

MIND MAPPING AS A STRATEGY TO IMPROVE IDEA ORGANIZATION IN WRITING AMONG GRADE 10 STUDENTS AT SMK TELKOM 2 MEDAN

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Submit, 13-03-2026

Accepted, 29-04-2026

Publish, 30-04-2026

ABSTRACT

This study investigated the effectiveness of mind mapping as a pre-writing strategy to improve idea organization in writing among Grade 10 students at SMK Telkom 2 Medan. The study employed a quasi-experimental design using a one-group pretest–posttest model involving 27 students. Data were collected through writing tests and a student perception questionnaire. The writing tests were assessed using an analytic rubric focusing on idea organization. The results showed that the mean score increased from 64.33 in the pretest to 77.93 in the posttest, indicating an improvement of 13.60 points. A paired-sample t-test revealed that the difference was statistically significant ($t = 18.27$, $p < .001$). The effect size analysis (Cohen's $d = 1.42$) indicated a large effect of the treatment. The effect size analysis also indicated a strong impact of the treatment. Furthermore, the questionnaire results showed that most students had positive perceptions of mind mapping, reporting that it helped them generate ideas, organize their thoughts logically, and increase their confidence in writing. These findings suggest that mind mapping is an effective pre-writing strategy for enhancing students' idea organization in EFL writing. Therefore, integrating mind mapping into writing instruction is recommended to support

students in planning and structuring their ideas before drafting.

Keywords: EFL students, idea organization, mind mapping, pre-writing strategy, writing skill

INTRODUCTION

Writing is widely considered one of the most complex language skills because it requires learners to generate ideas, organize them logically, and express them clearly in written form. In English as a Foreign Language (EFL) contexts, students often face multiple challenges when learning to write, including difficulties in vocabulary, grammar, and organization of ideas. According to Ken Hyland, writing is not only a linguistic activity but also a cognitive and social process that involves planning, drafting, and revising ideas (Hyland, 2019).

The process of writing involves several stages, including planning, drafting, and revising. During the planning stage, learners need strategies that help them generate and organize ideas effectively. Flower and Hayes (1981) explain that writing is a complex cognitive process in which writers continuously plan and organize their thoughts while composing a text. Without proper planning strategies, students may struggle to produce coherent and well-structured writing.

Many EFL students experience difficulties in organizing ideas when writing. Their writing often lacks clear topic sentences, logical development of ideas, and coherence between sentences and paragraphs. These problems frequently result in texts that are difficult to understand. Therefore, effective instructional strategies are needed to help students organize their ideas before writing.

One strategy that can support students during the planning stage of writing is mind mapping. Mind mapping is a visual thinking technique that allows learners to organize ideas in the form of diagrams that illustrate relationships between concepts. The technique was popularized by Tony Buzan, who argued that mind mapping helps individuals generate ideas and visualize connections between concepts (Buzan, 2018). In educational settings, mind mapping has been widely used as a pre-writing strategy. It allows students to brainstorm ideas and organize them logically before composing a text. Several studies have reported that mind mapping can improve students' writing performance by helping them structure ideas more effectively. For instance, Bukhari (2016) found that mind mapping significantly improved students' writing ability by helping them organize their thoughts before writing.

Similarly, research in EFL classrooms suggests that mind mapping can enhance students' ability to generate ideas, develop paragraphs, and maintain coherence in their writing (Fiktorius et al., 2013). By visually mapping their ideas,

students can better understand the relationships between concepts and create more organized written texts. Recent studies also confirm that visual planning strategies such as mind mapping can significantly improve students' writing organization and idea development in EFL classrooms (Al-Jarf, 2021; Fitria, 2022; Rahman & Hasan, 2023).

Although several studies have reported the effectiveness of mind mapping in improving students' writing ability, many of these. Although previous studies have reported the benefits of mind mapping in improving students' writing ability, many of these studies focus on overall writing performance rather than specific writing components such as idea organization. In EFL contexts, difficulties in organizing ideas remain one of the major problems faced by students when composing written texts. Therefore, examining how mind mapping specifically influences students' ability to organize ideas in writing is important to better understand its pedagogical effectiveness. This study aims to investigate the effectiveness of mind mapping as a pre-writing strategy to improve students' idea organization in writing.

LITERATURE REVIEW

Mind mapping, popularized by Tony Buzan (2018), is a visual technique used to generate, connect, and organize ideas. In EFL writing, it serves as a "visual scaffold" that helps students externalize their thoughts before engaging in the linguistically demanding task of drafting (Graham & Rijlaarsdam, 2023).

Recent studies have highlighted the benefits of visual organizers. Laila et al. (2023) found that mind mapping significantly enhances student engagement, while Yarmi et al. (2025) demonstrated that digital mind mapping improves narrative performance. Theoretically, mind mapping reduces the cognitive load by allowing students to focus on "what to say" before "how to say it" (Sari & Sukirlan, 2022). This study builds upon these theories by specifically measuring improvements in four aspects: clarity of main ideas, logical sequencing, coherence, and relevance of details.

METHOD

This study employed a quasi-experimental design using a one-group pretest–posttest model. The design was chosen to examine the effectiveness of mind mapping as a pre-writing strategy in improving students' idea organization in writing. The participants of this study were 27 Grade 10 students of SMK Telkom 2 Medan in the 2025/2026 academic year. The participants were selected through purposive sampling because they were enrolled in an English writing course where the

implementation of mind mapping was feasible. The treatment was conducted over four weeks consisting of eight instructional sessions.

The research procedure consisted of three main stages: pretest, treatment, and posttest. In the pretest part, students were asked to write a short paragraph based on a given topic. The purpose of the pretest was to measure students' initial ability in organizing ideas in writing. Then, during the treatment stage, students were introduced to the concept of mind mapping and trained to use it as a pre-writing strategy. The teacher demonstrated how to create a mind map by identifying the main topic, generating supporting ideas, and organizing them into a visual structure. Students then practiced developing their own mind maps before writing paragraphs. After the treatment period, students were asked to complete another writing task similar to the pretest. The posttest aimed to measure the improvement in students' idea organization after using mind mapping.

The main instrument used in this study was a writing test assessed using an analytic rubric focusing on idea organization. The rubric evaluated four aspects: clarity of main ideas, logical sequencing of ideas, coherence between sentences and paragraphs, relevance of supporting details

In addition, a student perception questionnaire was administered to collect students' opinions regarding the use of mind mapping in writing activities. The questionnaire consisted of Likert-scale items and several open-ended questions. The data from the writing tests were analyzed using descriptive statistics and a paired-sample t-test to determine whether there was a statistically significant difference between the pretest and posttest scores. The questionnaire data were analyzed descriptively to summarize students' perceptions of the use of mind mapping in writing instruction.

FINDING

The findings of this study indicated a significant improvement in students' ability to organize ideas after the implementation of mind mapping as a pre-writing strategy. The quantitative data were obtained from the pretest and posttest scores administered to the students.

Table 1. Paired Sample T-Test Results

N	Mean Pretest	Mean Posttest	T-Value	T-Table	Signif.
27	64.33	77.93	18.27	2.056	p < .05

The results indicate that the mean score increased from 64.33 in the pretest to 77.93 in the posttest, showing an improvement of 13.60 points. The paired-sample t-

test revealed that the difference was statistically significant ($t = 18.27, p < .001$). The effect size analysis using Cohen's d indicated a large effect ($d = 1.42$), suggesting that mind mapping had a strong impact on students' idea organization in writing.

To determine whether the improvement was statistically significant, a paired-sample t -test was conducted. The result of the analysis showed that the t -value was 18.27, which was higher than the t -table value of 2.056 at the significance level of 0.05. Since the calculated t -value exceeded the critical value, the null hypothesis (H_0) was rejected and the alternative hypothesis (H_1) was accepted. This means that the use of mind mapping had a statistically significant effect on students' idea organization in writing.

The improvement was also reflected in several aspects of students' writing performance. After using mind mapping, students were able to produce clearer topic sentences, develop more relevant supporting ideas, and arrange their paragraphs in a more logical and coherent sequence. The visual structure of mind mapping helped students identify the main idea and organize supporting points before starting to write.

In addition to the test results, the questionnaire data also provided insight into students' perceptions of the use of mind mapping in the writing process. The results showed that the majority of students responded positively to this strategy. Approximately 85% of students agreed that mind mapping helped them generate ideas more easily, while 88% of the students stated that mind mapping improved the organization of their writing. Furthermore, 82% of the students reported feeling more confident when starting to write after creating a mind map.

These findings indicate that mind mapping not only improved students' writing performance but also positively influenced their attitudes toward the writing process.

Table 2. Interview Results of Students' Perceptions on Mind Mapping

No	Participant	Interview Questions	Students' Responses
1	Student 1 (High-achieving student)	Did you find it difficult to organize ideas before using mind mapping?	Yes, sometimes I had many ideas but I did not know how to organize them in a paragraph.
		How did mind mapping help you in writing?	Mind mapping helped me see the main idea and supporting ideas clearly. It made my paragraph more

			structured.
		Did your writing improve after using mind mapping?	Yes, my writing became more organized and easier to understand.
		What do you think about using mind mapping in writing class?	I think it is very useful because it helps me plan my writing before I start.
2	Student (Average student)	2 Did you experience difficulties when writing before using mind mapping?	Yes, I often felt confused about what to write after the first sentence.
		How did mind mapping help you generate ideas?	Mind mapping helped me write all my ideas first and then arrange them into a clear order.
		Did it make writing easier for you?	Yes, it made writing easier because I already had a plan before writing.
		How did you feel when using mind mapping?	I felt more confident because I knew what I wanted to write.
3	Student (Average student)	3 What problems did you face when writing before using mind mapping?	My ideas were not connected and sometimes my paragraph became unclear.
		What changes did you notice after using mind mapping?	My ideas became more organized and I could connect my sentences better.
		Did mind mapping help you start writing faster?	Yes, because I already had the ideas written in the mind map.
		Do you like using mind mapping?	Yes, because it helps me understand how to organize ideas.
4	Student 4 (Low-achieving student)	Was writing difficult for you before learning mind mapping?	Yes, it was difficult because I did not know how to start writing.

		What did you do first when using mind mapping?	I wrote the topic in the middle and then added simple ideas around it.
		Did it help you organize your ideas?	Yes, it helped me think about what to write step by step.
		How do you feel about using mind mapping in writing class?	I think it is helpful and makes writing less confusing.
5	Student 5 (Low-average student)	Did mind mapping help you generate ideas?	Yes, it helped me think of more ideas before writing the paragraph.
		Did your paragraph become clearer after using mind mapping?	Yes, my paragraph became more organized and easier to understand.
		Did mind mapping make writing more interesting?	Yes, because it is like drawing ideas and connecting them.
		Would you like to use mind mapping again in the future?	Yes, because it helps me write better.

The interview results indicated that most students had positive perceptions toward the use of mind mapping in writing activities. Students reported that mind mapping helped them generate ideas, organize their thoughts, and develop clearer paragraphs. High-achieving students stated that mind mapping helped them structure supporting ideas more effectively, while average and low-achieving students mentioned that the strategy helped them start writing more easily and reduced confusion during the writing process. These findings suggest that mind mapping supports students with different levels of writing ability.

DISCUSSION

The results of this study demonstrate that mind mapping is an effective strategy for improving students' idea organization in writing. The significant increase in the posttest scores indicates that students benefited from using a visual planning technique before starting the drafting process. This finding is consistent with previous studies which reported that mind mapping improves students' ability to organize ideas in writing.

One possible explanation for this improvement is that mind mapping helps students externalize their thoughts and organize them visually. Many students often

struggle with writing because they attempt to generate and organize ideas simultaneously. Mind mapping reduces this difficulty by allowing students to brainstorm ideas first and then arrange them into a clear structure before composing their paragraphs.

The findings also highlight the importance of pre-writing activities in the writing process. Writing is not only about producing sentences but also about planning, organizing, and structuring ideas logically. Through mind mapping, students can identify the main idea, categorize supporting details, and visualize the relationships between different ideas. As a result, their paragraphs become more coherent and easier to understand. Mind mapping helps learners visualize the relationships between ideas and organize them into a logical structure. This finding supports the argument proposed by Steve Graham that effective writing instruction should include strategies that guide students through the planning stage of writing (Graham, 2019).

Furthermore, the results are consistent with previous studies which suggest that visual organizers are effective tools for improving writing skills in EFL contexts. The use of mind mapping aligns with the writing process theory proposed by Flower and Hayes (1981), which emphasizes the importance of planning in writing. By using mind maps, students can explore ideas and organize them before transforming them into written texts. Visual representations help learners understand abstract relationships between ideas and facilitate the development of more structured written texts. When students can see the connection between ideas clearly, they are more likely to produce well-organized paragraphs.

Another important finding of this study is the positive perception of students toward mind mapping. The majority of students reported that mind mapping helped them generate ideas more easily and made the writing process less confusing. This suggests that mind mapping can also contribute to improving students' confidence and motivation in writing. When students begin writing with a clear plan, they feel more prepared and less anxious about developing their ideas.

Overall, the findings of this study indicate that mind mapping can be an effective instructional strategy for improving students' writing organization. By integrating mind mapping into the pre-writing stage, teachers can help students develop clearer ideas, produce more coherent paragraphs, and approach writing tasks with greater confidence.

CONCLUSION

This study aimed to investigate the effectiveness of mind mapping as a pre-writing strategy in improving students' idea organization in writing. The findings indicate that mind mapping significantly improved students' writing performance, as reflected in the increase in posttest scores. Furthermore, students expressed positive perceptions toward the use of mind mapping, stating that it helped them generate ideas, organize their thoughts, and plan their writing more effectively. Based on these findings, it is recommended that English teachers integrate mind mapping into writing instruction as a strategy to support students in the planning stage of writing. Future studies may involve larger samples and experimental control groups to further examine the effectiveness of mind mapping in different educational contexts.

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