

IMPROVING EIGHTH GRADE STUDENTS' RECOUNT WRITING ACHIEVEMENT THROUGH DIGITAL MIND MAPPING: A CLASSROOM ACTION RESEARCH

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Abstract

This study aimed to investigate the effectiveness of digital mind mapping in improving students' writing achievement in recount texts. The study employed a classroom action research design conducted in two cycles, involving 33 eighth-grade students at a junior high school in Surabaya. Data were collected through writing tests, observation, interviews, and questionnaires. Quantitative data were analyzed using descriptive statistics, while qualitative data were analyzed through data reduction, display, and conclusion drawing. The findings indicated a significant improvement in students' writing achievement. The percentage of students who met the minimum mastery criterion increased from 24% in the pre-test to 80% in Post-test I and 90% in Post-test II. In addition, students demonstrated increased motivation and active participation during the learning process. The use of digital mind mapping facilitated students in organizing ideas, developing coherence, and expressing their thoughts more effectively. Therefore, digital mind mapping can be considered an effective instructional strategy to enhance students' writing performance in recount texts.

Key words- writing achievement, recount text, digital mind mapping, classroom action research

Introduction

In the post-pandemic era, the integration of technology into educational practices has become increasingly significant. The rapid development of digital technology has transformed the way teaching and learning processes are designed and implemented. In line with the demands of 21st-century education, teachers are required to integrate technological, pedagogical, and content knowledge (TPACK) in order to create meaningful and effective learning experiences. This integration is essential for fostering students' critical thinking, creativity, communication, and collaboration skills, which are considered crucial competencies in modern education (Hashim, 2018; Islam Sarker et al., 2019). In the context of English language teaching, technology-enhanced instruction plays an important role in facilitating student engagement and improving learning outcomes, particularly in developing productive language skills such as writing.

Writing is widely recognized as one of the most complex and demanding language skills for learners. Unlike receptive skills, writing requires students to actively construct meaning by integrating multiple linguistic components, including vocabulary, grammar, organization, and coherence. The process of writing involves generating ideas, organizing them logically, and expressing them in a clear and accurate manner. Due to this complexity, many students encounter significant difficulties in writing. Previous studies have consistently reported that students struggle with limited vocabulary, lack of grammatical competence, and low confidence in expressing their ideas (Yulianti, 2018). Furthermore, Pablo and Lasaten (2018) highlighted that students often face challenges in generating ideas, selecting appropriate words, and constructing well-structured sentences. Similarly, Habibi et al. (2017) found that issues related to idea organization, sequencing, and grammatical

accuracy are among the most prominent obstacles in students' writing development.

In the Indonesian junior high school curriculum, students are expected to master various text genres, including recount texts. Recount texts are designed to retell past events in a chronological sequence and typically consist of three main components: orientation, events, and reorientation (Hudaya, 2018; Saepuloh & Salsabila, 2020). To produce an effective recount text, students must not only understand its generic structure but also be able to organize ideas logically and use appropriate language features, such as past tense forms. However, in practice, many students still experience difficulties in constructing coherent recount texts. They often produce fragmented ideas, lack clear organization, and make frequent grammatical errors. These challenges indicate that students need additional support, particularly in the pre-writing stage, to help them generate and organize their ideas more effectively.

Based on a preliminary study conducted in one of the eighth-grade classes at SMP Negeri 22 Surabaya, several issues related to students' writing ability were identified. Classroom observations revealed that the teaching and learning process was still predominantly teacher-centered, with limited opportunities for students to actively participate. Students tended to rely heavily on teacher explanations and showed low engagement during writing activities. When asked to write recount texts, many students experienced difficulties in starting their writing, as they struggled to generate and organize ideas. As a result, they often spent a considerable amount of time thinking without producing meaningful written output.

The results of the preliminary writing test further confirmed these issues. Only a small proportion of students were able to achieve the minimum mastery criterion (KKM), while the majority performed below the

expected standard. Students' writing was generally characterized by limited content development, weak organization, inappropriate vocabulary use, and frequent grammatical errors. In addition, interviews with students revealed that they perceived writing as a difficult and less enjoyable activity compared to other language skills. Many students expressed a lack of confidence in their ability to write in English, which further hindered their performance. These findings highlight the urgent need for an instructional strategy that can assist students in organizing their ideas and make the writing process more accessible and engaging.

One potential strategy to address these challenges is the use of mind mapping as a pre-writing technique. Mind mapping is a visual representation technique that enables learners to organize their ideas by connecting keywords and concepts in a structured and meaningful way (Yunus et al., 2018). As a pre-writing strategy, mind mapping helps students brainstorm ideas, identify relationships between concepts, and create a clear outline before developing their writing. This process can reduce students' cognitive load during writing and support them in producing more coherent and structured texts. In addition, mind mapping encourages students to think creatively and critically, as they actively construct connections between ideas.

With the advancement of technology, mind mapping has evolved into digital formats, offering additional advantages over traditional paper-based approaches. Digital mind mapping tools allow students to create, modify, and reorganize their ideas more efficiently through interactive features. Unlike conventional mind mapping, digital tools provide flexibility in editing, enabling students to revise their ideas without rewriting the entire structure. Moreover, digital mind mapping allows the integration of visual elements such as colors, images, and symbols, which can

enhance students' engagement and understanding (Zeraatpisheh et al., 2020). These features make digital mind mapping a more dynamic and student-centered learning tool.

Furthermore, digital learning environments have been shown to promote student engagement and collaboration. According to Beaunoyer et al. (2020), digital tools provide opportunities for students to interact, share ideas, and learn collaboratively in more flexible ways. In this context, digital mind mapping not only supports individual learning but also facilitates collaborative learning, where students can exchange ideas and construct knowledge together. This collaborative aspect is particularly beneficial in improving students' writing skills, as it allows them to receive feedback and refine their ideas through discussion.

In this study, the researcher utilized Canva as a digital mind mapping tool to support students' writing process. Canva is a widely accessible and user-friendly application that provides various templates and design features for creating visual content, including mind maps. The use of Canva enables students to organize their ideas in a visually appealing and structured manner, which can enhance both their motivation and creativity. By integrating Canva into the writing process, students are expected to become more engaged and confident in developing their ideas into written texts.

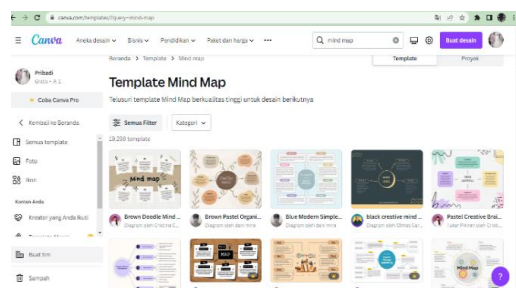


Figure 1. Canva interface screenshot

Figure 1 presents an example of the Canva interface used as a digital mind mapping tool in this study. Meanwhile, the following, figure 2 illustrates a sample of a digital mind mapping template used by students to organize their ideas before writing.

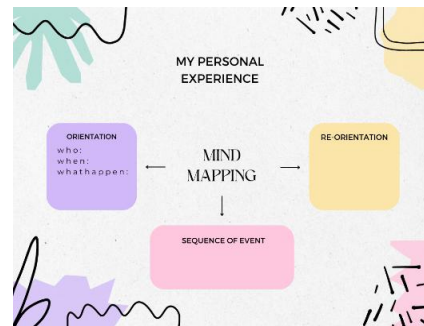


Figure 2. Digital mind-mapping examples

Several previous studies have highlighted the effectiveness of mind mapping in improving writing skills. Karim and Mustapha (2020) found that digital mind mapping enhances students' creativity and critical thinking in writing tasks. Similarly, Sudibyo (2022) reported that the use of digital mind mapping significantly improves students' ability in writing descriptive paragraphs. Lisan (2022) also demonstrated that mind mapping contributes to students' improvement in writing descriptive texts. Despite these findings, most previous studies have focused on descriptive writing or different educational contexts, with limited attention given to the use of digital mind mapping in teaching recount texts at the junior high school level.

Therefore, this study aims to fill this gap by investigating the implementation of digital mind mapping in improving students' writing achievement in recount texts. Specifically, this study seeks to answer the following research question: To what extent can digital mind mapping improve students' writing achievement in recount texts.

Method

This study employed a Classroom Action Research (CAR) design aimed at improving students' writing achievement through the implementation of digital mind mapping as a pre-writing strategy. Classroom Action Research was considered appropriate for this study as it focuses on solving practical problems in the classroom and improving the quality of the teaching and learning process through systematic and reflective actions. The research adopted the cyclical model proposed by Stephen Kemmis and Robin McTaggart (1988), which consists of four stages: planning, acting, observing, and reflecting. These stages were implemented in two cycles, following an initial pre-cycle stage, in order to evaluate and refine the instructional strategy progressively.

The research was conducted in one of the junior high schools in Surabaya, specifically in class VIII I, involving 33 students as the research participants. The selection of the participants was based on preliminary observation, which indicated that students experienced difficulties in writing, particularly in generating ideas, organizing content, and expressing their thoughts in recount texts. Prior to the intervention, the researcher conducted a pre-cycle stage to identify the existing classroom conditions and students' baseline writing ability. The findings from this stage revealed that the teaching and learning process was still predominantly teacher-centered, with students showing low participation and relying heavily on the teacher's explanation. When students were asked to write about their personal experiences, many of them encountered difficulties in starting their writing, organizing ideas, and developing coherent paragraphs. As a result, the students required a considerable amount of time to complete their writing tasks, and the overall quality of their writing was relatively low.

The procedure of the study consisted of three main stages, namely pre-cycle, Cycle I, and Cycle II. In the pre-cycle stage, a writing test was administered to measure students' initial ability in writing recount texts. The results of the pre-test indicated that only a small number of students were able to achieve the minimum mastery criterion (KKM), while the majority performed below the expected standard. These findings confirmed the need for an appropriate instructional strategy to improve students' writing performance. In Cycle I, the researcher began with the planning stage by preparing lesson plans, teaching materials, and learning activities integrating digital mind mapping using Canva as the instructional media. During the acting stage, the researcher implemented the planned lessons by introducing digital mind mapping as a pre-writing technique. Students were instructed to create individual digital mind maps using their laptops or smartphones before developing their recount texts. The digital mind mapping activity allowed students to organize their ideas by identifying key points, arranging events chronologically, and connecting related concepts. During the observing stage, the researcher, together with the collaborator (the English teacher), observed students' participation, engagement, and difficulties during the learning process. The observation revealed that students showed increased interest and enthusiasm, although some of them still experienced difficulties in using the application and elaborating their ideas into complete sentences. In the reflecting stage, the researcher evaluated the results of Cycle I and identified several aspects that needed improvement, including providing clearer instructions and facilitating more interaction among students.

Based on the reflection of Cycle I, Cycle II was conducted with several improvements in the instructional process. In the planning stage, the researcher revised the lesson plans by incorporating collaborative

learning activities and providing more structured guidance in using digital mind mapping. During the acting stage, students were grouped and asked to work collaboratively in creating digital mind maps. This group work allowed students to share ideas, discuss the sequence of events, and support each other in organizing their writing. The use of collaborative digital mind mapping helped students generate richer ideas and develop more coherent texts. In the observing stage, it was found that students demonstrated higher levels of participation, engagement, and confidence compared to the previous cycle. They were more actively involved in discussions and were able to complete their writing tasks more efficiently. In the reflecting stage, the results indicated a significant improvement in students' writing achievement as well as their motivation and participation in the learning process, suggesting that the implemented strategy was effective.

Data in this study were collected through multiple instruments, including observation, interviews, questionnaires, and writing tests, as stated in the original research design. Writing tests were administered at three stages, namely pre-test, Post-test I, and Post-test II, to measure students' progress in writing recount texts. The writing tasks required students to produce a paragraph based on a given topic within 60 minutes, consisting of 20 minutes for creating a digital mind map and 40 minutes for writing the paragraph. The students' writing was assessed using a scoring rubric adapted from Brown (as cited in Sairo et al., 2021), which includes five aspects: content, organization, grammar, vocabulary, and mechanics. Observation sheets were used to record students' behavior, participation, and engagement during the learning activities. Interviews were conducted to explore students' perceptions and difficulties in writing, while questionnaires were distributed at the end of the study to gather

students' responses toward the implementation of digital mind mapping.

The data obtained from the study were categorized into quantitative and qualitative data. Quantitative data were derived from students' writing test scores, while qualitative data were obtained from observations, interviews, and questionnaires. Quantitative data were analyzed using descriptive statistics to determine the percentage of students achieving the minimum mastery criterion (KKM). The percentage was calculated by comparing the number of students who achieved the criterion with the total number of students in the class. The improvement of students' writing achievement was measured by comparing the results of the pre-test, Post-test I, and Post-test II. Meanwhile, qualitative data were analyzed through a process of data reduction, data display, and conclusion drawing. This analysis aimed to provide a deeper understanding of students' learning experiences, participation, and responses to the use of digital mind mapping. By combining quantitative and qualitative data analysis, this study was able to comprehensively evaluate both the effectiveness of the instructional strategy and its impact on students' engagement in the learning process.

The technique used to analyze the data is descriptive qualitative and quantitative analysis. This test is in the form of a post-test where students will be given a test at the end of the cycle, which requires students to write paragraphs based on the given topic. The time for this test is 60 minutes (20 minutes to use a digital mind map and 40 minutes to complete a paragraph). During the allotted time, they were asked to express their ideas in technology related text recount. The test results are then assessed according to the categories and criteria in the scoring rubric. In the assessment rubric, the writing assessment rubric used by the author is

from (Brown in Sairo. et. al, 2021). This rubric consists of 5 points; content, organization, grammar, vocabulary, mechanics.

Criteria of scoring

No.	Aspect	Score	Criteria	Max score
1.	Content	30 – 27	Present the information well chosen details across the paragraph	30
		26 – 22	Present the information with details in part of the paragraph	
		21 – 18	Present the information with some details	
		17 – 13	Present no clear informations	
2.	Organization	20 – 18	Orientation, sequents of event and re-orientation are arranged with proper connectives	20
		17 – 14	Orientation, sequents of event and re-orientation are arranged with almost proper connectives	
		13 – 10	Orientation, sequents of event and re-orientation are arranged with few misuse of connectives	
		09 – 07	Orientation, sequents of event and re-orientation are arranged with misuse of connectives	
3.	Vocabulary	20 – 18	Good in vocabulary choice	20
		17 – 14	Few misuse of vocabularies, word forms, but not change the meaning	
		13 – 10	Limited range confusing words and word forms	
		09 – 07	Very poor knowledge of words, word forms and not understandable	
4.	Grammar	25 – 22	Very few grammatical or agreement inaccuracies	25
		21 – 19	Few grammatical or agreement inaccuracies but not affect on meaning	
		18 – 11	Numerous grammatical or agreement inaccuracies	
		10 – 09	Frequent grammatical or agreement inaccuracies	
5.	Mechanics	5	It uses correct spelling, punctuation, and capitalization	5
		4	It has occasional errors of spelling, punctuation, and capitalization	
		3	It has frequent errors of spelling, punctuation, and capitalization	
		2	It dominated by errors of spelling, punctuation, and capitalization	

Figure 3. Scoring table Brown in Sairo. et. al, 2021

Result and Discussion

Result

The findings of this study indicate a significant improvement in students' writing achievement across the research cycles. The improvement can be seen from the results of the pre-test, Post-test I, and Post-test II.

Table 1. Table of Data of Group Statistics

Group Statistics					
	Label	N	Mean	Std. Deviation	Std. Error Mean
Content	Pre test	33	18,30	,883	,154
	Post test 2	33	26,30	1,510	,263
Organization	Pre test	33	17,09	,723	,126
	Post test 2	33	17,18	,584	,102
Vocabulary	Pre test	33	17,94	,998	,174
	Post test 2	33	18,12	,696	,121
Grammar	Pre test	33	17,94	1,456	,254
	Post test 2	33	20,67	,890	,155
Mechanics	Pre test	33	3,24	,435	,076
	Post test 2	33	3,24	,435	,076

The mean score increased significantly from 18.30 (pre-test) to 26.30 (post-test). This indicates a substantial improvement ($\approx +8.00$ points) in students' ability to develop ideas and elaborate content in recount text. The standard deviation also increased from 0.883 to 1.510, suggesting that although students improved, there was slightly more variation in their post-test performance.

Students became much better at generating and developing ideas, which is strongly influenced by the use of digital mind mapping as a brainstorming tool. Furthermore, the mean score of organization shows a very slight increase from 17.09 to 17.18 (+0.09), indicating minimal improvement. The standard deviation decreased from 0.723 to 0.584, meaning students' scores became more consistent. There is no significant improvement in organization. This suggests that students may still struggle with structuring ideas logically, even though digital mind mapping was used. The mean score of vocabulary increased slightly from 17.94 to 18.12 (+0.18), indicating minor improvement. The standard deviation decreased from 0.998 to 0.696, showing more consistent vocabulary usage among students. Digital mind mapping had a limited effect on vocabulary development, as vocabulary acquisition usually requires longer exposure and practice.

The mean score of grammar increased from 17.94 to 20.67, showing a moderate improvement (+2.73 points). The standard deviation decreased from 1.456 to 0.890, indicating more consistent grammar performance after treatment. Students improved their grammatical accuracy, possibly because better idea organization (through mind mapping) helped them construct clearer sentences. Moreover, the mean score of mechanics remained the same at 3.24, with identical standard deviation (0.435). There is no improvement in mechanics (punctuation, spelling, capitalization). This suggests that digital mind mapping does not directly influence this aspect of writing.

In conclusion, the descriptive statistics reveal that students' writing performance improved after the implementation of digital mind mapping, particularly in the content and grammar aspects. The mean score for content increased substantially, indicating that students were better able to

generate and develop ideas in their writing. Grammar also showed moderate improvement, suggesting enhanced sentence construction. However, only slight. These findings indicate that digital mind mapping is more effective in supporting higher-level cognitive processes, such as idea development, than lower-level writing skills, such as mechanics.

Table 2. Table of Students Passing KKM

Test	Students Passing KKM	Percentage
Pre-test	8	24%
Post-test I	27	80%
Post-test II	30	90%

The data show that only **24% of students** achieved the minimum mastery criterion in the pre-test. After the implementation of digital mind mapping in Cycle I, the percentage increased significantly to **80%**. In Cycle II, the percentage further increased to **90%**, indicating substantial improvement in students' writing achievement.

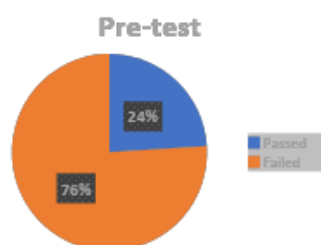


Figure 4. The pie diagram result of pre-test

In cycle one, the use of digital mind-mapping was applied for the class, when their enthusiasm was excellent because it was related to technology, where they preferred learning by using technology, they were allowed to use a laptop or smartphone. They even needed more time because it was their first experience using an application to make a mind-map. In this cycle they made digital mind-mapping individual tasks. So, they did it by themselves. If they found the difficulties

improvements were observed in organization and vocabulary, while no improvement was found in mechanics.

with the steps, they could ask the teacher to help them. After conducting cycle I, the students showed some improvements. It can be seen that after implementing digital mind-mapping, the students showed their interest in following the lesson well. They also could focus on the lesson without feeling bored or sleepy. In terms of ability, the students also made some improvements. The results of this study can be seen in the following diagram.

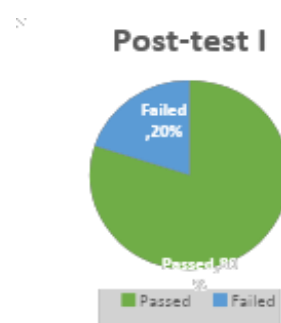


Figure 5. The pie diagram result of post-test I

Students scored higher on post-test 1, which was administered at this stage. Students reacted by paying the teacher greater attention and by raising questions about concepts they were unfamiliar with. Twenty-seven students passed the Minimum Standard of Mastery Learning on Post-Test I, and the class percentage rose to 80%.

After conducting Cycle II which was done based on the problems found in Cycle I, the students showed some improvements. Dealing with students' ability in writing recount texts, the students were able to generate, develop and organize a text well. The students were also able to use correct and appropriate words. They also were able to use the simple present tense. Then, they were able to use punctuation and capitalization appropriately. Dealing with students' motivation, they got enthusiastic to write recount texts using digital mind-

mapping so that they could follow and focus on the lesson well. In this cycle they made digital mind-mapping in a group. So, they did it together while discussing what would be written on their recount text. The second cycle showed thirty students can improve their ability to recount text. The percentage increased to 90%. The researcher showed the result in the diagram below.



Figure 6. The pie diagram result of post-test II

Implementing Digital Mind Mapping in learning to write English texts can improve the ability to write texts. The results of the writing performance test at the pre-test, at the end of the first cycle, and at the end of the second cycle. The average ability to write texts in the initial conditions or pre-test is 24%, with the number of students who complete being 8 people. At the end of the first cycle by 80% with the number of students as many as 27 who have completed, in the second cycle for the second post-test the number of students increases ten percent that is 90% or 30 students. It is applied to confirm and improve students who scored below the KKM, which amounted to 3 people. So that the second cycle experienced a good increase with the students' scores completed although there were some of the students who experienced a decrease from the first cycle but their scores in the second cycle remained above the KKM. In addition, the successful application of learning to write with Digital Mind-Mapping can also increase the percentage of completeness.

The final action that the researcher did was to give a questionnaire to students to find out their opinion after learning recount text using digital mind mapping. Students responded well to using the digital mind mapping in writing recount text. The students can write a recount text easily and enjoy expressing their ideas, and the most important is the student can organize their idea and develop it as well as by using correct grammar and correct punctuation which can attract the reader by putting the appropriate words and some expression to strengthen their writing. The chart below described their responses by answering the questionnaire.

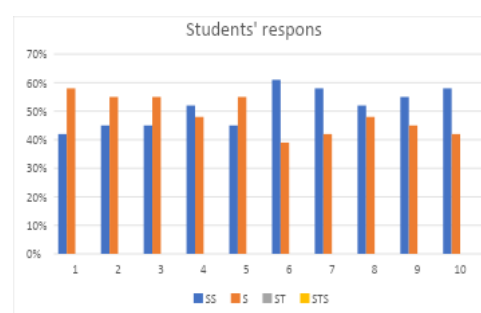


Figure 7. The diagram result of questionnaire

Based on the chart, the use of digital mind mapping to improve students' ability to write a recount text has been well implemented. It is clear from the students' response that answering the questions with the SS means totally agree and S means agree using digital mind mapping to build up ideas, keywords and others, which have improved during the teaching and learning process.

Discussion

The findings of this study demonstrate that the implementation of digital mind mapping significantly improved students' writing achievement in recount texts. This improvement is evident from the substantial increase in the percentage of students achieving the minimum mastery criterion, from 24% in the pre-test to 90% in Post-test II. This result indicates that digital mind mapping is an effective

instructional strategy, particularly in supporting students during the pre-writing stage.

One of the key factors contributing to this improvement lies in the role of digital mind mapping in facilitating idea generation and organization. Writing is a complex cognitive process that requires learners to simultaneously manage multiple components, including content development, organization, grammar, and vocabulary. As highlighted by Yulianti (2018), students often struggle with limited vocabulary and insufficient grammatical knowledge, which hinder their ability to express ideas effectively. Similarly, Pablo and Lasaten (2018) emphasized that students frequently encounter difficulties in generating ideas and constructing coherent sentences. In this study, digital mind mapping functioned as a scaffolding tool that helped students structure their thoughts before writing, thereby reducing the cognitive load associated with the writing process.

The visual and structured nature of mind mapping enabled students to organize their ideas more systematically. This finding is consistent with Yunus et al. (2018), who stated that mind mapping serves as an effective pre-writing strategy that supports brainstorming and idea organization. By using keywords, branches, and visual connections, students were able to develop a clear outline of their recount texts, which contributed to improved coherence and organization in their writing. Furthermore, the use of digital mind mapping allowed students to revise and reorganize their ideas easily, which is not always possible in traditional paper-based methods.

In addition to improving the organization of ideas, the use of digital mind mapping also contributed to improvements in other aspects of writing, including grammar, vocabulary, and mechanics. As students constructed their mind maps, they became

more aware of appropriate word choices and sentence structures, which helped them produce more accurate and meaningful texts. This finding supports the argument of Habibi et al. (2017), who identified that problems in writing often stem from difficulties in organizing ideas and selecting appropriate linguistic forms. By guiding students through a structured pre-writing process, digital mind mapping helped address these issues more effectively.

Another important finding of this study is the positive impact of digital mind mapping on students' motivation and engagement. The integration of technology in the learning process created a more interactive and enjoyable learning environment, which encouraged students to participate more actively. This finding aligns with Hashim (2018) and Islam Sarker et al. (2019), who argued that the use of digital technology in education can enhance students' engagement and learning outcomes. In this study, students showed greater enthusiasm when using digital tools such as Canva, as it allowed them to express their ideas creatively through visual elements such as colors, images, and layouts.

Moreover, the collaborative activities implemented in Cycle II played a significant role in enhancing students' learning experience. When students worked in groups to create digital mind maps, they were able to exchange ideas, provide feedback, and support each other in the writing process. This collaborative learning environment contributed to a deeper understanding of the writing task and helped students overcome their difficulties. The findings are in line with Lukas and Yunus (2021), who noted that digital learning environments can accommodate diverse learning styles and promote interaction among students.

The results of this study are also consistent with previous research on the effectiveness

of digital mind mapping in writing instruction. Karim and Mustapha (2020) found that digital mind mapping enhances students' creativity and critical thinking in writing tasks, as it encourages them to explore and connect ideas more deeply. Similarly, Sudibyo (2022) reported that digital mind mapping significantly improves students' ability to write descriptive paragraphs, while Lisan (2022) demonstrated its effectiveness in improving students' descriptive writing skills. This study extends these findings by showing that digital mind mapping is also effective in improving students' ability to write recount texts at the junior high school level.

In addition, the use of digital mind mapping reflects the principles of technology-integrated learning, where digital tools are used not merely as supplementary media but as integral components of the learning process. As suggested by Islam Sarker et al. (2019), the integration of digital technology in education can transform traditional learning environments into more dynamic and student-centered ones. In this study, digital mind mapping shifted the learning process from a teacher-centered approach to a more student-centered approach, where students actively constructed their knowledge through exploration and interaction.

Despite the positive findings, it is important to note that some challenges were encountered during the implementation of digital mind mapping, particularly in the initial stage. Some students experienced difficulties in using the digital application and required additional guidance from the teacher. This finding is consistent with Lukas and Yunus (2021), who reported that the implementation of digital tools in education may present challenges due to differences in students' digital literacy and learning preferences. However, these challenges were gradually overcome through practice and collaborative learning, as reflected in the improved outcomes in Cycle II.

Overall, the findings of this study suggest that digital mind mapping is not only effective in improving students' writing achievement but also in enhancing their motivation, engagement, and collaborative learning. The integration of visual and digital elements in the pre-writing stage provides meaningful support for students in organizing their ideas and developing their writing. Therefore, digital mind mapping can be considered a valuable instructional strategy in teaching writing, particularly in the context of EFL learning at the junior high school level.

Conclusion

This study aimed to investigate the effectiveness of digital mind mapping in improving students' writing achievement in recount texts. The findings revealed that the implementation of digital mind mapping significantly enhanced students' writing performance. This improvement was clearly indicated by the increase in the percentage of students achieving the minimum mastery criterion, from 24% in the pre-test to 80% in Post-test I and 90% in Post-test II. These results confirm that digital mind mapping is an effective strategy for supporting students in the writing process, particularly at the pre-writing stage.

The use of digital mind mapping enabled students to generate and organize ideas more effectively, resulting in more coherent and structured writing. Improvements were observed across key aspects of writing, including content development, organization, grammar, vocabulary, and mechanics. By providing a visual framework for idea organization, digital mind mapping helped reduce students' difficulties in expressing their thoughts and constructing meaningful texts.

In addition to improving writing achievement, the implementation of digital mind mapping also contributed positively

to students' motivation and engagement. The integration of digital tools such as Canva created a more interactive and enjoyable learning environment, encouraging students to participate actively and confidently in writing activities. Furthermore, the use of collaborative learning in the second cycle allowed students to share ideas and support each other, which further enhanced their learning outcomes.

From a pedagogical perspective, this study suggests that digital mind mapping can be effectively integrated into writing instruction to facilitate students' idea development and organization. English teachers are therefore encouraged to adopt digital mind mapping as an alternative strategy to improve students' writing skills, particularly in teaching text-based genres such as recount texts.

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- However, this study is limited to a single class in one junior high school, which may restrict the generalizability of the findings. Future research is recommended to explore the use of digital mind mapping in different educational contexts, levels of education, and types of texts. In addition, further studies may examine the long-term impact of digital mind mapping on students' writing development and digital literacy skills. In conclusion, digital mind mapping is a valuable instructional strategy that not only improves students' writing achievement but also enhances their motivation, engagement, and participation in the learning process, making it highly relevant for contemporary English language teaching.
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