

CHAPTER IV

RESEARCH FINDINGS AND DISCUSSION

In this chapter, the researcher presents the finding of the research. It presents some discussions dealing with the collecting data of the students' pre-test and post-test score from the experimental and control group. This chapter covers research findings, normality and homogeneity testing, hypothesis testing, and discussion.

A. Research Findings

Research Findings have a purpose to show the result of the research. In this chapter, the researcher showed the students' writing quality before and after using Grammarly checker. The subjects of the research were the students of the fourth semester of the English Education program of IAIN Tulungagung which 41 students of B class as the experimental group and 42 students of A class as a control group. The researcher used the writing test as an instrument for this research. The purpose of the writing test is to know the difference between students' writing quality score before and after using Grammarly checker. In order to know the students' writing quality in creative writing, the researcher gave pre-test and post-test. The form and the instruction of pre-test and post-test are the same, but it has differences in the theme. In the pre-test, the themes, namely love, friendship, and mystery, while in post-test the themes such as hope, adventure, and honesty. A pre-test

is a test given to students before they get treatment. The purpose of the pre-test is to know students' writing quality before they get treatment.

The students were given treatment by the researcher after conducting the pre-test. The researcher gave treatment by using a Grammarly checker as a tool for the students to check their writing quality from their grammar and writing mechanics. The students are given an explanation of the procedure of using Grammarly checker. Then, the students try to check and correct their writing by using Grammarly checker. Grammarly checker helps the students to edit and correct a grammatical error, punctuation, spelling, style, and sentence structure of their writing. Using Grammarly checker gives the students a great way to correct their writing and it also shows the way to make a correction.

After giving a treatment, the researcher conducting a post-test. Post-test is a test given to the students after they got treatment. The purpose of post-test is to know the students' writing quality after they got treatment. The result of post-test showed that some students got a high score. The final result of the students' score from pre-test and post-test was analyzed using a scoring rubric. To know the students' achievement is good or not, the researcher gave criteria. The scores are divided into five criteria. The score can be seen as follows:

Table 4.1 The Score's Criteria

No	Interval Criteria	Class
1.	85-100	Excellent
2.	71-84	Very Good
3.	60-70	Good
4.	40-59	Low
5.	0-39	Failed

(Adapted from article Riswanto and Haryanto E. 2012)

- a. The data from the score of the experimental group have been obtained as in the following:

Table 4.2 The Scores of Pre-test and Post-test in the Experimental Group

No	Name of the students	Score in Pre-test	Category	Score in Post-test	Category
1.	B1	60	Good	85	Excellent
2.	B2	60	Good	85	Excellent
3.	B3	65	Good	85	Excellent
4.	B4	60	Good	75	Very Good
5.	B5	70	Good	85	Excellent
6.	B6	70	Good	90	Excellent
7.	B7	60	Good	80	Very Good
8.	B8	55	Low	75	Very Good
9.	B9	70	Good	85	Excellent
10.	B10	70	Good	80	Very Good
11.	B11	65	Good	90	Excellent
12.	B12	65	Good	75	Very Good
13.	B13	75	Very Good	90	Excellent
14.	B14	65	Good	75	Very Good
15.	B15	60	Good	80	Very Good
16.	B16	55	Low	75	Very Good
17.	B17	65	Good	80	Very Good
18.	B18	60	Good	75	Very Good
19.	B19	55	Low	80	Very Good
20.	B20	65	Good	85	Excellent
21.	B20	60	Good	80	Very Good

22.	B21	60	Good	80	Very Good
23.	B22	75	Very Good	85	Excellent
24.	B24	65	Good	85	Excellent
25.	B25	65	Good	75	Very Good
26.	B26	60	Good	80	Very Good
27.	B27	65	Good	85	Excellent
28.	B28	70	Good	80	Very Good
29.	B29	65	Good	70	Good
30.	B30	65	Good	85	Excellent
31.	B31	65	Good	80	Very Good
32.	B32	60	Good	75	Very Good
33.	B33	65	Good	80	Very Good
34.	B34	60	Good	75	Very Good
35.	B35	60	Good	80	Very Good
36.	B36	65	Good	85	Excellent
37.	B37	60	Good	80	Very Good
38.	B38	70	Good	80	Very Good
39.	B39	60	Good	75	Very Good
40.	B40	65	Good	80	Very Good
41.	B41	65	Good	75	Very Good

- b. The data from the score of the control group have been obtained as in the following:

Table 4.3 The Scores of Pre-test and Post-test in the Control Group

No	Name of the students	Score in Pre-test	Category	Score in Post-test	Category
1.	A1	70	Good	75	Very Good
2.	A2	65	Good	70	Good

3.	A3	75	Very Good	75	Very Good
4.	A4	60	Good	75	Very Good
5.	A5	65	Good	70	Good
6.	A6	70	Good	75	Very Good
7.	A7	65	Good	70	Good
8.	A8	70	Good	70	Good
9.	A9	65	Good	70	Good
10.	A10	80	Very Good	85	Excellent
11.	A11	70	Good	75	Very Good
12.	A12	75	Very Good	75	Very Good
13.	A13	75	Very Good	80	Very Good
14.	A14	70	Good	80	Very Good
15.	A15	75	Very Good	75	Very Good
16.	A16	65	Good	70	Good
17.	A17	70	Good	75	Very Good
18.	A18	60	Good	75	Very Good
19.	A19	60	Good	65	Good
20.	A20	65	Good	70	Good
21.	A21	60	Good	65	Good
22.	A22	70	Good	75	Very Good
23.	A23	70	Good	70	Good
24.	A24	60	Good	70	Good
25.	A25	70	Good	70	Good
26.	A26	65	Good	70	Good
27.	A27	75	Very Good	75	Very Good
28.	A28	75	Very Good	80	Very Good
29.	A29	70	Good	80	Very Good
30.	A30	80	Very Good	85	Excellent
31.	A31	65	Good	70	Good

32.	A32	70	Good	75	Very Good
33.	A33	65	Good	75	Very Good
34.	A34	70	Good	75	Very Good
35.	A35	70	Good	75	Very Good
36.	A36	60	Good	65	Good
37.	A37	70	Good	75	Good
38.	A38	75	Very Good	70	Good
39.	A39	60	Good	65	Good
40.	A40	65	Good	70	Good
41	A41	75	Very Good	80	Very Good
42	A42	70	Good	80	Very Good

1. The Result of Pre-test

The pre-test was done by asking the students to write a paragraph of creative writing that is a short story based on the themes given by the researcher. In the pre-test, there were 41 students in the experimental group and 42 students in the control group. A pre-test was administered to the experimental group and the control group to know the quality of the writing of the students and to know the students' writing quality before receiving the treatment.

The researcher presented the result of pre-test that had been done before treatment. The pre-test was held on 16th March 2019. The test was writing achievement test that was in the form of creative writing that is a short story with themes love, friendship, and mystery. This test

was proposed to know the students' achievement before receiving treatment.

And then, the researcher collected the score used SPSS 16.0 program which the result of descriptive of statistic pre-test between the experimental group and the control group as in the following:

a. Pre-Test of Experimental Group

Table 4.4 Statistics Pre-Test of Experimental Group

N	Valid	41
	Missing	0
Mean		63.7805
Std. Error of Mean		.75669
Median		65.0000
Mode		65.00
Std. Deviation		4.84516
Variance		23.476
Range		20.00
Minimum		55.00
Maximum		75.00
Sum		2615.00

Based on table 4.4 above, it can be seen that the mean of the score was 63.78. It meant that the average score of 41 students in the experimental group was 63. The median in the pre-test was 65.0000. It meant that the middle score of pre-test was 65. The mode in the pre-test was 65. It meant that the most frequently appeared score was 65. The standard deviation in the pre-test was 4.84516. The range in the pre-test was 20. Meanwhile, the minimum score in the pre-test was 55. The

maximum score in the pre-test 75. The summary of pre-test was 2615. In addition, the researcher organized the percentage and the frequency of the test, it can be seen in table 4.5

Table 4.5 Frequency of Pre-Test of Experimental Group

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 55	3	7.3	7.3	7.3
60	14	34.1	34.1	41.5
65	16	39.0	39.0	80.5
70	6	14.6	14.6	95.1
75	2	4.9	4.9	100.0
Total	41	100.0	100.0	

From table 4.5, the frequency of pretest after being distributed there were 3 students or 7.3% who got score 55 which meant that the students' writing quality was low, there were 14 students or 34.1% who got score 60 which meant that the students' writing quality was good, there were 16 students or 39.0% who got score 65 which meant that the students' writing quality was good, there were 6 students or 14.6% who got score 70 which meant that the students' writing quality was good, there were 2 students or 4.9% who got score 75 which meant that the students' writing quality was very good, there were no students who got score between 85-100 which meant the students' writing quality was excellent.

b. Pre-test of Control Group

Table 4.6 Statistics Pre-Test of Control Group

N	Valid	42
	Missing	0

Mean	68.5714
Std. Error of Mean	.85685
Median	70.0000
Mode	70.00
Std. Deviation	5.55304
Variance	30.836
Range	20.00
Minimum	60.00
Maximum	80.00
Sum	2880.00

Based on table 4.6, it showed that the mean of the score was 68.57. It meant that the average score of 42 students in the control group was 68. The median in the pre-test was 70.0000. It meant that the middle score of pre-test was 70. The mode in the pre-test was 70. It meant that the most frequently appeared score was 70. The standard deviation in the pre-test was 5.55304. The range in the pre-test was 20. Meanwhile, the minimum score in the pre-test was 60. The maximum score in the pre-test 80. The summary of pre-test was 2880. In addition, the researcher organized the percentage and the frequency of the test, it can be seen in table 4.7

Table 4.7 Frequency of Pre-Test of Control Group

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 60	7	16.7	16.7	16.7
65	10	23.8	23.8	40.5
70	15	35.7	35.7	76.2
75	8	19.0	19.0	95.2
80	2	4.8	4.8	100.0
Total	42	100.0	100.0	

From table 4.7, the frequency of pretest after being distributed there were 7 students or 16.7% who got score 60 which meant that the students' writing quality was good, there were 10 students or 23.8% who got score 65 which meant that the students' writing quality was good, there were 15 students or 35.7% who got score 70 which meant that the students' writing quality was good, there were 8 students or 19.0% who got score 75 which meant that the students' writing quality was very good, there were 2 students or 4.8% who got score 80 which meant that the students' writing quality was very good, there were no students who got score between 85-100 which meant the students' writing quality was excellent.

2. The Result of Post-Test

The post-test was administered by asking the students to write one of the kind of creative writing that is a short story with different themes, namely hope, adventure, and honesty. Similar to the pre-test there were 41 students as the experimental group and 42 students as the control group. It was done after treatments. The researcher presented the result of the post-test that had been done after treatment. Post-test was held on April, 2nd 2019, this test was intended to know the quality writing of the students and to know the students' writing quality after receiving the treatment.

Besides, the process of post-test, there was a difference between experimental group and control group, in which in the experimental

group the students use Grammarly checker to edit and correct a grammatical error, punctuation, spelling, style, and sentence structure from their writing. Whereas in the control group they use Spelling and Grammar Checker in Microsoft Word to edit and correct a grammatical error, punctuation, spelling, style, and sentence structure of writing.

After gaining the score, the researcher calculated the score using the SPSS 16.0 program. The result of post-test between the experimental group and the control group can be seen as follows:

a. Post-test of Experimental Group

Table 4.8 Statistics Post-Test of Experiment Group

N	Valid	41
	Missing	0
Mean		80.4878
Std. Error of Mean		.75718
Median		80.0000
Mode		80.00
Std. Deviation		4.84831
Variance		23.506
Range		20.00
Minimum		70.00
Maximum		90.00
Sum		3300.00

Based on table 4.8 above, it showed that the mean of the score was 80.49. It meant that the average score of 41 students in the experimental group was 80. The median in the post-test was

80.0000. It meant that the middle score of post-test was 80. The mode in the post-test was 80. It meant that the most frequently appeared score was 80. The standard deviation in the post-test was 4.84831. The range was 20. Meanwhile, the minimum score in the post-test was 70. The maximum score in the post-test 90. The summary of pre-test was 3300. In addition, the researcher organized the percentage and the frequency of the test, it can be seen in table 4.9

Table 4.9 Frequency of Post-Test of Experimental Group

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 70	1	2.4	2.4	2.4
75	11	26.8	26.8	29.3
80	15	36.6	36.6	65.9
85	11	26.8	26.8	92.7
90	3	7.3	7.3	100.0
Total	41	100.0	100.0	

From table 4.9, the frequency of post-test after being distributed there were 1 student or 2.4% who got score 70 which meant that the students' writing quality was good, there were 11 students or 26.8% who got score 75 which meant that the students' writing quality was very good, there were 15 students or 36.6% who got score 80 which meant that the students' writing quality was very good, there were 11 students or 26.8% who got score 85 which meant that the students' writing quality was excellent, there were 3 students or 7.3% who got score 90 which meant that the students' writing quality was excellent.

b. Post-test of Control Group

Table 4.10 Statistics Post-Test of Control Group

N	Valid	42
	Missing	0
Mean		73.5714
Std. Error of Mean		.76747
Median		75.0000
Mode		75.00
Std. Deviation		4.97380
Variance		24.739
Range		20.00
Minimum		65.00
Maximum		85.00
Sum		3090.00

Based on table 4.10, it can be seen that the mean of the score was 73,57. It means that the average score of 42 students in the control group was 73. The median in the post-test was 75.0000. It meant that the middle score of post-test was 75. The mode in the post-test was 75. It meant that the most frequently appeared score was 75. The standard deviation in the post-test was 4.97380. The range in the post-test was 20. Meanwhile, the minimum score in the post-test was 65. The maximum score in the post-test 85. The summary of post-test was 3090. In addition, the researcher organized the percentage and the frequency of the test, it can be seen in table 4.11.

Table 4.11 Frequency of Post-Test of Control Group

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 65	4	9.5	9.5	9.5
70	14	33.3	33.3	42.9
75	16	38.1	38.1	81.0
80	6	14.3	14.3	95.2
85	2	4.8	4.8	100.0
Total	42	100.0	100.0	

From table 4.11, the frequency of post-test after being distributed there were 4 students or 9.5% who got score 65 which meant that the students' writing quality was good, there were 14 students or 33.3% who got score 70 which meant that the students' writing quality was good, there were 16 students or 38.1% who got score 75 which meant that the students' writing quality was very good, there were 6 students or 14.3% who got score 80 which meant that the students' writing quality was very good, there were 2 students or 4.8% who got score 85 which meant that the students' writing quality was excellent.

B. Normality and Homogeneity Testing

1. Normality Testing

Normality testing is used to decide whether the data distribution is normal or not. Normality proposed to show that the sample data come from a normally distributed population. To find the normality of the instrument, the researcher used SPSS.16.0 program *One-Sample Kolmogorov-Smirnov* test of the value of significance (α) = 0.050. The result can be seen as follows:

**Table 4.12 Normality Testing
One-Sample Kolmogorov-Smirnov**

		PRETEST	POSTTEST
N		41	41
Normal Parameters ^a	Mean	63.7805	80.4878
	Std. Deviation	4.84516	4.84831
Most Extreme Differences	Absolute	.206	.199
	Positive	.206	.199
	Negative	-.185	-.167
Kolmogorov-Smirnov Z		1.316	1.272
Asymp. Sig. (2-tailed)		.063	.079

a. Test distribution is Normal.

Based on table 4.12 above, it showed that the significant value of pre-test was 1,316 and from the post-test was 1,272. Both values from pre-test and post-test were higher than 0.05. Then, the value from Asymp. Sig. (2-tailed) of the pre-test was 0.63 it is higher than 0.05 ($0.63 > 0.05$) it meant that the data was in a normal distribution. For the post-test score was 0.79 and it was higher than 0.05 ($0.79 > 0.05$) it meant that the data was in a normal distribution. It also meant that H_0 is accepted and H_a is rejected. From the data above, can be concluded that pre-test and posttest were normal distribution because the value significant of pre-test and post-test was higher than 0.05.

2. Homogeneity Testing

Homogeneity testing conducted to know that the collection of the data has homogeneous variance or not. To know the homogeneity, the researcher used Levene with SPSS.16 by the value of significance (α) = 0.05. The result can be seen as follows:

Table 4.13 Homogeneity Testing

	Levene Statistic	df 1	df2	Sig.	
Students' writing score	Based on Mean	0.99	1	81	.754
	Based on Median	.043	1	81	.836
	Based on median and with adjusted df	.043	1	80.381	8.36
	Based on trimmed mean	.152	1	81	.697

Based on table 4.13 above, it can be known that the significant value was 0.754. The test was called homogeneous if the significance scores more than 0.05. Based on the table above, the test is homogeneity because of $0.754 > 0.05$. So, it can be concluded that the data is homogeneity.

C. Hypothesis Testing

The hypothesis testing of this study as follows:

1. When the significant level is less than 0.05, the alternative hypothesis (H_a) is accepted and the null hypothesis (H_0) is rejected. It means that there is a significant effect of using a Grammarly checker towards students' writing quality.
2. When the significant level is more than 0.05, the null hypothesis (H_0) is accepted and the alternative hypothesis (H_a) is rejected. It means that there is no significant effect of using a Grammarly checker towards students' writing quality.

After organizing the frequency and the percentage of score from pre-test and post-test, the means, the medians, the standard deviations, the variances, the minimum and the maximum of the writing pre-test and post-test scores of the sample. Therefore, to investigate whether Grammarly checker gave an effect on students' writing quality or not. The researcher tested the result of post-test by using Independent Samples T-Test in SPSS 16.00 program.

Table 4.14 Independent Samples T-test

	Levene's Test for Equality of Variance		t-t test for equality of means						
	F	Sig	T	Df	Sig. (2-tailed)	Mean difference	Std. error of difference	95% Confidence Interval of the Difference	
								lower	Upper
Equal variances assumed	.099	.754	6.413	81	.000	6.91638	1.07845	4.77059	9.06216
Equal variances not assumed			6.415	81.000	.000	6.91638	1.07812	4.77126	9.06149

Based on Table 4.14, shows that the result of Levene's Test for Equality of Variances. From the result, it can be seen that $F= 0,099$ ($p=0,754$) because of p higher than 0.05, it indicated that there is no difference in variance data or in the other words data was equal/homogenous. If the data was homogeneous, it can be seen on the

result of *equal variances assumed*. As can be seen on the table above, it showed that *Df* (Degree of freedom) was 81. Therefore, the way to test whether the null hypothesis can be rejected was by comparing the p-value with the standard level of significance, 0.05. The convention to reject the null hypothesis was when the p-value of the obtained statistics was less than 0.05 (Balnaves & Calputi, 2001). As Table 4.14 showed, the p-value was less than 0.05 ($0.000 < 0.05$). Thus, there was enough evidence indicating that the null hypothesis could be rejected, and it could be concluded that there was a significant effect of using a Grammarly checker towards students' writing quality.

D. Discussion

The purposes of the research are to find out the score of the students' writing quality of the fourth semester of English Department before and after using Grammarly and to find out whether there is a significant difference score on the students' writing quality before and after using Grammarly checker that can be identified through the result of pre-test and post-test of the experimental group and control group. Then, after the data has been collected, the data were analyzed using SPSS 16.0.

Based on the data analysis, the sig. (2 tailed) was 0.000. It means that the significant level was less than 0.05 ($0.000 < 0.05$). Thus, the alternative hypothesis (*H_a*) was accepted and the null hypothesis (*H_o*) was rejected. Therefore, there was a significant difference score on the students' writing quality before and after using Grammarly checker.

Besides, from the data, the score's result of post-test is higher than the pre-test. It means that the students had increased after getting treatment. Thus, it could be concluded that the use of Grammarly checker is effective towards the students' writing quality at IAIN Tulungagung.

In addition, the students' score in pre-test and in post-test of the experimental group that was conducted on 16th March 2019 and on 2nd April 2019, showed that there was an improvement of the mean from pre-test 63.73 to post-test 80.49. It showed that the students got good improvement in their writing after using Grammarly checker.

Besides, in the pre-test, the researcher found common some mistakes in the students' writing such as grammatical errors, wrong spelling, punctuation, and capitalization. The grammatical error that students often did, such as missing subject, missing be in the simple predicate, wrong simple predicate missing be, superfluous be, error in using a verb, and missing article. While in writing mechanics namely spelling, punctuation, and capitalization the students often did error in capitalization and punctuation. Most of the students, commonly ignored to capitalize a word, for instance, they still ignored to capitalize the first word of the sentence, the name, and other proper nouns, and capitalize the first word of a quote. Meanwhile, the most common punctuation mistakes that students often did namely missing commas and quotation marks.

Then, after the students got treatment, the result of the post-test of the experimental group showed that there is an improvement in the

students' writing score. Whereas, in the control group, the mean of pre-test was 68.57 and post-test was 73.57 which is there is an improvement in the students' writing score even though not higher than the experimental group. Besides, both of the experimental group and the control group are using a grammar checker. However, the Grammarly checker identifies and correct the students' writing more deeply than Spelling and Grammar Checker in Microsoft that used by the control group.

Grammarly checker is a good tool to help students edit and correct a grammatical error, punctuation, spelling, style, and sentence structure of their writing. According to Moore (2018) defined Grammarly as a kind of application that automatically detects potential grammar, spelling, punctuation, word choice, and style mistakes in writing. Grammarly checks spelling, grammar, and readability of written material. By using Grammarly checker the students can easily fix spelling mistakes, grammar mistakes and other punctuation mistakes like an apostrophe, comma splice, etc., in their writing. The students also can upload their copy to their online platform to get proofreading done and also with their free browser extension the users can proofread their social posts, emails, etc., in no time.

Furthermore, in learning English as a foreign language, it is needed tools and media to help the students learning a language effectively. The existence of technology gives numerous advantages to learners in learning English. Likewise the use of technology in writing. The students need

spelling and grammar checker software as a tool to identify mistakes and other language errors in their writing. According to Phoebe Stedman (2012), there are lots of benefits of using a spelling and grammar checker software. For the students, teachers, professionals, businessmen who are busy enough and other research workers spelling and grammar checker software is a hot cake. John Day (1988) also argued that the grammar checker process helps students think about their writing.

Based on the findings from this study, it is proved that using Grammarly checker give advantages in writing. One of the advantages of Grammarly checker is students can fix the grammatical error and writing mechanics in their writing easily. It offers a great way for writers to correct their writing and it also shows the way to make a correction. Another advantage is the tool helps to improve the learners writing style and make the written word more engaging and effective.

Finally, it can be proved that using a Grammarly checker as a grammar checker tool in writing can make the students' writing quality better. Grammarly checker is effective towards students' writing quality indicated with correct spelling, grammatically correct, correct punctuation, correct sentence structure and style and could make the written word more engaging and effective.