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MIND MAPPING TECHNIQUE ON THE ABILITY TO WRITE DESCRIPTIVE TEXT OF VOCATIONAL HIGH SCHOOL STUDENTS

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Abstract: This study investigates the effect of the mind mapping technique on the ability to write descriptive texts among vocational high school students. The research was conducted at SMK Negeri 41 Jakarta involving 66 tenth-grade students from two classes: X AKL-1 as the control class, taught using conventional methods, and X AKL-2 as the experimental class, taught using mind mapping. Data were collected through a descriptive text writing test and analysed using statistical methods, including the Lilliefors test for normality, the F-test for homogeneity, and the t-test for hypothesis testing. The results showed that students in the experimental class achieved higher scores (mean = 85.53; SD = 5.20) compared to those in the control class (mean = 80.59; SD = 6.10). The homogeneity test confirmed that both data sets were homogeneous (Ftest = 1.379 < Ftable = 1.908). The t-test result (t = 3.553 > ttable = 1.669; α = 0.05) indicated a significant difference between the two groups. These findings demonstrate that the mind mapping technique effectively improves students' ability to organize and express ideas in descriptive writing. It also fosters creativity and engagement during the learning process. This study suggests that integrating mind mapping into English writing instruction can enhance students' performance and could be further developed with digital tools and broader applications across different writing genres.

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INTRODUCTION

Among language skills, writing is perceived as one of the most complex to acquire. Writing is a complex and sometimes difficult skill to teach, as it requires expertise, not only in grammar and rhetoric but also elements in the conceptual and judgmental domains. Writing skills have functions to record, record, convince, report, and influence readers. Therefore, students who master writing skills can express ideas, thoughts, and feelings within themselves. Writing skills can't be learned only with theory but also with practice. It has the aim of improving writing skills, one of which is by writing descriptive text essays in English.

According to (Malau et al., 2022:114), descriptive text is a type of text that contains an explanation of a thing or phenomenon. Descriptive text delivers an in-depth explanation of an object, place, or event, helping readers to comprehend directly what is being described.

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Descriptive text is one of the English lessons that will be taught to vocational students. Mastering descriptive text can help students create other texts such as narrative, recount, and report text.

In the descriptive text, teachers must find the right methods, techniques, and approaches. By using the right methods, techniques, and strategies, students will be motivated to learn so that students are more active in interacting and expressing their opinions about a problem.

Alamsyah (in Mardiani & Agustin, 2022:46) stated that "Mind mapping is a helpful method that can improve learning efficiency, alter how pupils retain information and foster more original problem-solving skills." This study concludes that mind mapping functions as a technique that fosters efficient learning and assists students in resolving issues, especially in the study of descriptive text. This is also supported by Hashempour's statement (in Harefa et al., 2023:7961) which states that "The student can get practice organizing their writing and become more accustomed to utilizing it by employing mind mapping. Thus, the Mind Mapping Technique can assist students in developing their writing abilities, especially when it comes to creating descriptive texts."

Based on the explanation, the researchers chose to conduct the study with 10th-grade students of SMK Negeri 41 Jakarta, as many of them still experience difficulties in expressing their ideas in descriptive text essays, including generating, conveying, and developing those ideas into a complete composition. Therefore, the purpose of this study is to determine the effect of the mind mapping technique on the ability to write descriptive text essays of 10th grade students of SMK Negeri 41 Jakarta..

METHOD

This study applied a quantitative method with a true experimental framework. According to Sugiyono (2019:110), Experimental research methods are used to determine the effect of certain treatments on others in controlled situations. In this study, the researchers provided two different treatments to the study groups: the control group, which consisted of 33 students from class X AKL-1, and the experimental group, which consisted of 33 students from class X AKL-2.

Two variables were examined in this research, namely the mind mapping technique as the independent variable (X) and the students' ability to write descriptive text essays as the dependent variable (Y). The measurement of both variables was carried out using a descriptive text writing test with the following instrument grids:

Table 1 Instrument Grid

Theme	Indicator	Type	Quantity
Describing Person (Idols)	1. Able to write descriptive text according to the theme, structure, and linguistic elements. 2. Able to make mind mapping in writing descriptive texts	Essay	1

According to Brown (in Herwanis & Susidamaiyanti, 2020:222) there are indicators of

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descriptive text assessment that are used as a reference in its assessment. The indicators are content, organization, grammar, vocabulary, and mechanics.

Table 2 Descriptive Text Assessment Indicator

Aspect	Range	Description
Organization	86-100	Identification is complete and the description is organized using appropriate conjunctions.
	71-85	Identification is almost complete and the description is organized using almost appropriate conjunctions.
	50-70	The identification is incomplete and the description is not constructed using the correct conjunctions.
	0-49	It is very difficult to find identification and no linking words are used.
Vocabulary	86-100	Effective word choice and tense.
	71-85	Some misuse of vocabulary and word forms but does not change the meaning.
	50-70	Use of vocabulary and tenses words are limited and confusing.
	0-49	Very poor knowledge of vocabulary and tenses making it incomprehensible.
Grammar	86-100	Very few grammar errors or inaccuracies in sentence construction.
	71-85	There are some grammatical inaccuracies but they do not affect the meaning.
	50-70	Many grammatical inaccuracies
	0-49	Frequent grammatical inaccuracies

Source: Brown (in Herwanis & Susidamaiyanti, 2020:222)

After conducting a descriptive text writing test, data will be obtained that must be processed and analyzed to find answers to research or to test research hypotheses. Data analysis in this study was carried out using descriptive analysis through the calculation of mean/mean, variance, and standard deviation on the results of the descriptive text writing test of 10th-grade students of SMK Negeri 41 Jakarta accompanied by homogeneity and hypothesis tests in both classes, namely experimental and control classes.

RESULT AND DISCUSSION

Result

The findings of this research were derived from a descriptive writing test administered to both groups, with class X AKL-1 serving as the control group and class X AKL-2 as the experimental group. A descriptive analysis technique was used to determine the data characteristics from the explanatory text writing test and to present the results in an understandable way. Descriptive analysis technique is used as an analysis technique to determine the characteristics of the data from the descriptive text writing ability test and present it in an easy-to-understand form.

1. Data analysis of descriptive text writing test results using conventional method

Table 3 Control Class Result Table Data

No	Name	Score	No	Name	Score

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1	Student 1	70	17	Student 17	81
2	Student 2	71	18	Student 18	81
3	Student 3	71	19	Student 19	82
4	Student 4	72	20	Student 20	82
5	Student 5	73	21	Student 21	83
6	Student 6	74	22	Student 22	83
7	Student 7	74	23	Student 23	84
8	Student 8	74	24	Student 24	84
9	Student 9	75	25	Student 25	84
10	Student 10	75	26	Student 26	85
11	Student 11	76	27	Student 27	86
12	Student 12	78	28	Student 28	86
13	Student 13	78	29	Student 29	87
14	Student 14	79	30	Student 30	89
15	Student 15	80	31	Student 31	90
16	Student 16	81	32	Student 32	91
			33	Student 33	92

The data was analyzed using descriptive analysis, resulting in the presentation of data in a frequency distribution table as follows.

Table 4 Control Class Result Table Data

No	Interval	*fi*	*F kum*	*xi*	*fi.xi*	xi^2	$fi.xi^2$
1	70-73	5	5	71,5	357,5	5112,25	25561,25
2	74-77	6	11	75,5	453	5700,25	34201,50
3	78-81	7	18	79,5	556,5	6320,25	44241,75
4	82-85	8	26	83,5	668	6972,25	55778
5	86-89	4	30	87,5	350	7656,25	30625
6	90-93	3	33	91,5	274,5	8372,25	25116,75
	Total	33			2659,5	40133,50	

a) Mean ($\overline{X}$)
$\overline{X} = 80{,}59$

b) Median
$M_e = 80{,}64$

c) Mode
$M_o = 82{,}3$

d) Variance (S^2)
$S^2 = 37{,}27$

e) Standard Deviation (s)
$s = \sqrt{37{,}27} = 6{,}10$

2. Data analysis of descriptive text writing test results using mind mapping technique

Table 5 Experiment Class Result Table Data

No	Name	Score	No	Name	Score

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1	Student 1	73	17	Student 17	87
2	Student 2	75	18	Student 18	88
3	Student 3	78	19	Student 19	88
4	Student 4	79	20	Student 20	88
5	Student 5	79	21	Student 21	88
6	Student 6	80	22	Student 22	88
7	Student 7	82	23	Student 23	88
8	Student 8	82	24	Student 24	89
9	Student 9	83	25	Student 25	89
10	Student 10	83	26	Student 26	90
11	Student 11	83	27	Student 27	90
12	Student 12	83	28	Student 28	91
13	Student 13	85	29	Student 29	91
14	Student 14	87	30	Student 30	91
15	Student 15	87	31	Student 31	92
16	Student 16	87	32	Student 32	93
			33	Student 33	95

The data was analyzed using descriptive analysis, resulting in the presentation of data in a frequency distribution table as follows

Table 6 Experimental Data Class

No	Interval	*fi*	*F kum*	*Xi*	*fi.xi*	xi^2	$fi.xi^2$
1	73-76	2	2	74,5	149	55550,25	11100,50
2	77-80	4	6	78,5	314	6162,25	24649
3	81-84	6	12	82,5	495	6806,25	40837,50
4	85-88	11	23	86,5	951,5	7482,25	82304,75
5	89-92	8	31	90,5	724	8190,25	65522
6	93-96	2	33	94,5	189	8930,25	17860,50
	Total	33			2822,50	43121,50	242274,25

a) Mean ($\overline{X}$)
$\overline{X} = 85.53$

b) Median
$M_e = 86.14$

c) Mode
$M_o = 87$

d) Variance (S^2)
$S^2 = 27.03$

e) Standard Deviation (s)
$s = \sqrt{27.03} = 5,20$

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From the descriptive analysis of both data sets, it was found that the control class averaged 80.59 and the experimental class 85.53, showing that the experimental class's average exceeded that of the control class. Then for the median of the control class a value of 80.64 was obtained, the mode value was 82.30, the variance was 37.27, and the standard deviation was 6.10. For the experimental class, the median value was 86.14, the mode value was 87, the variance was 27.03, and the standard deviation was 5.20. In addition, the experimental class, which was taught using the mind mapping technique, demonstrated higher test scores than the control class that used the conventional method. This can be observed from the writing test scores, as the experimental class obtained an average of 85.53, which is higher than the control class average of 80.59.

3. Homogeneity Testing

Homogeneity testing is carried out to test the variance similarity of each data group. Homogeneity testing can be done with the F (Fisher) test technique. Homogeneity testing using the f test can be done if there are only two data groups to be tested. If Fcount < Ftable, then the sample data can be considered homogeneous. Based on the results of the previous calculation, the variance for the control group was found to be 37.27, while the variance for the experimental group was 27.03. To find out whether the data from the two groups is homogeneous or not, the following formula is needed:

Fcount = 37.27/27.03 = 1,379

With the df numerator for the largest variance (control class) n-1 = 33-1, namely 32, and df denominator for the smallest variance (experimental class) n-1 = 33-1, namely 32, then Ftable = 1.908 is obtained. Therefore, we can conclude that Ftestt < Ftable, 1.379 < 1.908. The results suggest that the sample data are sourced from a homogeneous population.

4. Hypothesis Testing
Testing the hypothesis through a t-test where ttest > ttable. Results obtained from the data analysis t = while (0.05) (64) = 1.6690. The results suggest that mind mapping has a beneficial effect on improving students' skills in writing descriptive texts as opposed to conventional techniques. The hypothesis was tested with the formula:

a. Determining the combined variance

$$S\,gab = \sqrt{\frac{(33-1)27{,}03 + (33-1)37{,}27}{33+33-2}}$$

$$Sgab = \sqrt{32{,}15} = 5{,}67$$

b. Determining the t_{test}

$$t_{test} = \frac{85{,}53 - 80{,}59}{5{,}67\sqrt{\frac{1}{33} + \frac{1}{33}}}$$

$$4{,}94$$

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$$t_{test} = \frac{}{5{,}67\ \sqrt{0{,}060}}$$

$$t_{test} = \frac{4{,}94}{5{,}67\ (0{,}245)}$$

$$t_{test} = 3{,}553$$

For α = 0.05 and dk = 64, obtained from the table the value of t_{table} = 1,669 while t_{test} = 3,553. It can be concluded that $t_{test} > t_{table}$, which means reject H_0 and H_1 is accepted. Thus, the mind mapping technique significantly influences students' ability to write descriptive text essays compared to conventional methods.

Discussion

After carrying out research by implementing mind mapping techniques in descriptive text learning for class X students of SMK Negeri 41 Jakarta, the test results from a sample of 66 students from classes X AKL-1 and X AKL-2 were obtained. The test given is in the form of an essay writing test for descriptive text essays with mind mapping techniques in the experimental class, namely X AKL-2 class and conventional methods in the control class, namely X AKL-1 class.

After the data that has been collected is processed using statistical formulas, it is found that Students instructed through the mind mapping technique achieved an average score of 85.53, a median of 86.14, a mode of 87, and a standard deviation of 5.20. While students who are taught using conventional methods get an average value of 80.59 median value of 80.64 mode value of 82.83 and a standard deviation of 6.10.

The data were subsequently analyzed using the Liliefors test to determine whether both sets were normally distributed. For the control class, which applied the conventional method, the L_o value was 0.1216, while the Ltable value at a significance level of α = 0.05 with N = 33 was 0.1542. Because L0 < Ltable, The findings indicate that the control class data, obtained through conventional methods, follow a normal distribution. Meanwhile, the value from the experimental class that employed the mind mapping technique reached 0.0952, with the Ltable at a significance level of α = 0.05 and N = 33 recorded at 0.1542. Because L0 < Ltable, It can be stated that the data obtained from the control class taught through conventional methods are normally distributed.

The next stage is to conduct a homogeneity test with Ftest of 1.379 with Ftable = F1/2 α with dk numerator (n-1), namely 32 and dk denominator (n-1), namely 32, obtained a value of 1.897. The existence of this can be concluded Ftest < Ftable or 1.379 < 1.908 which means that the written tests from the control and experimental classes are homogeneous. Then hypothesis testing was held with the t price obtained from the calculation of 3.553 and t table of 1.669. Based on the criteria for hypothesis testing, H0 is rejected if ttest is greater than ttable, which means that the research hypothesis is accepted at a significant level of α = 0.05. From the calculations that have been described, it has been seen that students who are taught using mind mapping techniques for descriptive text learning material have better results when compared to using conventional methods.

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Therefore, the study validated the hypothesis stating that the use of the mind mapping technique significantly influences students' ability to write descriptive texts when contrasted with conventional approaches. From the research results that are in accordance with the facts in the field, students are very enthusiastic when taught using mind mapping techniques, they feel more able to explore their respective creativity while still focusing on the material being taught. The mind mapping technique also helps students to capture information more quickly, so in the future this technique is considered effective and can be applied in further learning.

From the findings and discussion of the study, it is concluded that the application of the mind mapping technique impacts the ability of class X students at SMK Negeri 41 Jakarta to compose descriptive text essays. The results also support findings by Al-Jarf (2009), who found that using mind maps in EFL writing classes significantly improved students' ability to organize ideas and enhanced the quality of their written work. Similar studies (e.g., D'Antoni & Zipp, 2006) have also highlighted how mind mapping increases student engagement and creativity in writing tasks.

CONCLUSION

After the data that has been collected, it is found that students who are taught using the mind mapping technique get an average value of 85.53, a median value of 86.14, a mode value of 87, and a standard deviation of 5.20. Students who are taught using conventional methods get an average value of 80.59 median value of 80.64 mode value of 82.83 and a standard deviation of 6.10. Then tested using the homogeneity test with Ftest of 1.379 with Ftable = F1/2α with a numerator dk (n-1) = 32, and denominator dk (n-1) = 32, obtained a value of 1.908. The existence of this can be concluded as Ftest < Ftable or 1.379 < 1.908 which means that the written tests of the control and experimental classes are homogeneous.

Then hypothesis testing was held with the t value obtained from ttest = 3.553 and ttable = 1.6690. Based on the hypothesis testing criteria, H0 is rejected if the ttest is higher than ttable, which means the research hypothesis is accepted at a significant level $\alpha = 0.05$. Thus, this study successfully tested the truth of the hypothesis that a significant effect is observed from the implementation of the mind mapping technique on students' skills in writing descriptive texts compared to those taught using conventional methods.

The findings of this study carry important implications for English language teaching: For Teachers, Mind mapping can serve as an effective alternative to conventional writing strategies, making lessons more interactive and helping students visualize and organize their ideas before writing. For Students, this technique encourages creative thinking and independence in composing descriptive texts, allowing them to explore vocabulary, structure, and detail more confidently. For Schools and Curriculum Developers, integrating mind mapping into lesson plans and teacher training programs could improve not only writing performance but also overall engagement and critical thinking skills in language classrooms.

Although this study demonstrates the effectiveness of mind mapping, further development and research are recommended: Wider Implementation, Future studies could test mind mapping across different genres of writing (e.g., narrative, argumentative, or expository texts) to assess its broader applicability. Integration with Technology, exploring digital mind mapping tools (e.g., Mind Meister, Coggle) could enhance students' engagement and align with 21st-century

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learning skills. Teacher Training, Professional development workshops could be designed to train teachers in effective mind mapping strategies, ensuring proper and consistent application in the classroom.

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