

CHAPTER IV

RESEARCH RESULT

This chapter presents the result of prerequisite test, result of hypotheses test and MANOVA Test.

A. Prerequisite Test

Parametric statistical significance tests, such as analysis of variance and least squares regression, are widely used in many disciplines, including, statistics parametric tests to produce accurate results, the assumptions underlying them such as normality and homogeneity test must be satisfied.

1. Normality of writing test

The tests of normality employed were Kolmogorov – Smirnov and Shapiro Wilk. The hypothesis formulas were: H_0 = the data have normal distribution if $Sig (P_{value}) > \alpha = 0.05$. However, H_a = the data do not have normal distribution if $Sig (P_{value}) < \alpha = 0.05$.

Table 4.1

Normality of writing test in the experimental and control class

Tests of Normality						
Class	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Score Experiment	.143	30	.120	.953	30	.199
Control	.113	32	.200	.930	32	.118

Based on Table 4.1, it can be seen that P_{value} (Sig) for experimental class was 0.120 for Kolmogorov-Smirnov_a and 0.199 for Shapiro-Wilk.

P_{value} (Sig) for control class was 0.200 for Kolmogorov-Smirnov_a and 0.118 for Shapiro-Wilk. Because *Sig* (P_{value}) of experimental class $> \alpha$ 0.05 it means H_0 is accepted and *Sig* (P_{value}) for the control class $< \alpha$ 0.05 it meant H_a is accepted. The conclusion was the data of writing test in the experimental class and the control class had normal distribution.

2. Normality of questionnaire test

The tests of normality employed are Kolmogorov – Smirnov and Shapiro Wilk. The hypothesis formulas were: H_0 = the data have normal distribution if *Sig* (P_{value}) $> \alpha = 0.05$. However, H_a = the data do not have normal distribution if *Sig* (P_{value}) $< \alpha = 0.05$.

Table 4.2
Normality of questionnaire test in experimental and control Class

		Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
Class		Statistic	df	Sig.	Statistic	df	Sig.
Score	Experiment	.129	30	.200*	.934	30	.061
	Control	.158	32	.200	.946	32	.110

Based on Table 4.2, it can be seen that P_{value} (Sig) for experimental class was 0.200 for Kolmogorov-Smirnov_a and 0.061 for Shapiro-Wilk. P_{value} (Sig) for control class was 0.200 for Kolmogorov-Smirnov_a and 0.110 for Shapiro- Wilk. Because *Sig* (P_{value}) of experimental class $> \alpha$ 0.05 it means H_0 is accepted and *Sig* (P_{value}) for the control class $< \alpha$ 0.05 it meant H_a is accepted. The conclusion was the data of writing test in the experimental class and the control class had normal distribution.

3. Homogeneity of writing test

The test of homogeneity employed Levene's test. The hypothesis for the homogeneity tests were: H_0 = the variance of the data is homogenous if $Sig > \alpha = 0.05$ and H_a = the variance of the data is not homogenous H_a is accepted if $Sig < \alpha = 0.05$.

Table 4.3

Homogeneity of writing test in experimental and control class

Test of Homogeneity of Variances

Score

Levene Statistic	df1	df2	Sig.
.131	1	60	.719

Based on the results obtained in the test of homogeneity of variances in table 4.3, it can be seen that $Sign (P_{value}) = 0.719 > \alpha = 0.05$. It demonstrated that H_0 is accepted because $Sign (P_{value}) > \alpha = 0.05$. It meant that the data of writing test had same variance or homogenous.

4. Homogeneity of questionnaire test

The test of homogeneity employed Levene's test. The hypothesis for the homogeneity tests were: H_0 = the variance of the data is homogenous if $Sig > \alpha = 0.05$ and H_a = the variance of the data is not homogenous H_a is accepted if $Sig < \alpha = 0.05$.

Table 4.4
Homogeneity of questionnaire test in experimental and control class

Test of Homogeneity of Variances			
Score			
Levene Statistic	df1	df2	Sig.
3.424	1	60	.071

Based on the results obtained in the test of homogeneity of variances in table 4.4, it can be seen that $Sign (P_{value}) = 0.071 > \alpha = 0.05$. It demonstrated that H_0 is accepted because $Sign (P_{value}) > \alpha = 0.05$. It meant that the data of questionnaire test had same variance or homogenous.

B. Result of Hypotheses Test

Based on the previous explanation that the normality and homogeneity test was satisfied. Therefore, the researcher SPSS 16.0 (*Statistical Package for Social Science*) was used to computed Independent sample T-test for the first and second hypothetical test. The hypotheses formulas are:

- H_a
1. There is significant effect of peer review in students' writing motivation.
 2. There is significant effect of peer review in students' writing ability.
- H_0
1. There is not significant effect of peer review in students' writing motivation.
 2. There is not significant effect of peer review in students' writing ability.

Criteria of acceptance of the hypothesis tests are as follows:

H_a is accepted if $Sig < \alpha = 0.05$

H_o is accepted if $Sig > \alpha = 0.05$

Table 4.5
Hypothetical Test of Motivation

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	99% Confidence Interval of the Difference	
									Lower	Upper
Score	Equal variances assumed	.029	.867	9.492	60	.000	10.985	1.157	7.907	14.064
	Equal variances not assumed			9.663	48.499	.000	10.985	1.137	7.937	14.033

Based on the results obtained in the independent sample t-test above, that the value of significant generated $Sig (P_{value}) = 0.000 < \alpha = 0.05$. So, H_o is rejected and H_a is accepted. Based on the computation, it can be concluded that there was a significant effect of using Peer Review in students' writing motivation at the second semester of the eighth grade of

SMPN 1 Tanggunggunung in 2018/2019 academic year. The score of motivation can be seen in appendix 14 and 15.

Table 4.6
Hypothetical Test of Writing ability

Independent Samples Test									
	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	99% Confidence Interval of the Difference	
								Lower	Upper
Score Equal variances assumed	.131	.719	3.831	60	.001	9.010	2.352	2.753	15.268
Equal variances not assumed			3.824	59.225	.001	9.010	2.356	2.740	15.281

Based on the results obtained in the independent sample t-test above, that the value of significant generated $Sig (P_{value}) = 0.001 < \alpha = 0.05$. So, H_0 is rejected and H_a is accepted. Based on the computation, it can be concluded that there was a significant effect of using Peer Review in students' writing recount text ability at the second semester of the eighth grade of SMPN 1 Tanggunggunung in 2018/2019 academic year. The score of writing test can be seen in appendix 16 and 17.

C. MANOVA Test

1. Result of Homogeneity Test of Variances

Homogeneity test of variance was used to examine whether or not the variance between the independent variable groups were equal. Levene's test of Equality of Error Variances was used based on the decision, if the significant value was ≥ 0.05 , it meant that the variance between the independent variable groups were equal. On the contrary, if the significant value was < 0.05 , it meant that variances between independent groups are not equal. Then the result of homogeneity test of variances could be seen in table 4.7.

Table 4.7
Homogeneity test of variances

Levene's Test of Equality of Error Variances ^a				
	F	df1	df2	Sig.
Writing_Ability	.131	1	60	.719
Writing_Motivation	4.017	1	60	.072

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Class

Based on the table 4.5, the significant values of writing motivation and writing ability were ≥ 0.05 . The significant value of writing motivation was 0.719 which was greater than 0.05. Then, the significant value of writing ability was 0.072 which greater than 0.05. Thus, the variance between writing motivation and writing ability were equal.

2. Result of Homogeneity Test of Covariance Matrix

Instead of the variance had to be equal, the covariance matrix between the independent variable groups also had to be equal. The homogeneity test of covariance matrix could be done through Box's M test. If the significant value was ≥ 0.05 , it meant that the covariance matrix between the independent variable groups were equal. On the contrary, if the significant value was < 0.05 , it meant that covariance matrix between independent groups are not equal. Then the result of homogeneity test of covariance matrix could be seen in table 4.8.

Table 4.8
Homogeneity Test of Covariance Matrix

Box's Test of Equality of Covariance Matrices^a	
Box's M	10.612
F	3.409
df1	3
df2	7.531E5
Sig.	.071

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + Class

Based on the table 4.6, the significant values showed 0.071. It was ≥ 0.05 . Moreover, the covariance matrix between independent variables was equal. Thus, the two prerequisite tests had been completed. Then, the hypotheses could be done through MANOVA.

3. Result of Hypotheses Test

To test the hypotheses, MANOVA was used. It was used to analyze the data that involved more than one independent variable at a time. The analysis of Pillai's Trace, Wilk's Lambda, Hotelling's trace and Roy's Largest Root were used based on the decision, if the significant value was < 0.05 , H_0 was rejected and if the significant value was > 0.05 , H_a was rejected. The result MANOVA could be seen in Table 4.9.

Table 4.9
Result of MANOVA Test

Multivariate Tests ^c								
Effect		Value	F	Hypothesis df	Error df	Sig.	Noncent. Parameter	Observed Power ^b
Intercept	Pillai's Trace	.997	9.628E3 ^a	2.000	59.000	.000	19255.843	1.000
	Wilks' Lambda	.003	9.628E3 ^a	2.000	59.000	.000	19255.843	1.000
	Hotelling's Trace	326.370	9.628E3 ^a	2.000	59.000	.000	19255.843	1.000
	Roy's Largest Root	326.370	9.628E3 ^a	2.000	59.000	.000	19255.843	1.000
Class	Pillai's Trace	.625	49.258 ^a	2.000	59.000	.000	98.515	1.000
	Wilks' Lambda	.375	49.258 ^a	2.000	59.000	.000	98.515	1.000
	Hotelling's Trace	1.670	49.258 ^a	2.000	59.000	.000	98.515	1.000
	Roy's Largest Root	1.670	49.258 ^a	2.000	59.000	.000	98.515	1.000

a. Exact statistic

b. Computed using alpha = .05

c. Design: Intercept + Class

Based on the table above, the significant value of F class test of Pillai's Trace, Wilk's Lambda, Hotelling's trace and Roy's Largest Root showed 0.000. It was less than 0.05. All of the significance values were significant. Thus, the null hypothesis was rejected. It meant that, the statement which stated 'there is no significant effect of peer review on students' writing motivation and writing ability' was rejected. Henceforth, it could be concluded that there is a significant effect of peer review on students' writing motivation and writing ability.

Furthermore, to know the differences writing motivation and writing ability both experimental and control classes, the analysis result of Test of between Subject-Effects could be used. The result of Test of between Subject-Effects was presented in Table 4.10.

Table 4.10
Result of Test of Between Subject-Effects

Tests of Between-Subjects Effects						
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Writing_Ability	1257.098 ^a	1	1257.098	4.673	.012
	Writing_Motivation	1900.613 ^c	1	1900.613	7.657	.000
Intercept	Writing_Ability	283545.163	1	283545.163	3.310E3	.000
	Writing_Motivation	364617.000	1	364617.000	1.778E4	.000
Class	Writing_Ability	1257.098	1	1257.098	4.673	.012
	Writing_Motivation	1900.613	1	1900.613	7.657	.000
Error	Writing_Ability	5140.385	60	85.673		
	Writing_Motivation	1230.742	60	20.512		
Total	Writing_Ability	289020.000	62			
	Writing_Motivation	366430.000	62			
Corrected Total	Writing_Ability	6397.484	61			
	Writing_Motivation	3131.355	61			

a. R Squared = .196 (Adjusted R Squared = .183)

b. Computed using alpha = .05

c. R Squared = .607 (Adjusted R Squared = .600)

Based on the table 4.10, F class test showed the significance value of writing motivation and significant value of writing ability in both experimental and control classes. The significance value of peer review on students' writing motivation was $0.000 < 0.05$. It meant that there was interaction between peer review and writing motivation. Thus, the significance value of peer review on students' writing ability was $0.012 < 0.05$. It meant that there was interaction between peer review and writing ability.