrid Tamam	86
Daniah Karisma	81
Diki Wahyudi	86
Durriyatul Millah	89
Eka Dimas	85
Fitriyatul Hasanah	78
Hozeifah	81
Intan Wulan S.	87
Moh. Basari	80
Moh. Sutrisno	81
Moh. Muhlis	80
Moh. Idi	80
Musdelifah	89
Musyarrofah	84
Najwa aslamia	81
Nawal sabil	78
Nur Aisyah Divia Ali	90
Rifka ramadina	81
Wildatul Jannah	84
SUM	1889

Based on the table above, the researcher claims that the students who is selected in this questionnaire are 23 students (N=23). This

questionnaire from 23 students which has responded to the questionnaire. The total score of student score respond related to Y variable (students' achievement). The highest score of student achievement is 90, and the lowest score is 78

2. Validity and Reliability of the Research Instruments

a. Validity and Reliability of the Questionnaire

1) Validity of the Questionnaire

To checking the validity of instruments is used to make sure that the data that was got above is valid. In this case, the researcher uses questionnaire it consist of 10 questions that must answer with the respondent. The researcher used SPP to help the researcher know the validity of the questionnaire.

Correlations											
	X01	X02	X03	X04	X05	X06	X07	X08	X09	X10	TOTAL
Pearson Correlation	1	,65 2**	,71 5**	,50 3*	,43 2	,13 6	,17 6	- 9	- 4**	- 9	,081
Sig. (2- tailed)		,00 1	,00 0	,01 4	,42 2	,13 8	,01 3	,00 0	,00 2	,25 2	,715
N	23	23	23	23	23	23	23	23	23	23	23
Pearson Correlation	,65 2**	1	,76 8*	,53 6**	,35 6	- 0	- 8*	- 4*	- 8*	- 6	,454
Sig. (2- tailed)	,00 1		,00 0	,00 8	,09 6	,15 0	,04 2	,02 2	,01 8	,18 7	,201
N	23	23	23	23	23	23	23	23	23	23	23
Pearson Correlation	,71 5**	,76 8**	1	,44* 4*	,31 6	- 0	- 2	- 5	- 0	- 1	,494*
Sig. (2- tailed)	,00 0	,00 0		,03 4	,14 2	,99 4	,20 5	,11 3	,11 2	,58 0	,017
N	23	23	23	23	23	23	23	23	23	23	23

Correlations											
	X01	X02	X03	X04	X05	X06	X07	X08	X09	X10	TOTAL
Pearson	,50	,53	,44	1	,59	-	-	-	-	-	,418*
Correla	3*	6**	4*		3**	,40	,26	,35	,21	,02	
tion						1	9	8	2	9	
Sig.	,01	,00	,03		,00	,05	,21	,09	,33	,89	,047
(2-	4	8	4		3	8	5	3	0	5	
tailed)											
N	23	23	23	23	23	23	23	23	23	23	23
Pearson	,17	,35	,31	,59	1	-	-	-	-	-	,497
Correla	6	6	6	3**		,13	,31	,13	,29	,03	
tion						1	4	8	4	4	
Sig.	,42	,09	,14	,00		,55	,14	,52	,17	,87	,061
(2-	2	6	2	3		1	5	9	3	9	
tailed)											
N	23	23	23	23	23	23	23	23	23	23	23
Pearson	-	-	-	-	-	1	,43	,47	,49	,15	,424*
Correla	,31	,31	,00	,40	,13		2*	1*	4*	3	
tion	9	0	2	1	1						
Sig.	,13	,15	,99	,05	,55		,04	,02	,01	,48	,444
(2-	8	0	4	8	1		0	3	6	6	
tailed)											
N	23	23	23	23	23	23	23	23	23	23	23
Pearson	-	-	-	-	-	,43	1	,55	,55	,47	,462

Correlations											
	X01	X02	X03	X04	X05	X06	X07	X08	X09	X10	TOTAL
Correlation	,509*	,428*	,275	,269	,314	2*		8**	9**	9*	
Sig. (2-tailed)	,013	,042	,205	,215	,145	,040		,006	,006	,021	,089
N	23	23	23	23	23	23	23	23	23	23	23
Pearson Correlation	-,675**	-,474*	-,340	-,358	-,138	,471*	,558**	1	,699**	,499*	,417
Sig. (2-tailed)	,000	,022	,113	,093	,529	,023	,006		,000	,015	,554
N	23	23	23	23	23	23	23	23	23	23	23
Pearson Correlation	-,614**	-,488*	-,341	-,212	-,294	,494*	,559**	,699**	1	,500*	,421
Sig. (2-tailed)	,002	,018	,112	,330	,173	,016	,006	,000		,015	,052
N	23	23	23	23	23	23	23	23	23	23	23
Pearson Correlation	-,24	-,28	-,12	-,02	-,03	,153	,479*	,499*	,500*	1	,527**

Correlations											
	X01	X02	X03	X04	X05	X06	X07	X08	X09	X10	TOTAL
tion	9	6	2	9	4						
Sig.	,25	,18	,58	,89	,87	,48	,02	,01	,01		,610
(2-tailed)	2	7	0	5	9	6	1	5	5		
N	23	23	23	23	23	23	23	23	23	23	23
Pearson	,08	,27	,49	,41	,39	,42	,36	,40	,41	,52	1
Correlation	1	7	4*	8*	7	4*	2	7	1	7**	
Sig.	,71	,20	,01	,04	,06	,04	,08	,05	,05	,01	
(2-tailed)	5	1	7	7	1	4	9	4	2	0	
N	23	23	23	23	23	23	23	23	23	23	23

From the table above there are seven questions is valid.

X02= 0,454 < 0,413, X04= 0, 494< 0, 413, X05= 0,497 <0,413.

X07= ,462< 0,413X08= 0,544 < 0,413, X09= 0,421< 0,413.

X10= 0,52 7< 0,413

If : $r - value > r - table$ = the questionnaire is valid

If : $r - value < r - table$ = the questionnaire not valid

To know the r-table of the research is based on the degree freedom of the research.¹ The degree freedom of this research is by 5% = 21=0,413 Df= N-2 N=23 so df= N-2=23-2=21

2) Reliability of the Questionnaire

After the validity is approvable checked, the researcher should check the reliability of the questionnaire. For checking whether this questionnaire is reliable or not, the researcher uses Cronbach Alpha Formula in order to make the researcher easier in counting the reliability of it. This formula is also described as the best index correlation for the questionnaire that is stated by Donald Ary in his book.² In order to make it precise, the all sample of the questionnaire has taken to be tested. In this case the researcher uses SPSS to help the researcher checking the reliability of this questionnaire. As follow:

Case Processing Summary			
		N	%
Cases	Valid	23	100,0
	Excluded ^a	0	,0
	Total	23	100,0

¹ Anas Sudijono, *Pengantar Statistik Pendidikan* (Jakarta: Rajawali Pers, 2014), p. 402.

² Donald Ary, et. Al, *Introduction to Research in Education*, Eight Edition (USA:Wadsworth, Cengage Learning, 2010), p. 212.

Reliability Statistics	
Cronbach's Alpha	N of Items
,666	7

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
X02	16,8696	19,028	-,178	,716
X04	18,1304	19,755	-,257	,671
X05	17,3043	12,949	,382	,482
X07	18,3043	11,949	,554	,534
X08	18,5652	11,802	,628	,587
X09	17,2609	12,929	,499	,493
X10	18,2609	13,292	,539	,644

From the result above the questionnaire of this research is 0,666. To decide whether the reliability of the questionnaire is acceptable or not, the researcher consults the α value above with r-table.

If $r - value > r\text{-table}$; $\alpha\text{-value} > r\text{-table}$: the questionnaire is reliable

If $r - value < r\text{-table}$; $\alpha\text{-value} < r\text{-table}$: the questionnaire is not reliable

The number of students as respondent of questionnaire is 23 students. Considering $N = 23$, then r-table by significance 5% = 0,413 and r-table by significance 1% is 0,526.

Considering the r-table above, whether by significance 5% or 1 %, the output (0, 666) shows that it is significantly higher than r-table ($0,413 > 0,666 < 0,526$). Therefore, the questionnaire used by the researcher in order to collect data related to X variable (student who has interest on English subject) and Y variable (students don't have interest on English subject of this study is reliable).

3. Analyzing the data

After the final scores of both variables have been calculated, the next step is to calculate. The *r – value* Interprets the correlation between X variable and Y variable in Statistical data. Then it is correlated by using formula of r-test. In this case, the researcher uses Product Moment formula to measure whether there is correlation between X variable and Y variable of this study or not.

Table 4. The Calculation to Get between X Variable (Student interest on English subject) and Y Variable (Students' English achievement on English subject)

Subject	X	Y	XY	X²	Y²
1	47	78	3666	2209	6084
2	42	80	3360	1764	6400
3	43	78	3354	1849	6084
4	45	80	3600	2025	6400
5	45	78	3510	2025	6084
6	49	81	3969	2401	6561
7	49	86	4214	2401	7396
8	40	89	3560	1600	7921
9	48	85	4080	2304	6084
10	35	78	2730	1225	6561
11	48	81	3888	2304	7569
12	40	87	3480	1600	6400
13	43	80	3440	1849	6561
14	43	81	3483	1849	6400
15	37	80	2960	1369	6400
16	42	80	3360	1764	17921
17	45	89	4005	2025	7056
18	40	84	3360	1600	6561
19	43	81	3483	1849	6084
20	48	78	3744	2304	8100
21	36	90	3240	1296	6561
22	46	81	3726	2116	7056
23	46	84	3864	2116	7056
N=23	1000	326	74711	41995	155469

From the table above, the researcher determines that the number of subject of this study is 23 (N = 23). The X column

interprets the score of X variable (students' interest) the Y column interprets the score of Y variable (students' achievement), and the XY column interprets the multiplication between X and Y. While the X2 and Y2 interprets the result of quadratic score of each Item (X and Y). All of data above is used to measure of this study by using Product Moment formula. Here is the formula as follows.

Note:

The formula as follow:

$$r_{xy} = \frac{N \sum XY - (\sum X) (\sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$

r_{xy} = Correlation coefficient between X and Y

$\sum XY$ = Sum of cross products of deviation scores for X and Y

$\sum X$ = Total score of X

$\sum Y$ = Total score of Y

N = Number of cases

$$r_{xy} = \frac{N \sum XY - (\sum X) (\sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$

$$r_{xy} = \frac{23 \times 74711 - 1000 \times 1889}{\sqrt{[23 \times 41995 - (41995)^2] \times [23 \times 155469 - (1889)^2]}}$$

$$r_{xy} = \frac{1718353 - 1889000}{\sqrt{[965885 - (41995)X][3575787 - 3568321]}}$$

$$r_{xy} = \frac{-170647}{\sqrt{-150168742421}}$$

$$r_{xy} = \frac{-170648}{-387516}$$

$$r_{xy} = 0,44$$

From the calculation above, the researcher has *r – value* that is 0,44. Therefore, the researcher should compare it with the *r – table* that will be explained in the hypothesis testing below.

B. Hypothesis Testing

From the result of analysis data above, it shows that the result of *r – value* is 0,44. It shows that there is correlation between X variable and Y variable of this study. To further examine, the researcher should compare the result of *r – value* with the *r – table*. So the researcher can know whether there is correlation between X variable and Y variable of this research or not.

Because this study is in education research, the researcher compare the *r – value* with the *r – table* by significance level 5%. By using the level of significance 5%, the hypothesis can be accepted or rejected if:

r – value > r-table: the Null Hypothesis (Ho) is rejected and the alternative to the null hypothesis (Ha) is accepted

$r - value < r\text{-table}$: the null hypothesis (H_0) is accepted and the alternative to the null hypothesis (H_a) is rejected.

Initially, to know the critical $r - value$, the researcher should determine the degree of freedom (df) of this study. Since the number of sample of this study is 23 ($N = 23$), so the $df = N - 2 = 23 - 2 = 21$

Based on $r\text{-table}$, it is found that the critical value of $r\text{-table}$ by significance level 5% for $df = 21$ is 0,413. By comparing the $r\text{-table}$ and $r - value$ of this study, it is found that the result of data analysis of this study is enough than the critical $r - value$ of the $r\text{-table}$ ($0,44 > 0,413$) by using significance level 5%. Therefore, the Null hypothesis (H_0) is rejected in which there is correlation between X variable (student interest) and Y variable (student achievement). On the other hand, the Alternative to the Null hypothesis is accepted in which there is correlation between X variable (student interest on English subject) and Y variable (students achievement on English subject).

Finally, from the result of data analysis and hypothesis state that there is correlation between students' have interest on English subject and students don't have interest on English subject at MTS Nasyrul Ulum.

C. Discussions

In this study, the researcher formulates two research problems that are expected to be discussed, they are:

1. Is there any correlation between students' interest and student English achievement at 9th grader on English subject at MTS Nasyrul Ulum?

2. How significant is the correlation between students' interest and student English achievement at 9th grader on English subject at MTS Nasyrul Ulum?

Based on the statistical analysis, the answers are:

1. There is correlation between students' interest and student English achievement at 9th grader at MTS Nasyrul Ulum?

The statement above is proven by statistical data from the result of data analysis by using Product Moment formula in order to find the r-value. From the calculation, it is found that the r-value is 0,44. Then the researcher should comparing it with the r-table by using level of significance 5%, since this study is education research. After comparing the r-value with the r-table (with $df = 21$), it is known that the r-value is enough than the r-table ($0,44 > 0,413$).

2. There is significance between the X variable (students' interest) and Y variable (student English achievement).

Since there is correlation between students' interest and student English achievement at the 9th grader on English subject at MTS Nasyrul Ulum, This answer refers to the research problem number 1. It means that the Null hypothesis (H_0) is rejected and the Alternative to the Null hypothesis (H_a) is accepted.

This conclusion is also referred to the table of the interpretation of the r-Product Moment as follow.

Table 5. The Interpretation of r – value Product Moment

The r – value Product Moment	Interpretation
0,0 – 0,20	There is correlation between X variable and Y variable, but the correlation is the lowest. So it is considered nothing and can be ignored.
0,20 – 0,40	There is low correlation between X variable and Y variable.
0,40 – 0,70	There is sufficient/enough correlation between X variable and Y variable
0,70 – 0,90	There is high/strong correlation between X variable and Y variable
0,90 – 1,00	There is very high/strong correlation between X variable and Y variable

The result of statistical analysis shows that the r -value of this study is 0, 57. By comparing it with the table above, so it reveals that there is correlation between X variable and Y variable, and the correlation is enough.