THE EFFECT OF MIND MAPPING TECHNIQUE ON STUDENTS’ ACHIEVEMENT IN WRITING ANALYTICAL EXPOSITION TEXT

Pengaruh Teknik Mind Mapping Terhadap Prestasi Belajar Siswa Dalam Menulis Teks Eksposisi Analitik

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Abstract: The completion of this comparison aims to determine the effect of increasing student achievement in writing analytical exposition texts using the Mind Mapping technique and without the Mind Mapping technique. This comparative research is a qualitative research, which involves high school grade 3 students as the population of this comparison, these students who are students from Creativkids Medan. The result of this comparison is that the value of 67.53 is the value obtained using the Mind Mapping technique. Another thing that does not use the Mind Mapping technique gets a score of 63.5. This also causes if students who use the Mind Mapping technique get the t_obs of 3.43 points, which means that it increases more than t_table 2.00. This has the effect that the alternative hypothesis (Ha) has been accepted and the null hypothesis (Ho) has been rejected. And this makes the reason for the increase in student achievement figures by using the Mind Mapping technique to write analytical analysis texts. So, it can be summarized that the Mind Mapping technique is very effective, appropriate, and easy to be applied by students who will create correct and directed analytical exposition text.

Keywords: Mind Mapping Technique, Writing Analytical Exposition Text


Kata Kunci: Teknik Mind Mapping, Menulis Teks Eksposisi Analitik
1. INTRODUCTION

The Study Background

As global language, English becomes the most studied languages. As in the aviation section which is required to communicate in English in international flights, in the technology section all operations operate in English and organizations such as the United Nations and the European Union use English as the official working language. This is partly due to the large number of countries that use English or recognize it as an official language.

Based on the writer’s teaching experience in SMA N 3 Medan, the writer often encounters students who have difficulties in mastering English lessons. Most students struggle to use grammar and how to write a paper in English. However, in the teaching manual found a lot of material about writing. Students are asked to write a personal letter, job application letter, and various written works in English.

In English learning books, there are many materials about writing. Then students are required to be able to master the writing material well. If students already understand how to write correctly and according to procedures, students can more easily express their opinions in responding or seeing a problem according to their perspective.

As we know, writing is not easy for a student to do. Writing is not as easy as we flip our palms. Writing is an activity of pouring students’ knowledge and experience into writing. Because before making a paper, students must understand the division between information, ideas, and opinions that will be conveyed to the public in a safe time.

Analytical text is a paper delivered by the writer about a phenomenon that is happening. In analytical text, students write the text based on the point of view they face a phenomenon that is happening. Students also write brief sentences to suggestion people to agree with what the writer says by using their writing.

From the various obstacles described above, the instructor immediately designs and sorts a technique that will improve the students' ability to write an analytical exposition text. The comparison tested the appropriateness of the Mind Mapping technique to develop the level of students' ability to write a good analytical exposition text.

The Problem of The Study

With respect to the background of this comparison, the comparator found the following problems:
"Is there any change in student scores with and without using the Mind Mapping technique to write an analytical exposition text?"

The Scope of The Study

The focus in this comparison lies only in the use of Mind Mapping techniques and without the use of Mind Mapping techniques in student learning outcomes in making analytical exposition texts.

The Objective of The Study

The objective of this comparison is to compare the achievement of student scores with the application of Mind Mapping techniques and student scores without the application of Mind Mapping techniques in writing analytical exposition text.

The Significances of The Study

Theoritically:
1. This comparison in the future can determine the feasibility of the Mind Mapping technique in student learning achievement.
2. This comparison is expected to improve students' skills in making analytic exposition texts.

Practically:
1. This comparison is expected to improve the instructors' knowledge to teach writing skills.
2. Students can upgrade their skills in organizing their ideas by grouping them.
3. It is expected that the Mind Mapping technique can be declared feasible to be applied by students in writing a work.

Literature Review

Mind Mapping is a learning technique in which so many lines, illustration, colorfull that are connection each other. This technique is suitable for students because they has a concept of thinking creative to organize their ideas. This way can be use for helping the student to make a better sentence.

The Steps to Applying Mind Mapping Technique

Tony Buzan (2010:15-16) mention that seven steps to create a Mind Mapping:
1. Start it the centre of landscape blank paper
2. Make a central image that represents the topic about which you are writing or thinking
3. Use multiple colours throughout the mind map
4. The lines should be connected, starting from the central image
5. Make curve lines, not straight line
6. Use a keyword in each line
7. Use illustration as much as you can

*The Variants in Writing*

1. Narration
   Narration is a paper that describing a person’s experience based on that person’s do in their life.
2. Description
   Description is a sentence that detailed the position of place, tell the spesification of the object or person as a whole.
3. Persuasion
   Persuasion is a sentence that persuade a person to follow and agree on writer’s idea.
4. Exposition
   Exposition is an idea to investigate, evaluate evidence and argument that idea in clearly and concise manner.

*The Definition of Mind Mapping Technique*

Analytical exposition text is a collaboration of the thesis and the idea of writer and written into some paragraphs. In each paragraph has one purpose. That paragraph named TAR (Thesis, Argument, and Reiteration).

<table>
<thead>
<tr>
<th>Title</th>
<th>Cars should be banned in the city</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis</td>
<td>Cars should be banned in the city. As we all know, cars create pollution, and cause a lot of road deaths and other accidents.</td>
</tr>
</tbody>
</table>
Argument 1
Firstly, cars, as we all know, contribute to most of the pollution in the world. Cars emit a deadly gas that causes illness such as bronchitis, lung cancer, and ‘triggers’ off asthma. Some of these illnesses are so bad that people can die from them.

Argument 2
Secondly, the city is very busy. Pedestrians wander everywhere and cars commonly hit pedestrians in the city, which causes them to die. Cars today are our roads biggest killers.

Argument 3
Thirdly, cars are very noisy. If you live in the city, you may find it hard to sleep at night, or concentrate on your homework, and especially talk to someone.

Reiteration
In conclusion, cars should be banned from the city for the reasons listed.

2. RESEARCH METHODOLOGY

Research Design
This research was taken in quantitative research by using two variables. The aim of this research was to determine the effectiveness of the Mind Mapping Technique on Students' Achievement in writing Analytical Exposition Text.

This research was conducted in two different classes which divided into two groups. The first class was a group that made analytical exposition text by using mind mapping technique as their learning method. Thus, the first class was an experimental class. The second class was a group that made analytical exposition text only with their own abilities without any learning methods. This second class was a controlled class. This research took the results of the pre-test and post-text values as a determinant of the effectiveness of The Mind Mapping Technique on Students' Achievement in Writing Analytical Exposition Text.

Location of the research
This research was conducted in Creativkids Education Medan which located on Jalan Berjaya No. 8R/S at Cemara Asri Housing, Kecamatan Percut Sei Tuan, Medan, Kabupaten Deli Serdang, Sumatera Utara.

Population and Sample
Population is a set of some people into a grup analysis which was studied or analyzed. The population of this study was all students of Creativkids Cemara Medan.
Sample is representative of the majority or the population studied. The sample of this study was JH3Borobudur and JH3 Great Wall 2 classes which was divided into 2 groups, namely the experimental group and the control group where each class consisted of 30 students.

**Research Instrument**

The investigator used 3 steps for finding valid data. They are pre-test, treatment and post-test.

- **Pre-Test**
  
  In this step, the participant were make their writing without any instructions or instruction from the tutor. So the participant did the test with their prior knowledge to writing Analytical Exposition Text.

- **Treatment**
  
  After the tutor got the writing results from the participants, the tutor gave instructions or directions to the participants, so they knew how to write well.

- **Post-Test**
  
  In this step, the participant were asked to re-write the analytical exposition text by their knowledge that had been gave from the tutor.

**Realibility and Validity of Instrument**

**Reliability**

Based on Person’s Moment formula (Best and Khan, 2006:384) as mention below:

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

Where:
- \( \rho \) = reliability coefficient
- \( \sum X \) = sum of the first score
- \( \sum Y \) = sum of the second the score
- \( \sum X^2 \) = sum of the squared first test score
- \( \sum Y^2 \) = sum of the product of second test score
- \( \sum XY \) = sum of the products of paired first and second scores
- \( N \) = number of subjects
Validity

To find out the test was valid, the validity of the test was analyzed by using Correlation Point Biserial formula. As mention below.

Validity Instrument
- Construct Validity
- Content Validity

Technique of Data Analysis

To find out the effect of using The Mind Mapping Technique and to calculate the results of the data, investigator used the T-test formula as follow:

\[
t = \frac{Mx-My}{\left(\frac{dx^2 + dy^2}{Nx+Ny-2}\right)^{1/2} \left(\frac{1}{N_x} + \frac{1}{N_y}\right)}
\]

\( t \): The value of t-calculated
\( Mx \): The mean of experimental group
\( My \): The mean of control group
\( dx \): The standard deviation of experimental group
\( dy \): The standard deviation of control group
\( Nx \): The total of samples of experimental group
\( Ny \): The total number of samples of control group

3. RESEARCH FINDINGS AND DISCUSSION

Data

The data of this study were obtained after pre-test and post-test applied in the experimental and control group. The data which were needed to test the hypothesis taken from the test scores of each group. The data were tabulated as follow:

Table 1 Pre-test and Post-test Score of Experiential Group
Based on the data above, we could see that the Mind Mapping Technique had a significant on writing of Analytical Exposition text in Experimental group. We could compare from the score of pre-test and post-test in Experimental group, while in the Control group which was taught without applying Mind Mapping Technique did not give a significant effect on writing Analytical Exposition text.
The Fulfillment of Statistical Assumptions

The Realibility Test

Table 3. The Score of Rating Scale by 3 Raters

<table>
<thead>
<tr>
<th>Students’ Initial</th>
<th>Score by 3 Raters</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rater 1</td>
<td>Rater 2</td>
</tr>
<tr>
<td>A.C</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>A.A.S.S</td>
<td>60</td>
<td>63</td>
</tr>
<tr>
<td>A.B.T</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>B.J.J</td>
<td>75</td>
<td>73</td>
</tr>
<tr>
<td>B.P.L</td>
<td>60</td>
<td>58</td>
</tr>
<tr>
<td>C.N.G</td>
<td>67</td>
<td>67</td>
</tr>
<tr>
<td>C.W</td>
<td>85</td>
<td>85</td>
</tr>
<tr>
<td>C.L</td>
<td>73</td>
<td>70</td>
</tr>
<tr>
<td>C.X.L</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>D.X.W</td>
<td>50</td>
<td>53</td>
</tr>
<tr>
<td>D.A</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>E.T</td>
<td>64</td>
<td>62</td>
</tr>
<tr>
<td>E.C</td>
<td>65</td>
<td>67</td>
</tr>
<tr>
<td>F.D</td>
<td>74</td>
<td>72</td>
</tr>
<tr>
<td>F.A</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>G.A.S</td>
<td>82</td>
<td>80</td>
</tr>
<tr>
<td>G.G</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>H.O.T</td>
<td>58</td>
<td>60</td>
</tr>
<tr>
<td>J.E.T</td>
<td>67</td>
<td>64</td>
</tr>
<tr>
<td>J.X</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>J.C</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>L.A.S</td>
<td>58</td>
<td>56</td>
</tr>
<tr>
<td>M.R.C.W.R</td>
<td>73</td>
<td>75</td>
</tr>
<tr>
<td>N.G</td>
<td>67</td>
<td>67</td>
</tr>
<tr>
<td>S.K.K</td>
<td>72</td>
<td>72</td>
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<tr>
<td>S.K</td>
<td>65</td>
<td>63</td>
</tr>
<tr>
<td>T.P.D</td>
<td>72</td>
<td>70</td>
</tr>
<tr>
<td>V.D.K</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>V.V</td>
<td>71</td>
<td>71</td>
</tr>
<tr>
<td>V.V.P</td>
<td>60</td>
<td>58</td>
</tr>
<tr>
<td>Total</td>
<td>2026</td>
<td>2014</td>
</tr>
<tr>
<td>Mean</td>
<td>67.53</td>
<td>67.13</td>
</tr>
</tbody>
</table>

Experimental Group:

\[
\begin{align*}
    r &= \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}} \\
    r &= \frac{30 \times 1764 - (49)(36)}{\sqrt{30 \times 2401 - (49)^2} \sqrt{30 \times 1296 - (36)^2}}
\end{align*}
\]
\[
\begin{align*}
    r &= \frac{52920 - 1764}{\sqrt{72030 - 2401\sqrt{38880 - 1296}}} \\
    &= \frac{51156}{\sqrt{69629 - 2401}} \\
    &= \frac{51156}{\sqrt{37584}} \\
    &= 263.8 \times 193.8 \\
    &= 51124.44 \\
    \therefore r &= 1.00
\end{align*}
\]

The investigator found the score of Coefficient was 1.00 it means the realibility in Experimental Group was High to very high.

<table>
<thead>
<tr>
<th>Students’ Initial</th>
<th>Post-Test</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rater 1</td>
<td>Rater 2</td>
</tr>
<tr>
<td>A.J</td>
<td>65</td>
<td>63</td>
</tr>
<tr>
<td>A.M</td>
<td>63</td>
<td>60</td>
</tr>
<tr>
<td>C.S</td>
<td>60</td>
<td>63</td>
</tr>
<tr>
<td>C.N</td>
<td>52</td>
<td>50</td>
</tr>
<tr>
<td>C.D.A</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>C.L</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>C.C</td>
<td>73</td>
<td>73</td>
</tr>
<tr>
<td>C.L</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>D.S.P</td>
<td>50</td>
<td>52</td>
</tr>
<tr>
<td>E</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>E.L</td>
<td>58</td>
<td>60</td>
</tr>
<tr>
<td>E.O</td>
<td>57</td>
<td>55</td>
</tr>
<tr>
<td>F.G</td>
<td>55</td>
<td>58</td>
</tr>
<tr>
<td>F</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>F.S</td>
<td>67</td>
<td>65</td>
</tr>
<tr>
<td>F.R</td>
<td>67</td>
<td>65</td>
</tr>
<tr>
<td>F.F</td>
<td>55</td>
<td>53</td>
</tr>
<tr>
<td>F.H</td>
<td>70</td>
<td>68</td>
</tr>
<tr>
<td>G.I.C</td>
<td>65</td>
<td>63</td>
</tr>
<tr>
<td>G.F</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>G.R.J.C</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>G.S</td>
<td>60</td>
<td>58</td>
</tr>
<tr>
<td>G.N</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>I.H.Y</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>J.Q</td>
<td>50</td>
<td>53</td>
</tr>
<tr>
<td>J.C.L</td>
<td>65</td>
<td>68</td>
</tr>
<tr>
<td>J.Y</td>
<td>60</td>
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<td>J.C.G</td>
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<td>73</td>
</tr>
<tr>
<td>J.C</td>
<td>60</td>
<td>62</td>
</tr>
</tbody>
</table>
Based on total score of the post-test from the experimental group and control group it seems that the difference between the mean score of the experimental group was higher than the control group 1161 while the control group was 1117. This technique had a score difference of 44. After assessing the skill of students in writing Analytical Exposition Text.

Control group:

\[
\begin{align*}
r &= \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}} \\
 &= \frac{30 \times 1435 - (35)(41)}{\sqrt{30 \times 1125 - (35)^2} \sqrt{30 \times 1681 - (41)^2}} \\
 &= \frac{43050 - 1435}{36750 - 1225} \\
 &= \sqrt{50430 - 1681} \sqrt{35525} \sqrt{48749} \\
&= \frac{51156}{41.579} \\
&= 1.00
\end{align*}
\]

The investigator found the score of Coefficient was 1.00 it means the realibility in Contol Group was High to very high.

The Homogeneity Test

From the data above, the total of differences from scores between Pre-Test and Post-Test of Experimental group were calculated as below:

\[
M_x = \frac{\Sigma d}{N} = \frac{295}{30} = 9.84
\]

In the data above is the total of differences from scores between Pre-Test and Post-Test of Control Group are calculated as below:

\[
M_x = \frac{\Sigma d}{N} = \frac{179}{30} = 5.47
\]

The result of the test was calculated by using t-test formula to improve the hypothesis.
\[ M_x = 9.84 \]
\[ M_y = 5.47 \]
\[ dx^2 = 654.17 \]
\[ dy^2 = 558.97 \]
\[ N_x = 30 \]
\[ N_y = 30 \]

The formula of T-test is as following:

\[ t = \frac{M_x - M_y}{\sqrt{\left(\frac{dx^2 + dy^2}{N_x + N_y - 2}\right)\left(\frac{1}{N_x} + \frac{1}{N_y}\right)}} \]

\[ t = \frac{9.83 - 5.97}{\sqrt{\left(\frac{654.17 + 558.97}{30 - 30 - 2}\right)\left(\frac{1}{30} + \frac{1}{30}\right)}} \]

\[ t = \frac{3.85}{\sqrt{\left(\frac{1213.13}{58}\right)\left(\frac{2}{30}\right)}} \]

\[ t = \frac{3.85}{\sqrt{(20.91)(0.06)}} \]

\[ t = \frac{3.85}{1.120} \]

\[ t = 3.43 \]

**Research Finding**

The result of the test calculation finneds that \( t_{obs} \) value (3.43) was higher than \( t_{table} \) value (2.00) = 3.43 > 2.00 (\( \alpha = 0.05 \)). It was found that the students’ achievement who were taught by applying Mind Mapping Technique was higher than the students’ achievement without applying Mind Mapping Technique. It means that the applying the Mind Mapping Technique was significantly affects the students’ achievement in writing.

**Discussion**

Based on research finding above, we could see the participants got better final results when using Mind Mapping Technique for writing Analytical Exposition Text. It could be seen of pre-test and post-test had been done by the student the experimental class got who the higher score than control class.

**4. CONCLUSION**
Conclusion

Based on the result above, the investigator was conclude that the mean score of the students’ achievement by using Mind Mapping Technique (67.53) was higher than the mean score of the students’ achievement without using Mind Mapping Technique (63.5). The $t_{obs}$ (3.43) was higher than $t_{table}$ (2.00) at the level of significance of 0.05. It means that Ha was accepted. The conclusion of this comparison found that there was a significant effect of Mind Mapping Technique on students’ achievement in writing Analytical Exposition Text.

5. SUGGESTION

Suggestion

Related to the conclusion above, some suggestions were pointed out as below:

1. English tutor should using the Mind Mapping Technique for increase the students’ skill in write an Analytical Exposition Text.
2. The participants should to applying Mind Mapping Technique to make a paper, especially for writing Analytical Exposition text. That is the way to make the participants easy to map and to organize their ideas before writing an Analytical Exposition text.

REFERENCES


