

## **CHAPTER IV**

### **FINDINGS AND DISCUSSIONS**

This chapter discusses the findings of the research and discussion based on the data which is derived from the result of the effectiveness of instructional chain method in hortatory exposition text to analyze students' higher order thinking skills.

#### **4.1 Findings of the Research**

The data taken from the research is analyzed in this chapter. It aims to find out the effectiveness of instructional chain method in hortatory exposition text to analyze students' higher order thinking skills. The analysis is about the comparison between the students who were taught using instructional chain method and the students who were taught using traditional method. This research was conducted in SMA Muhammadiyah 10 Surabaya by using the analysis of quantitative data. The data was taken by giving test to the experimental class and control class. The subjects of this research were divided into two classes. There are XI MIA 1 as the experimental class and XI MIA 2 as the control class. The tests were given before and after the students got the treatment which was provided by the writer.

Before conducting the treatments, the writer determined the materials and lessons plan. The lesson plans were made into two types. The first one was made for the experimental class which used the instructional chain method. The other one was made for control class which used the scientific approaches. Before conducting the pre-test for the two classes, the writer gave a try out test to another class (XI MIA 2) to find out the validity and the reliability test based on the first rater and second rater. The writer prepared a form of essay test for the students. Furthermore, the writer used a scoring rubric adapted from Oshima and Hogue's assessment. After that, the data were calculated by using Microsoft excel and SPSS version 16.0.

#### **4.1.1 The Implementation of Instructional Chains Method**

The research was started on April 2019 in SMA Muhammadiyah 10 Surabaya. The implementation of instructional chains method in experimental class was treated twice by the English teacher. The first treatment was on 03 April 2019 and the second time was on 29 April 2019. The English teacher applied the lesson plan made by the writer. The researcher acted as observer during the class. When the teacher needed a help, the writer helped her such as monitoring the time for practicing instructional chain method.

The material of first meeting was about the structure of hortatory exposition text. The gramatical aspect had been already taught by the english teacher in the first semester. The students were very curious about the treatment because the teacher already told them that the writer would come. When the writer came, they had so many questions such as “wow, a new teacher!”, “is this the time for using new method in English learning miss?” That was a good welcome from the students who were interested to study with a new technique. The students followed the learning process well. When the teacher asked them to try to make a sentence, they could make it although they still had some mistakes in grammar. They questioned about some vocabularies that they did not know. After teaching the material, the teacher gave the procedure of instructional chain method. Overall, the implementation of first meeting worked well.

The second meeting focused on practicing to instructional chain method. The teacher gave review about the previous meeting to remind them about the procedure of instructional chain method. After that the teacher asked them to sit with their group. In one group, there might 2 latter to be used to instructional chain method. Then, the teacher wrote a sentence for writing hortatory exposition text to start the instructional chain method. Next, the first group needed to continue the sentence using their own idea and language. The duration of each person to write was one minutes. The teacher the second group randomly. The problem occurred when there some groups which needed more than one minute to instructional chain story. They said that they were afraid of making grammatical mistakes. The solution was the teacher asked them to write anything based on their ability. After the instructional chain method was finished, the teacher asked

the student's to read their text. The teacher asked the students about sentences which were thesis, arguments, and recommendation. They discussed together and communicated their result. The teacher also reviewed about their grammatical errors based on their text. In addition, the students were enthusiastic to chain method because they did cooperate to make the sentences to sum up; the second meeting was successful to make the student practice instructional chain method.

**Table 4.1 Research Schedule**

<b>Pre-Research</b>		
	<b>Group</b>	<b>Activity</b>
Wednesday 3 April 2019	-	Sending the permission letter to the school.
Friday 5 April 2019	Try out class (XI MIA 1)	The writer conducted a try out to a class which has same ability as control and experimental classes.
	-	The researcher met the English teacher to give the lesson plans for teaching in control class and experimental class.
<b>Research Process</b>		
Monday 8 April 2019	Experimental and Control Class	The researcher gave the pre-test for both experimental and control classes
Wednesday 10 April 2019	Control Class (First meeting)	The teacher tough them about the structure of the text and practiced the instructional chain method
Monday 15 April 2019	Experimental Class (First meeting)	The teacher tough them about the structure of the text and practiced the instructional chain method
Wednesday 17 April 2019	Control Class (Second meeting)	The teacher gave instructions to the students to practice the instructional chain method
Monday 22 April 2019	Experimental Class (Second meeting)	The teacher gave instructions to the students to practice the instructional chain method

Wednesday 24 April 2019	Experimental and Control Class	The writer gave the post test for both experimental and control classes
<b>Research Closing</b>		
Monday 29 April 2019	-	Post-test is assessed by the English teacher and the writer.
	-	Asking the letter of finishing the research from the school.

#### 4.1.2 Validity and Reliability Test

##### 4.1.2.1 The Result of Validity Test

There were two tests which needed to use before doing the experiment validity test was validated by the expert judgments to evaluate about the content of the test for the try out and the lesson plan. The validators were Armeria Wijaya S.Pd, M.Pd as the lecturer of English writing in Muhammadiyah University of Surabaya and Talitha Shabrina El-Jihan S.Hum as Teacher in SMA Muhammadiyah 10 Surabaya. After the writer conducted a try out test to class which was different from control and experimental classes, the data was analyzed using reliability test was used to analyze the data taken from the first and the second ratters by using SPSS version 16.0.

**Table 1.2 List of Expert Validation**

No.	Name	Validation of the Test		Date of Validation
		Yes	No	
1.	Armeria Wijaya S.Pd, M.Pd	√	-	20 April 2019
2.	Talitha Shabrina El-Jihan S.Hum	√	-	17 April 2019

**Table 4.3 The Result of Validity Test**

Test Instruction	Core Competence	Basic Competence	Indicator	Valid
<ul style="list-style-type: none"> <li>- Write a hortatory exposition text</li> <li>- Make sure that the paragraph consist of thesis, Argument, and recommendation</li> </ul>	<ul style="list-style-type: none"> <li>- Understanding, applying, analyzing the factual, conceptual, and procedural knowledge based</li> </ul>	3.1 Analyzing thye social function, text structure, and linguistic structure on the statement or action of events which already	<ul style="list-style-type: none"> <li>- Student are able to understand the component of hortatory exposition text.</li> <li>- Students are able to</li> </ul>	√

Test Instruction	Core Competence	Basic Competence	Indicator	Valid
- You have 60 minutes to write your argumentative writing. Scoring will be based on organizational structure, developing idea, vocabulary and grammar usage, and mechanism of writing	on their curiosity, culture, art, humanity related to the solve the problems. - Analyzing, presenting, and creating something abstract to something concrete referring to what the students learn aim the school by using the learned method.	happened in the past based on the context.  4.4. Arrange hortatory, oral and written exposition texts on topics that are commonly discussed, with regard to social functions, text structures, and correct and appropriate language elements.	analyze the structure of hortatory exposition text such as thesis, argumentation, and recommendation.  - Students are able to reconstruct the text based on their own sentences.	

#### 4.1.2.2 The Result of Reliability Test

Correlation is the tool to find out the result of reliability test. It aims to know the reliability of the scores examined by the ratters. According to Sugiyono (2011:184), there is a criteria to interpret the result of reliability test by using correlation. There are very low (0.000-0.199), low (0.200-0.399), moderate (0.400-0.599), strong (0.600-0.799), and very strong (0.800-1.000) (Sugiyono, et al). Inter ratter was done by the first ratter and the second ratter is the writer. The result of reliability test was analyzed by using SPSS version 16.0. The result of the validity test by using SPSS is show in the following tables:

**Table 4.4 Result of Reliability Test**

Cronbach's Alpha	N of Items
.463	4

#### Correlations

		Pretest	Posttest
pretest	<b>Pearson Correlation</b>	1	.599**
	<b>Sig. (2-tailed)</b>		.000
	<b>N</b>	30	30
posttest	<b>Pearson Correlation</b>	.599**	1
	<b>Sig. (2-tailed)</b>	.000	

N	30	30
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**\*\*.** Correlation is significant at the 0.01 level (2-tailed).

Based on the result of result of reliability, the ratters had small difference in assessing the students paragraph. The mean of the first ratter is 70.16 and the mean of second ratter is 79.86. The result of reliability is 0.599 which mean that it is classified into moderate.

#### 4.1.3 The Result of Pre Test and Post Test

The researcher showed the result of pre-test and post-test both in experimental and control classes. The data could be seen in the table below:

**Table 4.5 Pre-Test and Post-Test Scores**

Student	Passing Grade	Control Class		Experimental Class	
		Pre Test	Post Test	Pre Test	Post Test
1	75	75	78	70	84
2	75	60	70	60	85
3	75	84	85	56	75
4	75	65	70	54	60
5	75	74	80	64	73
6	75	70	65	70	76
7	75	75	64	85	90
8	75	70	74	52	78
9	75	75	84	70	90
10	75	78	80	54	65
11	75	67	60	70	65
12	75	65	62	80	95
13	75	70	85	65	78

Student	Passing Grade	Control Class		Experimental Class	
		Pre Test	Post Test	Pre Test	Post Test
14	75	73	75	74	75
15	75	65	70	60	85
16	75	50	65	90	98
17	75	80	85	75	85
18	75	75	80	90	80
19	75	60	65	62	75
20	75	70	75	65	75
21	75	70	85	70	84
22	75	75	78	70	84
23	75	60	70	60	85
24	75	84	85	56	75
25	75	65	70	54	60
26	75	74	80	64	73
27	75	70	65	70	76
28	75	75	64	85	90
29	75	70	74	52	78
30	75	75	84	70	90
Mean		70,46667	73,66667	70,16667	79,86207
The highest score		90	94	85	98
The lowest score		50	60	52	60

Based on the data above, it can be seen that the score of control and experimental classes does not have far difference. The mean of experimental class

is 70.16 and the mean of control class is 70.4. The lowest score in experimental is 52 and the highest score is 85. In other hand, the lowest score in control class is 50 and the highest score is 90.

Based on the data above, it shows that the score of control and experimental classes does not have far difference. The mean of experimental class is 79.86 and the mean of control class is 73.66. The lowest score in experimental class is 60 and the highest score is 98. In other hand, the lowest score in control class is 60 and the highest score is 94.

#### 4.1.4 The Percentage of Pre-Test and Post-Test

**Table 4.6 The Percentage of Pre-Test and Post-Test of Experimental Class**

Passing Grade	Experimental Class		Percentage of the Test	
	Pre Test	Post Test	Pre Test	Post Test
$\geq 75$	11	30	36.66 %	100 %
$\leq 75$	19	5	63.33 %	16.66 %

According to the table above, it can be seen that the comparison of the pre-test and post-test in experimental class shows the percentage that exceed the passing grade of pre-test is 36.66% and the post test is 100%. The increasing is 63.34%. According to the table above, it can be seen that the comparison of the pre-test and post-test in experimental class shows the percentage that less than the passing grade of pre-test is 63.33% and the post-test is 16.66%. The decrease is 46.67%.

#### 4.1.5 The Result of Normality Test

The researcher conducted a pre-test for the control class and the experimental class. After that, the data is analyzed by a normality test to find out whether the data is taken in a normal distribution. The criteria for interpreting the results of the normality test are using terminology which means significant (sig.). If the score (sig.) is more than alpha ( $\alpha$ ) 0.05, it means that the data has a normal distribution. The hypothesis can be seen as follows:

<p><math>H_0</math> Push away, if <math>P(\text{Value}) &gt; (\alpha) 0,05</math>, so the data is normal distribution</p> <p><math>H_1</math> Push away, if <math>P(\text{Value}) &lt; (\alpha) 0,05</math>, so the data is not normal distribution</p>
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The normality test was calculated by using SPSS version 16.0 of Kolmogorov-Smirnov test. The criterion of normality was analyzed by the result of P-Value or (sig.). Furthermore, the value of alpha ( $\alpha$ ) is 0.05.

The normality test used was Kolmogorov-Smirnov in SPSS version 16.0. According to the table above, the value of both experimental and control class are same significance which is 0.200. As the criteria above, if the value of significance is more than 0.05, it means that the data has the normal distribution. It can be concluded that the data is normal distribution.

The students' score of post-test was calculated to find out whether the data has normal distribution or not the test or normality both experimental and control classes was analyzed by using Kolmogorov-Smirnov test in SPSS version 16.0. The criteria of how to interpret the result of normality test is by using terminology of which means the significant (sig.). If the score of (sig.) is more than Alpha ( $\alpha$ ) 0.05, it means that the data has normal distribution. The hypothesis could be seen in the next page.

**Table 4.7 The Result of Normality Test  
One-Sample Kolmogorov-Smirnov Test**

		Control Class		Experimental class	
		Pretest	posttest	petest2	posttest2
N		30	30	30	30
Normal Parameters <sup>a</sup>	Mean	70.4667	73.6667	70.1667	80.0000
	Std. Deviation	8.60927	9.16641	1.00998E1	9.63829
Most Extreme Differences	Absolute	.178	.128	.127	.135
	Positive	.133	.128	.107	.074
	Negative	-.178	-.089	-.127	-.135
Kolmogorov-Smirnov Z		.977	.700	.694	.741
Asymp. Sig. (2-tailed)		.295	.711	.721	.642

a. Test distribution is Normal.

Based on the result of normality test, the researcher concludes that the result of normality test in post-test both control and experimental group is in normal

distribution. The sig. of experimental class is 0,642 which is more than 0,05. Furthermore, the sig. of control class is 0,711 which is more than 0,05. So, H<sub>0</sub> is accepted and the data is in normal distribution.

#### 4.1.6 The Result of Homogeneity Test

After that the writer calculates the normality test to measure that the data is normal. The writer would like to find a homogeneity test. It aims to find out that the control class and experimental class have the same abilities. The main data used in the homogeneity test is the pre-test score of both the control group and the experimental group. The homogeneity test hypothesis is as follows:

If P (Value) > ( $\alpha$ ) 0.05, there is no different between experimental and control class (homogenous)
If P (Value) < ( $\alpha$ ) 0.05, there is different between experimental and control class (not homogenous)

The criteria for interpreting the results of the homogeneity test are using P-value terminology which means the significant (sig.). If the score (sig.) is more than alpha ( $\alpha$ ) 0.05, it means that there is no difference between the experimental class and the control and the data is homogeneous. The homogeneity test results using SPSS can be seen below:

**Table 4.8 Result of Homogeneity Test**

	Sum of Squares	Df	Mean Square	F	Sig.
<b>Between Groups</b>	<b>1816.883</b>	<b>12</b>	<b>151.407</b>	<b>2.255</b>	<b>.061</b>
<b>Within Groups</b>	<b>1141.283</b>	<b>17</b>	<b>67.134</b>		
<b>Total</b>	<b>2958.167</b>	<b>29</b>			

Based on the table above, it shows that P-value (0.061) is higher that alpha (0.05). It means that the data is homogeneous. It can be concluded that H<sub>0</sub> is accepted which means that both classes have same characteristic.

#### 4.1.7 The Result of T-Test

After the researcher calculated normality and homogeneity for both classes. The writer wants to know the scoring and compare means the result of pre-test between experimental and control class. The writer compared the result of pretest

score to find the differences between both groups before treatment applied. Meanwhile, they writer compares the result score of post-test between both classes to identify whether Instructional chain method is effective or not in teaching writing hortatory exposition text. The hypothesis is formulated in the following:

- $H_0$  is there is no significant difference between the students who are taught by using instructional chain method and the students who are taught by using instructional chain method
- $H_1$  is there is significant difference between the students who are taught by instructional chain method and the students who are taught by using instructional chain method

If  $T \text{ count} < T \text{ table}$ , so is means that  $H_0$  is accepted

If  $T \text{ count} > T \text{ table}$ , so it means that  $H_0$  is pushed away

The test criteria based on the value of P-value is in the following:

If  $P\text{-value} > (\alpha) 0,05$ , so it means that  $H_0$  is accepted

If  $P\text{-value} < (\alpha) 0,05$ , so it means that  $H_0$  is pushed away

**Table 4.9 Result of Independent Sample T-Test**

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
	Score	F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
	Equal variances assumed	.013	.908	2.145	60	.036	5.000	2.331	.333	9.6951

**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	95% Confidence Interval of the Difference	
									Lower	Upper
Score	Equal variances assumed	.013	.908	2.145	60	.036	5.000	2.331	.333	9.6951
	Equal variances not assumed			2.145	18.747	.036	5.000	2.331	.333	9.7678

From the calculation above, it can be analyzed that T count is 2.145. The total of the students in each class is 30 so the T table is 1.671. It means that T count (2.145) is more than T table (1,671). According to the criteria, if T count is more than T table, it means that there is significant difference between the students who are taught by using instructional chains method and the students who are taught by using instructional chains method. It can be concluded that H0 is pushed away and H1 is accepted.

From the result above, it shows that the value of P-value of both classes is 0,036. According to the value of p-value, it is lower than alpha ( $0,036 < 0,05$ ), so H0 is passed away. It means that H1 is accepted which is there is significant difference between the students who are taught by using instructional chains method and the students who are taught by using instructional chains method.

**4.1.8 The Result of Eta Squared**

The researcher counted the eta squared to calculate the effect size of the using instructional chain method to develop students' writing ability in learning hortatory exposition text there is a criteria of the result in eta squared to measure the effect of the treatment (Pallant, 2010). First, if the score is 0,00 – 0,01, it means that it has small effect. Second, if the score is 0.006, it means that it has moderate effect. The last, if the result is more that it has large effect.

**Table 4.10 Result of Paired Sample T-Test**

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Pretest_experimental - posttest_experimental	-9.83333	8.85159	1.61607	-13.13857	-6.52810	-6.085	29	.000

$$\begin{aligned} \text{Eta Square} &= \text{Mean} : \text{Std. Deviation} \\ &= 9.83 : 8.85 \\ &= 1.11 \end{aligned}$$

From the calculation above, the researcher analyzed from the result of paired sample T-test. It could be analyzed that the mean is 9.83 and the standard deviation is 8.85. By dividing mean and standard deviation, we could find the result of eta-squared. The result is 1.11 which means that it is classified into large effect to develop the students' writing ability in hortatory exposition.

#### 4.2 Discussion

Based on the result, it shows that the use of instructional chain method in teaching writing hortatory exposition text at SMA Muhammadiyah 10 Surabaya give a significant effect. It showed that experimental class students get better score than control group in writing hortatory exposition text in post-test. Experimental class also gets the significant different result after getting the treatment by using instructional chain method in writing hortatory exposition text. It means that using instructional chain method as learning is effective technique in teaching writing hortatory exposition text. There are three proves in the following to support the statement that the technique is effective. The instructional chain method is proven to be effective due to 3 aspects; the mean of both classes, the T-test calculation result; and the calculation of the students who passed the passing grade of English.

First, the data analysis can be interpreted based on the mean score of both classes. The mean score of control class in pre-test is 70.4 and the post-test is 73.6. The improvement based on the post-test and pre-test in control class is 3.2.

In other hand, the mean score of experimental class in pre-test is 70.1 and the post-test is 79.8. The improvement based on the pre-test and post-test in experimental class is 9.7. While, the improvement of experimental class is better than control class. In short, it is because the implementation of the instructional chain method effectively develops students' writing ability in learning hortatory exposition text.

The second supporting data is found from the T-test calculation in SPSS version of 16.0. Analyzing the data using T-test calculation in SPSS, the researcher found the result that the value of  $T_{\text{count}}$  is 2,145 and the value of  $T_{\text{table}}$  is 1,671 with degree of significant of 5%. The result indicates that the  $T_{\text{count}}$  (2,145) is more than  $T_{\text{table}}$  (1,671). It means that  $H_0$  is pushed away so it can be inferred that  $H_1$  is accepted. Accordingly, there is significant difference between the students who are taught by using instructional chain method and the students who are not taught by using instructional chain method.

The third criteria are about the students who pass the passing grade. In control class, there are 9 students in pre-test and 17 students in post-test who can pass the passing grade. The percentage of control class who passes the passing grade rises from 30% to 56%. In contrast, the experimental class has different amount of students who can pass the passing grade. There are 11 students in pre-test and 30 students in post-test who can pass the passing grade. The percentage of experimental class who passes the passing grade rises from 36.66% to 100%. The improvement of percentage in control class is 26,67%. In other hand, the improvement of percentage in experimental class is 63.34%. It shows that the percentage of the students who can pass the passing grade in experimental class is more than control class to sum up; the using of instructional chain method is effective to develop students writing hortatory exposition text.

In the results of the observation, the researcher made two observations in the experimental class in class XI MIA I and in the control class in class XI MIA 2. It can be seen that the lesson included the use of higher order thinking skills. It was proven where there were the students active in asking and answering the teacher. They are able to respond to teacher questions and instructions. The teacher also tries to direct students to be critical by giving them some problems or ideas to

discusse. Learning applied in the experimental class uses instructional chains method. While in the control class using the project based learning method.

In the experimental class, students are allowed to choose their own problems or problems to write. The teacher divides students into groups, then each group is given the task to write a hortatory exposition text in chains. Each student writes sentences according to the generic structure, there are; thesis, argument, and recommendation, until it is arranged into a complete hortatory text according to the theme chosen by each group. At the second meeting, the teacher instructs students to write hortatory texts independently. The type of assessment that is suitable with the learning objectives. But students do not complete their assignments on time because the time required in the chain instruction class is long. The transition between activities is not efficient because the class does not run on time because some students come late. It was one of the deficiency of moving class In short, the class shows the process of critical thinking in learning to be further analysis.

In the control class, the teacher uses the project based learning method. But the learning goals were not stated clearly in the beginnging so the students were passive early. The teacher explains the generic structure and gives several examples of hortatory texts to be analyzed by students. Then students are instructed to choose their own theme prepared by the teacher. After analyzing hortatory text examples the teacher instructs students to make hortatory texts independently.

The disadvantage of this technique is that the rules controlled by the teacher. If the practice of instructional chain method in the class is conducted, the teacher plays a role as a controller the effect is the student cannot feel free because each group should continue the sentence in less than one minute. The solution of the problem is to let the students do the instructional chain method without giving limited duration. The teacher gives 15 minutes for the students to do the instructional chain in writing hortatory exposition text in their group. The teacher may give a start sentence in each topic to do instructional chain. After that the students do the instructional chain with their own group. After the time is up, each

representation will read their writing hortatory exposition text. The texts which are created will be various and the students will feel free to write.

The problem occurred when there were some groups which needed more than one minute to instructional chain method. They said that they were afraid of making grammatical mistakes. The solution was the teacher asked them to write anything based on their ability. After the instructional chains method was finished, the teacher asked the students to read their text. The teacher asked the students about sentences which were thesis, argumentation, and recommendation. They discussed together and communicated their result. The teacher also reviewed about their grammatical errors based on their text. In addition, the students were enthusiastic to chains argumentative writing text because they did cooperate to make the sentences. To sum up, the second meeting was successful to make the student practice instructional chains method.

The result of this research is shown that using instructional chain method is effective to develop the students' writing ability in learning argumentative writing in hortatory exposition text. Referring to the previous studies that were written in the chapter 2, the researcher connects them with the findings of the research. First, the finding of this chapter really support the idea stated by Jenniver VanDerHeide and George E. Newell (2013) that instructional chains method is effective to be used in teaching and learning of argumentative writing. In the journal, Jenniver VanDerHeide and Gerge E. Newell stated that instructional chains method did effectively improve the students' writing ability in argumentative writing.