



## Using Digital Mind Mapping to Improve Writing Skills

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### Abstrak

Masih banyak siswa yang kurang memiliki keterampilan menulis. Siswa bingung untuk memulai pembahasan atau menentukan ide dan minimnya kosa kata membuat siswa kesulitan untuk menulis. Tujuan penelitian ini yaitu untuk menganalisis penggunaan digital mind mapping untuk meningkatkan keterampilan menulis pada siswa. Jenis penelitian ini yaitu penelitian tindakan kelas yang akan dibagi kedalam dua siklus. siklus 1 dalam 3 sesi dan siklus 2 dalam 2 sesi. Subjek penelitian berjumlah 33 peserta didik. Metode yang digunakan dalam mengumpulkan data penelitian yaitu observasi, wawancara, dan tes. Instrument yang digunakan untuk mengumpulkan data yaitu kuesioner dan lembar tes. Teknik yang digunakan untuk menganalisis data yaitu analisis deskriptif kualitatif dan kuantitatif. Hasil penelitian menunjukkan bahwa Pemetaan Pikiran Digital efektif untuk meningkatkan kemampuan siswa. Ditemukan bahwa nilai rata-rata siswa dalam pra tes adalah 24% dan ini meningkat menjadi 90% pada post test I dan pada post test II mengalami peningkatan pada peserta didik yang sebelumnya tidak mencapai KKM. Peningkatan nilai rata-rata siswa juga didukung oleh minat siswa selama proses belajar mengajar karena metode menggunakan teknologi. Selain itu, para siswa menemukan bahwa kegiatan Pemetaan Pikiran Digital membantu mereka untuk mengorganisir ide siswa, menjadi berpikir kritis, kreatif dan meningkatkan tulisan siswa.

**Kata kunci:** Digital Mind Mapping, Keterampilan, Menulis

### Abstract

There are still many students who lack writing skills. Students are confused about starting a discussion or determining ideas, and the lack of vocabulary makes it difficult for students to write. This study aims to analyze the use of digital mind mapping to improve students' writing skills. This type of research is classroom action research which will be divided into two cycles. cycle 1 in 3 sessions and cycle 2 in 2 sessions. The research subjects were 33 students. The methods used in collecting research data are observation, interviews, and tests. The instruments used to collect data are questionnaires and test sheets. The technique used to analyze the data is descriptive qualitative and quantitative analysis. The results showed that Digital Mind Mapping was effective for improving students' abilities. It was found that the average score of students in the pre-test was 24%, increased to 90% in the post-test I and in the post-test II. There was an increase in the number of students who had not previously achieved the KKM. The increase in the average score of students is also supported by student interest during the teaching and learning process because the method uses technology. In addition, the students found that the Digital Mind Mapping activity helped them organize students' ideas, become critical thinking, creative and improve students' writing.

**Keywords:** Digital Mind Mapping, Skills, Writing

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## Introduction

Language is one of the essential things in human life. Language is used in social life as a tool to convey something (Chen et al., 2019; Karimi & Sanavi, 2014). Language is one of the seven elements of culture that first appeared in human culture. Communicating has two types: verbal and nonverbal communication (Harrison, 2021; Kok et al., 2021). Communicating verbally is understanding and expressing information, thoughts, feelings and developing science, technology, and culture (Simbolon, 2014). Language is used to communicate in everyday life, both in work, social life, and education (Fuad & Helminsyah, 2018; Lomotey & Csajbok-Twerefou, 2021). One of the languages taught in education is

English. English is taught to students because English is an international language needed by students (Chen et al., 2019; Tanihardjo, 2016). Currently, learning English is directed at achieving competence which is reflected in the ability of students to carry out communication steps, both orally and in writing (Atabekova et al., 2021; O'Brien et al., 2020).

One of the skills that must be mastered by students when learning English is writing. Writing is a process of conveying ideas, thoughts, and feelings through a sound or letter system that has been recognized by the language user community (Llosa & Malone, 2017; Sun et al., 2021). Writing is considered a complex skill because it involves using proper grammar, spelling, punctuation, and vocabulary to produce well-organized ideas conveyed in written form (Fleckenstein et al., 2020; Smart, 2019). It is intended so that students can express their ideas to be poured in written form. Writing skill is a productive-active language skill. Students organize ideas coherently, use appropriate and appropriate vocabulary, pay attention to correct spelling and punctuation, and use varied sentences to achieve good writing competence (Masrur et al., 2020; Su et al., 2021).

However, the problem that occurs today is that there are still many students who lack writing skills. Based on the results of observations made at SMA Negeri 1 Singaraja Bali, it was found that students have ideas to write about but do not know how to start writing. Based on the results of interviews conducted with several students, it was found that students were confused about starting a discussion or determining the idea to be written. In addition, students are embarrassed because their English is not good, and some of them feel they do not have many ideas to express because of the lack of vocabulary they have. The problems faced by students are also related to the factors of interest and enthusiasm of students in participating in learning, such as writing texts (Vassilaki, 2017; Widyaningrum & Hasanudin, 2019). Students feel bored if asked to write, and it takes quite a long time to do it so that students' ability to write is limited (Naghdipour, 2021; Szanto, 2020).

During the learning process, it was also found that the teacher used no method to make it easier for students to express ideas before writing a text, making it easier for students to express their ideas first. This learning method is essential to increase students' understanding (Gonzalves, 2021; Yuniar et al., 2019). Based on the results of the pre-test that has been carried out, it also shows that students have not met the Minimum Completeness Criteria (KKM). Many of the students have difficulty expressing their ideas in writing, namely students are asked to write report texts related to technology. The percentage value for the pre test is 24% which is obtained from the number of students who meet the KKM totaling 8 people. This indicates that students' writing skills are still low (Pradnyawathi et al., 2019; Sriani et al., 2015).

Based on this problem, one solution to improve students' writing skills is applying a Digital Mind Map. The use of the Digital Mind Mand can help students easily express ideas and write in a structured manner, and also students can develop topics in a more modern way (Kiong et al., 2012; Mardiah et al., 2019). Digital mind mapping is mind mapping. The software-based map can be used using laptops and smartphones. There are two types of mind maps, namely conventional and digital mind maps. Mind mapping or concept maps, also known as mind mapping, is one method that can help them connect and simultaneously develop their ideas (Dewi et al., 2017; Ulya et al., 2019).

Mind mapping is a creative, practical, and literal way of taking notes that will "map" the mind (Atiek et al., 2013; Rosciano, 2015). Mind mapping uses visual and sensory reminders in a pattern of related ideas, such as a roadmap for learning, organizing, and planning (Lubis et al., 2019; Polat & Aydın, 2020). So it can be concluded that mind mapping is one way to organize ideas, thoughts with creative imagination. Digital mind mapping refers to mind maps based on online and offline software or programs (Arrouays et al., 2021; Beaunoyer et al., 2020). Digital mind maps can be used via a smartphone or PC

(Personal Computer) and Laptop. In contrast to hand-drawn mind maps, which require students to erase and rewrite again and again if they make mistakes, digital mind maps only need to be dragged and dropped to move concepts and objects, which will save time (Buran & Filyukov, 2015; Zeraatpisheh et al., 2020). This study uses an application and software called Mindomo, which can be downloaded on the play store for smartphones.

The findings of previous studies stated that Mind Mapping could make it easier for students to learn (Kiong et al., 2012; Ulya et al., 2019). Other research findings also state that Mind Mapping increases students' enthusiasm for learning so that it has an impact on student learning outcomes (Atiek et al., 2013; Polat & Aydın, 2020). So it can be concluded that mind mapping can help students in learning. There is no study on the use of digital mind mapping to improve students' writing skills. This study aims to analyze the use of digital mind mapping to improve students' writing skills. It is hoped that the use of digital mind mapping can help students in learning so that they can improve students' writing skills.

## Methods

This type of research is classroom action research divided into two cycles—cycle 1 in 3 sessions and cycle 2 in 2 sessions. The subjects of this study were students of class X, amounting to 33 students. The methods used in collecting research data are observation, interviews, and tests. The instruments used to collect data are questionnaires and test sheets. The data used in this study is divided into two categories, namely quantitative data and qualitative data. Quantitative data were obtained from the written test results (post-test) at the end of the cycle. Moreover, qualitative data based on observation sheets related to students' work during the application of DMM in improving students' writing skills.

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 reports. 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, 2007). This rubric consists of 5 points; content, organization, grammar, vocabulary, mechanics.

**Table 1.** Writing Activity Assessment Instrument

Aspect	Skor	Criteria	activity
Content (C) 30% Topic Detailed	4	The entire content of the essay is in accordance with the topic and is equipped with details (details) related to the topic.	3x
	3	The entire content of the essay is in accordance with the topic, and almost all supporting sentences are related to the topic.	
	2	The entire content of the essay is in accordance with the topic, but the supporting sentences are not in accordance with the topic	
	1	The entire content of the essay is not in accordance with the topic and the supporting sentences are not related to the topic.	
Organization	4	All complete identification and descriptions are	2x

Aspect	Skor	Criteria	activity
(O) 20%		arranged with all appropriate conjunctions.	
Identification		Almost all identifications are complete, and descriptions are arranged with almost entirely correct conjunctions.	
Description	3		
	2	All identifications are incomplete and descriptions are structured with some appropriate conjunctions.	
	1	All identifications are incomplete and descriptions are structured with inappropriate conjunctions.	
Grammar (G)	4	The entire content of the essay uses the right grammatical structure	
20%	3	Almost all the contents of the essay use the right grammatical structure.	
Use Present Tense Agreement	2	Most of the contents of the essay use the right grammatical structure.	2x
	1	A small part of the content of the essay uses the right language structure (grammar).	
	4	The entire content of the essay uses the right and effective choice of words and word forms	
Vocabulary (V)	3	Almost all the contents of the essay use the right choice of words and word forms	
15%	2	Most of the contents of the essay use the right choice of words and tenses	1,5 x
	1	A small part of the content of the essay uses the right choice of words and word forms.	
	4	The entire content of the essay uses proper spelling, punctuation and capitalization.	
Mechanic (M)	3	Almost all the contents of the essay use proper spelling, punctuation and use of capital letters.	
15% Spelling Punctuation Capitalization	2	Most of the content of the essay uses proper spelling, punctuation and capitalization.	1,5x
	1	A small part of the content of the essay uses proper spelling, punctuation and capitalization.	

(Brown, 2007)

## Results and Discussion

### Result

Based on the learning that was carried out thoroughly in the first cycle of action and the second cycle of class X MIPA 1 students with the application of the Digital Mind Mapping method, there was an increase in writing a text by students using a technology-based Digital Mind Map. It was complicated for students to express their opinions in the pre-test, so they took a very long time to write. So that in cycle one, the use of Digital Mind Maps was applied for the class, when their enthusiasm was excellent because it was related to technology, where they preferred learning using technology, they were allowed to use a laptop or smartphone. The results of this study can be seen in the following Table 2.

**Table 2.** Student Assessment Results

<b>Student achievement</b>	<b>Before Action</b>	<b>Cycle 1</b>	<b>Cycle 2</b>
Pass the Minimum Completeness Criteria (KKM)	8 Students ( 24 %)	30 Students (90 %)	All students have increased

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 90% with the number of students as many as 30 who have completed, in the second cycle. 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. And the average value of the whole class got a score in the Pre Test with a value of 40.5, Post Test Cycle II 86.3, and Post Test Cycle II 90.08. Thus, this study succeeded in using Digital Mind Mapping to improve students' writing skills.

## Discussion

This method is more practical considering that today's students use technology in learning (Hashim, 2018; Islam Sarker et al., 2019). Implementing Digital Mind Mapping in learning to write English texts can improve writing texts when learning students feel enthusiastic about running smoothly. Previous research has also stated that mind mapping can increase students' enthusiasm for learning (Atiek et al., 2013; Polat & Aydın, 2020). Using digital mind mapping, students only need to click on some of the icons provided or press some of the buttons provided. Everything is backed up by simple information about what will happen after selecting an icon, button, or menu. This computer and mobile-based mind map also allow users to export their mind map products in various formats (web pages, as images, documents, PDFs, and PowerPoint). It makes it easier for students to learn (Abrams & Byrd, 2016; Polat & Aydın, 2020).

Digital mind maps are supported by the best application visuals, good looks, and advanced features. It allows users to add various types of information such as animated images, videos, hyperlinks to websites, icons, and files, which help them attractively convey their ideas and become a stimulus to generate more ideas (Bystrova & Larionova, 2015; Wu & Chen, 2018). Whether we realize it, this will automatically motivate students to write more and develop creative and critical thinking. Media is a means that will convey information to students so that students easily understand the subject matter (Buran & Filyukov, 2015; Fu et al., 2019). The use of appropriate learning media for students will make it easier to learn (Fun & Maskat, 2010; Sulfemi & Desmiati, 2018).

In addition, digital mind maps have proven to be an effective pre-writing tool to improve students' writing competence (Nazri, Yunus & Shukor, 2016; Salasiah, 2016; Al-Jarf, 2009; Ma & Shi, 2016; Saed & Al-Omari, 2014; Karim, Abu & Khaja, 2016; Yen & Yang, 2016). These researchers found that students who use this tool will be faster and more efficient in generating more detailed ideas and organizing them into more organized paragraphs than those using conventional methods (Buran & Filyukov, 2015). Students can get a significant improvement in terms of connecting ideas that directly affect the unity of

their written product. Researchers also claim that digital mind maps can sharpen students' understanding of the grammar (because they understand the relationship between ideas in their writing), creative thinking, and critical thinking skills.

The findings of previous research stated that mind mapping made it easier for students to understand learning material (Bystrova & Larionova, 2015; Wu & Chen, 2018). Other research also proves that mind mapping is feasible in learning (Fu et al., 2019; Sulfemi & Desmiati, 2018). It can be concluded that the use of digital mind mapping can help students in learning. This research implies that teachers can use digital mind mapping to improve writing skills in children. The use of digital mind mapping makes it easier for students to assemble the ideas they want to put in a digital mind map and also sentence by sentence. In addition, students have the motivation to continue to develop writing skills using digital mind maps.

## Conclusion

Implementing Digital Mind Mapping in learning to write English texts can improve the ability to write texts. Thus, the use of Digital Mind Mapping is effective in improving students' writing skills. It is recommended for teachers to use Digital Mind Mapping so that they can increase students' motivation and enthusiasm in improving writing skills.

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