# THE DIGITAL MIND MAPPING ON WRITING SKILLS OF EXPLANATORY TEXTS IN ELEMENTARY SCHOOL

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## ABSTRAK

This study examines the effectiveness of digital mind mapping media on explanatory text writing skills. The subjects of this study were 25 sixth-grade students at SDN Sepande. Data collection in this study used quantitative pre-experimental data analysis techniques and data collection methods in pre-tests and post-tests to determine the effectiveness of digital mind mapping. Initial data collection in the form of a pre-test involved participants being directed to write explanatory texts on a predetermined topic, followed by a pre-test using digital mind mapping. The study's results showed an increase in students' writing skills during the study, as indicated by changes in the average scores obtained from the pre-test and post-test. The average score in the pre-test was 57.00, while the average score in the post-test was 82.80. Therefore, it can be concluded that sixth-grade students' explanatory text writing skills at SDN Sepande improved after using digital mind mapping.

Keyword: Digital Mind Mapping, Writing Skills, Elementary School

## INTRODUCTION

The Indonesian education system uses an independent curriculum emphasising comfortable, innovative, and independent learning. This curriculum only focuses on core subjects, and Indonesian is one of the subjects that has undergone significant changes because it is considered essential (Suriani, 2024). Indonesian language learning is one of the subjects studied in elementary school. (*Media Pembelajaran Video*, 2024). Language skills often cause problems in oral or written communication (Nugraheni, 2025). In language skills in Indonesian language learning, which must be understood and mastered by students, there are four components: listening, reading, speaking, and writing. (Yanti & Suriani, 2024). Writing in primary school is a skill that students must master effectively. Writing on its own is currently a difficult skill because students must master the vocabulary, knowledge, and experience in writing the ideas or opinions they will write (Inggriyani & Anisa Pebrianti, 2021).

Learners' writing skills are acquired from their great interest and regular practice, so skills can be developed. In language learning, learners need to have specific abilities. The two skills that need to be learned are writing and speaking skills (Agustin, 2024). Writing skills are currently essential for the academic progress of every learner. Students who have a personality for good writing skills can convey their ideas in a clear, organised, and interconnected way (Ernawati et al., 2023). Writing activities can also be language skills activities because writing is both

expressive and productive. Therefore, it is essential for students because it can build their ability to practice critical thinking, creativity, and initiative (Koraag & Astawan, 2022).

Learning to write can be done in various ways, but writing can also be considered a communication activity to convey messages to other people. In the field of the Indonesian language, the writing itself is classified as an important aspect that must be continuously applied and trained. (Butarbutar, 2025). Writing is a complex activity that requires students to organise and convey various ideas, concepts, and feelings directly towards problems or events that will happen in the future. One example is writing explanatory texts in which students explain the process of an event by honing their feelings and communicating the results of their thoughts in writing or text. By pouring ideas into writing, they reflect their resources, so the ideas students write will also produce good writing. (Widiastuti et al., 2022).

The Indonesian language subjects that sixth-grade students will study currently include fiction, report, poetry, and explanatory texts. An explanatory text is a text that explains a phenomenon that occurs. Phenomena can occur in the form of natural disasters or social problems that occur in the surrounding environment. (Sandra, 2023)Digital technology for classroom learning aims to make learning more enjoyable and easily accepted by learners. Another purpose of digital technology for classroom learning is to facilitate learning by using various designs. (Salsabila et al., 2023). With advances in technology, information can be displayed and shared through digital audio, visual, audiovisual, and multimedia media. (Amanullah, 2020). However, utilising technology effectively and relevantly will also face some substantial challenges. In addition, the current technology-based digital era allows learners to study concepts individually through various interactive learning platforms, emphasising knowledge-building based on experience. (Purwinarti et al., 2025).

Learning media is used to deliver material into a learning process and trigger learners' curiosity, helping the learning process. With today's technological advances, it can be concluded that learning media functions as a learning tool and helps the learning process achieve its goals (Damasanti & Nuroh, 2023). Today, digital media such as mind mapping can meet learning needs. During activities, millennial learners use laptops and smartphones more often, especially to access the internet. The world of education must change so that learners can use technology as a learning tool. This will make learners not only focus on books but also be able to use technology to make learning fun. Digital mind mapping is a digital mind map made using material notes for more practical learning (Oktavia et al., 2021). In addition, students must have knowledge-related skills, such as psychomotor skills, cognitive skills, and affective skills (Novitasari et al., 2024). In the writing learning process, greater attention is given to how

students use theory to learn. As a result, this problem is solved by using teaching materials based on mind maps or mind mapping to assess students' writing abilities (M. Zubad Nurul Yaqin, 2023)

## LITERATURE REVIEW

Explanatory text writing skills are the ability to express ideas or concepts through explanatory texts. In explanatory text writing, students can write explanatory texts using linguistic and literary rules to write texts according to context. In writing explanatory texts, students can convey their feelings beautifully and interestingly by facts and their imagination (Yono, 2024). Explanatory texts present writing skills using standard vocabulary and effective sentences that students must master to achieve learning objectives. Explanation comes from the English word "explanation," which means to clarify. Therefore, explanatory texts explain events related to natural or social phenomena. Explanatory texts explain events such as volcanic eruptions, floods, landslides, and social phenomena such as traffic violations (Lawatri & Indihadi, 2021).

Writing explanatory texts requires understanding the topic and main ideas, which are then developed into an outline and finally into a complete explanatory text. Writing explanatory texts requires an understanding of factual information and a clear sequence of events (Aqilah et al., n.d.). The skill of writing explanatory texts is a skill developed to explain how and why events occur. Explanatory texts themselves have a social function to explain or analyze the process of a problem occurring (Di & Negeri, 2021). The motivation of students in writing explanatory texts can be seen through their enthusiasm in participating in learning, their attention to learning, and their activity in participating in learning, which indicates a high level of curiosity (*Anggun Melati Sari et al.,*2015). Mastery of explanatory texts is not only important for academic purposes but also for daily life, as students who study explanatory texts can understand the processes behind natural disasters or social disasters (Ramadani et al., 2024).

However, currently, the skill of writing explanatory texts is still a concern due to a lack of motivation and mastery in writing. Writing requires systematic steps (Trisnasari et al., 2020). To improve writing skills, particularly in writing explanatory texts, students can be assisted by using digital learning media, leveraging the advanced digital applications and various models available today (Ilmiah & Madrasah, 2025). Digital applications that can be used include digital mind mapping, a learning method for organizing knowledge using simple concepts to understand ideas. Digital mind mapping displays ideas, words, and information in graphical form. The advantages of digital mind mapping include increasing interest in learning in digital

form and easy access without being limited to the scale of a document (Bhattacharya & Mohalik, 2020).

Digital mind mapping is a type of mind map, known as a digital mind map, which is a technology-based application that allows users to explore and create ideas to be studied. Digital mind mapping is a digital graphic application with options for colors, numbers, fonts, and images. Digital mind mapping is provided to students to make learning more efficient and dynamic, thereby developing ideas that can be used to enhance critical thinking skills (Hidayati et al., 2021). Digital mind mapping is referred to as the process of mapping thoughts to connect specific concepts that are then expressed in an engaging and creative written form. Digital mind mapping is considered highly effective with the ongoing advancements in technology. The use of digital mind mapping in education can also enhance the learning process enjoyably. Digital mind mapping can also serve as a solution for obtaining information that can then be transformed into a creative tool containing ideas (Winata & Rahmat, 2022).

The use of digital mind mapping in classroom learning for writing skills makes it easier for students to express their ideas and write in a structured manner, as well as develop topics. By using this digital tool, students are more efficient in generating ideas and organizing them into paragraphs by connecting one idea to another, which directly affects their writing results (Sairo et al., 2021). Digital mind mapping functions as a visual and creative technique, guiding students toward deeper understanding. Digital mind mapping platforms not only encourage cognitive development but also promote cognitive-based learning, thereby enhancing skills. It is referred to as cognitive learning because students can learn more engagingly by using features such as colors, icons, and hyperlinks that are easier to access (Sagita & Sagita, 2024).

## METODOLOGY

This research method uses a quantitative pre-experimental design to achieve nominal results that facilitate analysis and interpretation using statistical data processing. The design used is a one-group pretest-posttest design, which includes a pretest or test before treatment and a posttest after treatment. The population or sample used was 25 students in one class, 6A, at SDN SEPANDE. For sample selection, this study employed the saturated sampling technique, where the sampling technique was used to select the sample. Data collection was conducted using a pretest and a posttest (Adim et al., 2020). The research instrument used a test in the form of a pretest and posttest given to students to measure their skills in writing explanatory texts on specific topics (pretest) and a second test given to students in the form of instructions to write complete explanatory texts using digital mind mapping (posttest).

## RESULT AND DISCUSSION

This study was conducted to determine how effective digital mind mapping media is in developing the skill of writing explanatory texts in primary school. It involved one class, VI A, which consisted of 25 students at SDN SEPANDE.

a. Validity Test

Table 1. Pretest Validity Test Results

**Correlations**

| | | Pre1 | Pre2 | Pre3 | Pre4 | Pre5 | Total_Pretest |
|---|---|---|---|---|---|---|---|
| Pre1 | Pearson Correlation | 1 | .322 | .708** | .471* | .204 | .720** |
| | Sig. (2-tailed) | | .125 | .000 | .020 | .340 | .000 |
| | N | 24 | 24 | 24 | 24 | 24 | 24 |
| Pre2 | Pearson Correlation | .322 | 1 | .357 | .684** | .256 | .725** |
| | Sig. (2-tailed) | .125 | | .086 | .000 | .228 | .000 |
| | N | 24 | 24 | 24 | 24 | 24 | 24 |
| Pre3 | Pearson Correlation | .708** | .357 | 1 | .657** | .496* | .841** |
| | Sig. (2-tailed) | .000 | .086 | | .000 | .014 | .000 |
| | N | 24 | 24 | 24 | 24 | 24 | 24 |
| Pre4 | Pearson Correlation | .471* | .684** | .657** | 1 | .408* | .866** |
| | Sig. (2-tailed) | .020 | .000 | .000 | | .048 | .000 |
| | N | 24 | 24 | 24 | 24 | 24 | 24 |
| Pre5 | Pearson Correlation | .204 | .256 | .496* | .408* | 1 | .602** |
| | Sig. (2-tailed) | .340 | .228 | .014 | .048 | | .002 |
| | N | 24 | 24 | 24 | 24 | 24 | 24 |
| Total_Pretest | Pearson Correlation | .720** | .725** | .841** | .866** | .602** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .002 | |
| | N | 24 | 24 | 24 | 24 | 24 | 24 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 2. Post-test Validity Test Result

**Correlations**

| | | Post1 | Post2 | Post3 | Post4 | Post5 | Total_Posttest |
|---|---|---|---|---|---|---|---|
| Post1 | Pearson Correlation | 1 | .457* | .418* | .039 | .495* | .715** |
| | Sig. (2-tailed) | | .025 | .042 | .856 | .014 | .000 |
| | N | 24 | 24 | 24 | 24 | 24 | 24 |
| Post2 | Pearson Correlation | .457* | 1 | -.035 | .239 | .205 | .504* |
| | Sig. (2-tailed) | .025 | | .872 | .261 | .337 | .012 |
| | N | 24 | 24 | 24 | 24 | 24 | 24 |
| Post3 | Pearson Correlation | .418* | -.035 | 1 | .352 | .504* | .713** |
| | Sig. (2-tailed) | .042 | .872 | | .092 | .012 | .000 |
| | N | 24 | 24 | 24 | 24 | 24 | 24 |
| Post4 | Pearson Correlation | .039 | .239 | .352 | 1 | .269 | .616** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Sig. (2-tailed) | .856 | .261 | .092 | | .203 | .001 |
| | N | 24 | 24 | 24 | 24 | 24 | 24 |
| Post5 | Pearson Correlation | .495* | .205 | .504* | .269 | 1 | .737** |
| | Sig. (2-tailed) | .014 | .337 | .012 | .203 | | .000 |
| | N | 24 | 24 | 24 | 24 | 24 | 24 |
| Total_Posttest | Pearson Correlation | .715** | .504* | .713** | .616** | .737** | 1 |
| | Sig. (2-tailed) | .000 | .012 | .000 | .001 | .000 | |
| | N | 24 | 24 | 24 | 24 | 24 | 24 |

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The validity results show that there is a correlation or support for the test items (total score). This calculation was performed by correlating the item scores with the total item scores. The correlation can be considered significant because the significance value is less than the alpha (significance level), which in this case is 5% based on the output above, as shown in the table below.

Tabel 3. Hasil Signifikan Validitas

| Item | r | sig | Validitas | Item | R | sig | Validitas |
|---|---|---|---|---|---|---|---|
| Pre1 | 0.720 | 0.000 | Valid | Post1 | 0.715 | 0.000 | Valid |
| Pre2 | 0.725 | 0.000 | Valid | Post2 | 0.504 | 0.012 | Valid |
| Pre3 | 0.841 | 0.000 | Valid | Post3 | 0.713 | 0.000 | Valid |
| Pre4 | 0.866 | 0.000 | Valid | Post4 | 0.616 | 0.001 | Valid |
| Pre5 | 0.602 | 0.002 | Valid | Post5 | 0.737 | 0.000 | Valid |

Based on the results above, it can be concluded that all questions from the pretest and posttest are valid, as indicated by a significance value that is smaller than the significance level, which means that there is a correlation between the questions and the total.

a. Reliability Test Results

Table 4. Reliability Test Results

| Variabel Pretest | | |
|---|---|---|
| **Reliability Statistics** | | |
| Cronbach's Alpha | N of Items | |
| .804 | 5 | |

The reliability test shows the reliability coefficient using Cronbach's Alpha, which generally explains that if the reliability result is >0.600, it is considered satisfactory. The two variables produced Cronbach's Alpha values of 0.804 and 0.666, which exceed the limit of 0.600, so it can be concluded that both instrument variables are reliable.

Table 5. Paired sample statistics test results

|  |  | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Pair 1 | Pre Test | 57.0000 | 25 | 11.18034 | 2.23607 |
|  | Post Test | 82.8000 | 25 | 6.62697 | 1.32539 |

The above t-test results show that the average pretest score is 57, and the average posttest score is 82.8. Thus, the average score after using digital mind mapping is more significant. Therefore, it means there is an improvement in the skill of writing explanatory texts using digital mind mapping.

Table 6. Paired Samples Correlations Test Results

|  |  | N | Correlation | Sig. |
|---|---|---|---|---|
| Pair 1 | Pre-Test & Post-Test | 25 | .723 | .000 |

Furthermore, the table above shows the paired samples correlation test results, which shows a significance value of 0.000. Where the sig value is > 0.00, this is because the pretest and posttest have a significant relationship.

Table 7. Paired Samples Test Results

|  |  | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
|  |  |  |  |  | Lower | Upper |  |  |  |
| Pair 1 | Pre Test – Post Test | -25.80000 | 7.86342 | 1.57268 | -29.04586 | -22.555414 | -16.405 | 24 | ,000 |

The t-test results using a paired sample test show a significant value of 0.000, which means less than 0.05. Therefore, H0 is rejected. This means the results obtained before and after writing explanatory texts using digital mind mapping media differ. With that, it can be said that there is a significant difference between the skills of writing explanatory texts before and after using digital mind mapping media. Homogeneity Test

H0: data is homogeneous

H1: data is not homogeneous

Table 8. Homogeneity Results

|  |  | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Nilai | Based on Mean | 3.702 | 1 | 46 | .061 |
|  | Based on Median | 2.188 | 1 | 46 | .146 |
|  | Based on Median and with adjusted df | 2.188 | 1 | 38.406 | .147 |
|  | Based on trimmed mean | 3.656 | 1 | 46 | .062 |

The homogeneity results explain the statistical test results of the Levene test, which had a value of 3.702 and a significance value of 0.061. In this test, a decision was made to reject H0 if the significance value was less than the significance level ($\alpha = 0.05$). Given that the significance value (0.061) is greater than the significance level (0.05), a decision was made to fail to reject H0, so it can be concluded that the data is homogeneous.

This study's results indicate an increase in students' explanatory writing skills after using digital mind mapping. Compared to before using digital mind mapping. After the pretest and posttest, it was found that the results of the posttest were higher, and there were changes. Grading in both tests used the same assessment aspects, namely text content, text structure, explanatory text language rules, spelling, punctuation, and the suitability of mind mapping to the explanatory text. Based on the findings of the previous results or the pretest, the explanatory text writing score was 57.00, and the posttest score was 82.80. After conducting a normality test using Shapiro-Wilk and t-tests, the t-test results showed a significance value of 0.000. So, it can be concluded that the significance value is $0.000 < 0.05$. This means there is a difference in the skill of writing explanatory texts before and after using digital mind mapping. Learning to write explanatory texts using digital mind mapping makes students more active and enthusiastic. Based on these results, it can be seen how effective digital mind mapping is for writing explanatory texts. This study supports the results of the study (Sairo et al., 2021) that the use of digital mind mapping improves students' writing skills. This study shows that digital mind mapping is said to be effective in improving students' ability to write. The increase in the average is also supported by students' interest in learning to use technology. Using digital mind mapping can help students develop ideas and think critically, thus improving students' writing.

Agintayani (2022) states that digital mind mapping is appropriate for observing students' writing skills. Using this medium has proven that writing skills have increased to 50%, whereas previously, students' writing skills were only at 30%. Using mind mapping is also proven to motivate students. Sairo et al. (2021) researched how effectively digital mind mapping improves students' writing skills. The results showed that digital mind mapping effectively improves students' writing skills. The average score in the pretest students was 24%, then increased to 90%, and there was an increase in students. Even though previously it did not reach the minimum learning standards. The increase in the obtained results is also based on the support of digital media or technology, which can help students organize their ideas, make them think critically and creatively, and improve their writing. Tajiri et al. (2025) explained in their research that digital mind mapping is effective for students' needs to improve writing skills.

Therefore, digital mind mapping can be distributed into Indonesian language learning. By providing significant improvement results, exceeding the grade point average (KPM) generated.

Inovasi et al. (2025) stated that using mind mapping in digital form can improve students' competence in writing explanatory texts. By using digital mind mapping media, students will find learning to write explanatory texts easier to understand and more enjoyable. The results of this study show a significant improvement in the ability to write explanatory texts by meeting criteria such as content, structure, vocabulary, and punctuation. Furthermore, according to Nurhabibah et al. (2021), using a digital mind mapping learning model can also influence cognitive learning outcomes. Therefore, the average pretest score for cognitive learning outcomes is higher than the average posttest score after treatment. According to the study results, Ismaela & Ramadhani (2021) explain how learning outcomes improve when using digital mind mapping media by conducting several cycles or treatments. In cycle I, which was carried out, the learning completion percentage was 71%, with an average of 80.4. Furthermore, in the second cycle, a percentage of 100% was obtained with an average of 88. It can be concluded that there is an increase in the percentage result of 29% and an increase in the value of 7.6. The results of this study indicate that the use of digital mind mapping media can improve students' learning outcomes.

## CONCLUSION

Based on the results of the research and discussion that was carried out, it can be concluded that there is an improvement in the skill of writing explanatory texts using digital mind mapping in grade VI SDN Sepande. There is a difference in the average results before and after the treatment. The average result before the treatment was 52.00. After the treatment, there was an increase to 82.80. With the change in the average results of the students, it is certainly very effective to use this digital mind mapping tool to write explanatory texts for students. Digital mind mapping is also a digital tool that makes it easier for students to organize ideas before writing explanatory texts. This digital mind mapping can also help students to organize information visually. Digital media can increase students' interest and motivation to write texts because learning becomes easier, more fun, and enjoyable.

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