



**The Effectiveness of Using Mind Mapping in English Vocabulary
Learning for Eleventh Grade Students at MA Darul Ihsan Samarinda**

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Citation

Chicago Manual of Style 17th Edition

Almaidah Rahmadini Darsono, Shafa and Anis Komariah., "The Effectiveness of Using Mind Mapping in English Vocabulary Learning for Eleventh Grade Students at MA Darul Ihsan Samarinda," *El-Syaker*, 2(1), 52-64.

Received: 1 Maret 2025 **Accepted:** 11 Maret 2025 **Published:** 11 Maret 2025

Abstract

Mind mapping is an innovative learning strategy that emphasizes creativity and visual organization to enhance comprehension and retention. However, its effectiveness in improving vocabulary acquisition, particularly in a high school setting, requires further exploration. This study investigated the application of mind mapping in fostering English vocabulary acquisition among eleventh grade students at MA Darul Ihsan Samarinda. Using a quasi-experimental design, this quantitative study involved 43 students divided into experimental and control groups. Data were collected through a pre-test and a post-test consisting of 25 multiple-choice questions. Statistical analysis, including the Mann-Whitney U test, revealed that the experimental group, taught using mind mapping, experienced a significant increase in mean score of 35.3 points, compared to 27.1 points in the control group. The findings underscore the potential of mind mapping to not only enhance vocabulary acquisition but also promote student engagement and creativity. This study advocates for the integration of mind mapping into English language teaching as an effective and practical pedagogical tool.

Keywords : mind mapping, vocabulary, innovative learning strategy

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A. Introduction

The proficiency of English among Indonesian students remains a significant challenge, as evidenced by the EF English Proficiency Index, which ranks Indonesia 79th out of 113 countries.¹ This low ranking indicates that Indonesian students face difficulties mastering the foundational components of English. The foundation of learning English is first to learn vocabulary. The ability to know, comprehend, and use words effectively and efficiently through speaking, listening, reading, and writing is what Zuchdi defines as vocabulary.² The problem is that vocabulary, which forms the basis of English, often becomes the first challenge for students.

English learning is essential in the globalized era, offering students better opportunities in education, career, and social interactions.³ For high school students in Indonesia, mastery of English is necessary to pass national exams and compete in the global job market. However, traditional teaching methods often fail to engage students effectively, limiting their motivation and progress in English learning. Therefore, innovative teaching methods are required to address this gap in vocabulary learning.

Mind mapping, introduced by Tony Buzan, is a teaching method that utilizes creative and structured approaches to organize and memorize information.⁴ This method has been proven effective in previous studies, as it allows students to connect new vocabulary to existing knowledge visually and systematically. The technique's use of colors, images, and keywords makes it an attractive and interactive way for students to learn vocabulary. Thus, mind mapping is a promising strategy for enhancing vocabulary mastery.

MA Darul Ihsan Samarinda, an Islamic high school with A accreditation, provides an ideal context to explore the use of mind mapping in vocabulary learning. Despite offering English as part of its curriculum, the school faces challenges in maximizing the efficiency of teaching time due to limited resources. By integrating mind mapping into the teaching process, students can potentially improve their vocabulary mastery more effectively within these constraints.

Several previous studies have highlighted the effectiveness of mind mapping in improving language skills. For example, Rofiq Alhariri's research demonstrated a 77% improvement in speaking ability through mind mapping techniques.⁵ Similarly, Nidya Intan Novitasari and Tasya Safira Muslikhah found significant increases in vocabulary mastery among students who utilized mind mapping in their learning.⁶ These studies validate the potential of mind mapping as an innovative strategy in vocabulary instruction.

¹ Signum International AG, "English Proficiency Index (EF EPI)," 2023.

² Zuchdi Darmiyati, *Strategi Meningkatkan Kemampuan Membaca: Peningkatan Komprehensi* (Yogyakarta: UNY press, 2007).

³ H Douglas Brown and Heekyeong Lee, "FOURTH EDITION TEACHING by PRINCIPLES AN INTERACTIVE APPROACH TO LANGUAGE PEDAGOGY," 2015.

⁴ Tony Buzan, *The Ultimate Book of Mind Maps* (Jakarta: Gramedia Pustaka Utama, 2007).

⁵ Rofiq Alhariri, "Implementation Of Mind Mapping Technique To Improve Students Speaking Skill At The Eight Class Of SMPN 2 Jenggawah In Academic Year 2021/2022" (State Islamic university of Kiai Haji Achmad Siddiq Jember, 2022).

⁶ Nidya Intan Novitasari, "The Effectiveness of The Mind Map Strategy to Improve Vocabulary Mastery for the 9th Grade Students of SMPN 2 Secang" (Universitas Tidar, 2023); Tasya Safira Muslikhah, "The Effectiveness of Using Miro Digital Mind Mapping for Students' Vocabulary Mastery

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Therefore, this study seeks to investigate the effectiveness of using mind mapping in improving English vocabulary mastery among eleventh-grade students at MA Darul Ihsan Samarinda. It aims to provide empirical evidence of the strategy's impact and contribute to the development of practical, innovative teaching methods in the Indonesian educational context.

Vocabulary is a basic aspect of language that must be mastered before mastering English language skills. According to Hornby, vocabulary includes all the words a person knows or uses, as well as all the words in a particular language.⁷ Vocabulary is a collection of words with specific definitions or meanings that form the basis for language comprehension and application. Mastering vocabulary is important to learning English because it has a close connection to the four primary skills that students need to develop, these are speaking, listening, reading, and writing. Charles D. Fries explains that vocabulary mastery is the main key to mastering a language, because language skills depend not only on grammar and pronunciation, but also on an advanced understanding of the lexicon.⁸ Good vocabulary mastery allows a person to understand the context of the conversation and the purpose of the ongoing communication.

Vocabulary knowledge significantly influences listening and reading comprehension, as students with a rich vocabulary can decode meaning more easily and grasp implied messages within texts or spoken language. Without sufficient vocabulary, learners often struggle to keep up with conversations or understand academic materials, leading to frustration and decreased motivation. Therefore, vocabulary acquisition should be emphasized in language learning to facilitate better engagement and confidence in communication.

Without sufficient vocabulary, a person will have difficulty grasping the meaning and intent of the communication being carried out. Therefore, students who have a broad vocabulary tend to be able to understand the language faster and can communicate more effectively than those who have a limited vocabulary. A well-developed vocabulary also enhances writing skills, as students with a diverse word bank can express their thoughts more precisely and creatively. The ability to understand and use a wide range of words allows learners to construct grammatically accurate and meaningful sentences, improving their overall language proficiency.

According to Thornburry, there are eight types of vocabulary in English. Nouns are an element that can indicate various things, such as people, places, objects, animals, attributes, and abstract ideas.⁹ In this context, nouns not only function as names that represent something, but also as essential building blocks in constructing sentences and conveying the desired meaning. According to Thornburry, verbs are words that denote action. Verbs are components or word classes that describe an action or event, or indicate a condition of existence. Adverbs are words that modifies or clarifies the meaning of a verb, adjective, other adverb, clause, sentence, or phrase, but excludes adjectives and

at Hidayatullah Islamic High School Semarang" (Thesis (Undergraduate), Universitas Islam Sultan Agung Semarang, 2023).

⁷ Albert Sydney Hornby, *Oxford Advanced Learner's Dictionary of Current English*, vol. 4, 2006, <https://doi.org/10.1017/S0025100300000888>.

⁸ Charles C Fries, "Teaching and Learning English As A Foreign Language," *International Journal of English Language Teaching* 5, no. 2 (2018).

⁹ Scott Thornburry, *How To Teach Vocabulary* (London: Longman, 2002).

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determiners that directly modify nouns. Meanwhile, adverbs function to explain how, where, and when an event occurs. Adjectives serve to indicate certain qualities or properties of an object, person, or concept. Some adjectives are specifically used to describe certain nouns to make them clearer and more specific.

Additionally, pronouns are expressions that refer and can be considered as a shortened version of a particular noun phrase. According to Frank, prepositions are words that function to connect nouns or pronouns with other words in a sentence, which generally involve adjectives, verbs, or adverbs.¹⁰ The role of prepositions is very important because it provides an explanation of the spatial, sequential, or logical relationship between words in a phrase. Conjunctions play an important role in connecting one word to another, making sentences more cohesive and logical. Lastly, determiners are a word or phrase placed before a noun to provide additional meaning or indicate ownership and quantity.¹¹

Mind mapping, first introduced and popularized by Tony Buzan in the 1960s, is an effective tool for organizing and developing ideas. This technique is designed to record and store information creatively and efficiently. According to Buzan, mind mapping uses visual elements such as colors, images, and symbols, which involve the right and left brain simultaneously.¹² This approach makes information more structured, easy to remember, and understandable. Mind mapping connects one concept to another, creating meaningful relationships in each connected element.¹³ Tony Buzan describes mind mapping as a city map, where the center point represents the main idea, while the branches describe additional details. This hierarchical structure helps users understand the relationships between ideas as a whole, while stimulating the emergence of new, relevant ideas.

Mind mapping can produce more accurate notes and more structured plans. This method helps to organize ideas systematically, making them easier to understand and remember. Additionally, mind mapping reduces cognitive overload by breaking down complex information into simpler, more digestible components. This allows learners to process knowledge more effectively, reinforcing retention and recall. In its application, mind mapping can produce several positive impacts, such as the emergence of new relevant ideas, accurate recording of key concepts, and the development of more structured plans. On the findings by Özgül Polat's study, it was found that mind mapping improves skills such as collecting, grouping, asking questions, and evaluating information.¹⁴ Its use in learning has a positive impact on various aspects, from understanding to applying the material.

¹⁰ Frank Marcella, *Modern English a Practical Reference Guide* (New York: New York University, 1972).

¹¹ Charles Clifton and Susan A. Duffy, "Sentence and Text Comprehension: Roles of Linguistic Structure," *Annual Review of Psychology* 52, no. 1 (February 2001): 167–96, <https://doi.org/10.1146/annurev.psych.52.1.167>.

¹² Buzan, *The Ultimate Book of Mind Maps*.

¹³ Dyah Astriani et al., "Mind Mapping in Learning Models: A Tool to Improve Student Metacognitive Skills," *International Journal of Emerging Technologies in Learning* 15, no. 6 (2020): 4–17, <https://doi.org/10.3991/IJET.V15I06.12657>.

¹⁴ Özgül Polat and Ebru Aydın, "The Effect of Mind Mapping on Young Children's Critical Thinking Skills," *Thinking Skills and Creativity* 38 (December 2020): 100743, <https://doi.org/10.1016/j.tsc.2020.100743>.

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Mind mapping is also effective in supporting critical and creative thinking processes, because users are required to understand the relationship between existing ideas. Furthermore, research indicates that mind mapping enhances problem-solving skills by enabling individuals to see connections between concepts and generate innovative solutions. The use of this technique in educational settings has shown improvements in students' comprehension, engagement, and motivation. Teachers often utilize mind mapping to encourage active learning, allowing students to visualize complex subjects in a more accessible way.

The strength of mind mapping for students lies in its ability to stimulate creativity and provide ease of use in its simplicity. As a tool, mind mapping strengthens understanding by visualizing complex concepts into simpler parts.¹⁵ In the context of learning, this method helps students connect various fields of knowledge while providing deeper insight into the concepts and subjects being studied. Thus, mind mapping not only improves understanding but also accelerates the learning process.

In addition, students who use mind mapping tend to be able to access notes that have been made more easily, because of its nature that can be understood immediately.¹⁶ This is due to the characteristics of mind mapping which uses colors, symbols, and images that attract attention. Thus, mind mapping effectively stimulates creativity and makes it easier for students to understand and access notes again thanks to the use of colors, symbols, and attractive images.

Mind mapping is often referred to as "spider notes or web notes" because its shape resembles a spider with branches connecting one concept to another. This technique functions to organize ideas or information into certain categories or themes so that they are more structured.¹⁷ In the process of working, mind mapping is similar to the way our brain stores information, namely by grouping related data to make it easier to remember. Mind mapping, also called "spider notes," organizes ideas into connected branches, mirroring how the brain groups related information for easier recall.

Along with the development of technology, mind mapping is now divided into two main forms, namely conventional mind mapping and e-mind mapping.¹⁸ Conventional mind mapping is done manually using paper and pen, which is effective for training the skills of recording the core material in a structured

¹⁵ Lan Anh Thi Le et al., "The Use of Mind Mapping Technique in Descriptive Writing among Primary School Students," *Journal of Educational and Social Research* 13, no. 4 (July 1, 2023): 321–30, <https://doi.org/10.36941/jesr-2023-0112>.

¹⁶ USWATUN HASANAH, "PENERAPAN STRATEGI PEMBELAJARAN MIND MAPPING UNTUK MENINGKATKAN HASIL BELAJAR PESERTA DIDIK PADA MATA PELAJARAN FIQIH KELAS VIII A MTs NURUL ISLAM AIR BAKOMAN KABUPATEN TANGGAMUS," *Al-Idarah : Jurnal Kependidikan Islam* 6, no. 2 (December 1, 2016), <https://doi.org/10.24042/alidarah.v6i2.799>.

¹⁷ Luu Trong Tuan, "Matching and Stretching Learners' Learning Styles," *Journal of Language Teaching and Research* 2, no. 2 (March 1, 2011), <https://doi.org/10.4304/jltr.2.2.285-294>.

¹⁸ Ali Abdul Hadi Al-Omari and Belal Ahmed Al-Dhoon, "The Impact of E-Mind Mapping Strategy and Learning Styles on the Achievement of the Tenth- Grade Students in Biology," *Universal Journal of Educational Research* 8, no. 12 (December 2020): 6429–38, <https://doi.org/10.13189/ujer.2020.081208>.

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manner.¹⁹ This method involves a manual process that stimulates students' creativity.

However, conventional mind mapping disadvantages include a long time for beginner students and those who are less interested in reading, it can be chaotic and confusing when faced with complex data, only involving active students, and teachers can be overwhelmed in checking the varying mind maps of each student. Despite these challenges, conventional mind mapping continues to be widely used because it encourages deeper engagement with the learning material and strengthens cognitive associations through manual note-taking. Additionally, the physical act of writing and drawing connections can enhance memory retention and conceptual understanding.

On the other hand, e-mind mapping uses digital applications, such as Mind Mapper or Free Mind. These applications allow users to flexibly create concept maps, modify, print, and share them. This technology offers additional advantages in the form of high accessibility and the ability to include visual elements such as images, graphs, and more attractive colors.²⁰ With these features, e-mind mapping is more suitable for modern learning needs that demand efficiency and creativity. The ability to edit and reorganize content easily makes e-mind mapping particularly useful for dynamic learning and complex problem-solving. Additionally, it allows for collaboration among students or team members, as digital mind maps can be shared and modified in real time, fostering interactive and cooperative learning experiences.

The advantages of e-mind mapping are similar to conventional mind mapping, but e-mind mapping offers more advantages, especially in the learning process, because it utilizes modern technology that allows users to create maps, add images, draw with color, modify, revise, print, and share them with others. By integrating e-mind mapping into educational practices, students can benefit from a more structured, engaging, and visually appealing way to process and retain information, making learning more interactive and accessible.

Selecting the right type of mind mapping needs to consider the needs and characteristics of students.²¹ This is very important because each student has a different way of learning, so choosing the right version of the mind map can help students organize and absorb vocabulary effectively. By using the appropriate mind map, students can flow vocabulary in a more structured and systematic way, which allows them to understand and remember information better. So, choosing the right type of mind map greatly influences students' ability to learn and master English vocabulary.

Mind mapping, both conventional and electronic, continues to show its potential in supporting the learning process. However, each type has its own advantages and disadvantages. By understanding the characteristics and needs of students, educators can use mind mapping to improve learning effectiveness. In

¹⁹ Fawwaz Al-Al-abed Al-haq et al., "The Impact of an E-Mind Mapping Strategy on Improving Basic Stage Students' English Vocabulary," *Jordan Journal of Modern Languages and Literature*, vol. 11, 2019, <https://www.researchgate.net/publication/339089819>.

²⁰ Al-Omari and Al-Dhoon, "The Impact of E-Mind Mapping Strategy and Learning Styles on the Achievement of the Tenth- Grade Students in Biology."

²¹ R Schwartz, "Cognitive-Behavior Modification: A Conceptual Review," *Clinical Psychology Review* 2, no. 3 (1982): 267-93, [https://doi.org/10.1016/0272-7358\(82\)90015-0](https://doi.org/10.1016/0272-7358(82)90015-0).

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addition, strategic use of mind mapping can help students not only remember information, but also apply it in a broader context.

B. Method

This study employed a quasi-experimental research design with a quantitative approach to examine the effectiveness of using mind mapping in improving English vocabulary mastery among eleventh-grade students at MA Darul Ihsan Samarinda. The quasi-experimental design was chosen to allow the researcher to compare the outcomes of the experimental and control groups systematically.²² By employing pre-tests and post-tests, the study captured measurable changes in students' vocabulary proficiency before and after the intervention.

Data collection involved administering 25 multiple-choice questions to both the experimental and control groups during the pre-test and post-test phases. The test items were derived from two curriculum-aligned textbooks—Bahasa Inggris: English for Change for SMA/MA Grade XI and Pathway to English for SMA/MA Class XI—ensuring their relevance and validity.²³ Validity and reliability tests for the instruments were conducted using Pearson Product Moment and Cronbach's Alpha, confirming their suitability for the study.²⁴

The experimental group was taught using the mind mapping strategy across four learning sessions, while the control group followed conventional teaching methods. Both groups were assessed under the same conditions to ensure consistency and reliability of results.²⁵ Mind mapping sessions were designed to actively involve students in creating visual representations of vocabulary, enhancing engagement and retention as suggested by Buzan.²⁶

For data analysis, pre-test and post-test scores were evaluated to measure the impact of the intervention. Statistical tests, including the Shapiro-Wilk normality test and the Levene homogeneity test, were used to ensure the data met the necessary parametric or non-parametric criteria. Since the post-test data were not normally distributed, the Mann-Whitney U test was employed to compare the performance of the two groups and determine the significance of the findings.²⁷

The analysis followed rigorous steps to ensure accuracy and validity in interpreting the results. Descriptive statistics, such as mean and standard deviation, were calculated to provide an overview of score distributions. Comparative analysis through non-parametric testing highlighted the differences in vocabulary mastery between the experimental and control groups.

C. Findings and Discussion

This research has been conducted by researchers using experimental methods to analyze the effect of using certain techniques in learning. In the

²² Sugiyono, *Statistika Untuk Penelitian* (Bandung: Alfabeta, 2016).

²³ Puji Astuti et al., *BAHASA INGGRIS BAHASA INGGRIS English for Change English for Change*, n.d., <https://buku.kemdikbud.go.id>; Th. M. Sudarwanti, *Pathway to English 2 : For SMA/MA Grade XI*, Kurikulum Merdeka (Jakarta: Erlangga, 2022).

²⁴ Suharsimi Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktek*, Revisi 5 (Jakarta: PT Rineka Cipta, 2010).

²⁵ Sugiyono, *Statistika Untuk Penelitian*.

²⁶ Buzan, *The Ultimate Book of Mind Maps*.

²⁷ Sugiyono, *Statistika Untuk Penelitian*.

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process of implementing this research, students were divided into two different groups, namely the experimental group that was given special treatment, and the control group that did not receive the treatment. To collect the necessary data, researchers used a multiple-choice test consisting of 25 questions.

In the experimental group, students were given treatment in the form of using a mind map strategy, while the control group did not use the strategy. To measure students' vocabulary mastery ability, a multiple-choice test is used. Before the test is applied, the researcher tests the validity and reliability of the instrument. From the test results, there are 25 questions that are declared valid and reliable.

After the research process was completed, the researcher collected data from the pre-test and post-test results from both groups for further analysis. The results of this test will provide an overview of the effectiveness of using mind map strategies in students' vocabulary mastery.

Table 1. Pre-test and post-test results

Experimental Group		
Σn	21	
Average	54.4	89.7
Min	28	76
Max	72	96
Control Group		
Σn	22	
Average	50.3	77.4
Min	20	64
Max	72	88

From the table above, it shown that the average pre-test in the experimental class was 54.4, while in the post-test, it was 89.7. The lowest score on the pre-test was 28, and the highest score was 76. While on the post-test, the lowest score was 72, and the highest score was 96. On the other table, it was show that the average pre-test in the control class was 50.3, while in the post-test, it was 77.4. The lowest score on the pre-test was 20, and the highest score was 64. While on the post-test, the lowest score was 72, and the highest score was 88.

Based on the two tables above, there is a significant difference in the average score between the experimental class and the control class. This difference is very clearly seen in the higher average score of the experimental class compared to the control class. The experimental class experienced an increase of 35.3 points, while the control class experienced an increase of 27.1 points. The greater increase in the experimental class indicates that the implementation of the strategy used has a more significant impact on student learning outcomes in that class.

Table 2. Shapiro-Wilk normality test

Tests of Normality				
Shapiro-Wilk				
	Class	Statistic	df	Sig.
Pre-test	XI-1	0.939	21	0.205
	XI-3	0.960	22	0.482

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Post-test	XI-1	0.633	21	0.000
	XI-3	0.814	22	0.001

From the table above, it shows that the pre-test significance value in both the experimental group and the control group class has a sig value > 0.05 , so the data is considered normally distributed. However, in the post-test, both the experimental group and the control group have a sig value < 0.05 , so the data is considered not normally distributed. Therefore, if there is one of the data that is not normally distributed, the researcher decides to use a non-parametric data analysis technique, namely the Mann-Whitney test (U-test).

Table 3. Homogeneity test

Tests of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Pre-test	Based on Mean	1.268	1	41	0.267
	Based on Median	0.118	1	41	0.733
	Based on Median and with adjusted df	0.118	1	28.49	0.734
	Based on trimmed mean	0.427	1	41	0.517
Post-test	Based on Mean	0.268	1	41	0.607
	Based on Median	0.279	1	41	0.600
	Based on Median and with adjusted df	0.279	1	39.84	0.600
	Based on trimmed mean	0.273	1	41	0.604

The table above shows that both classes have significant values of $0.267 > 0.05$ for pre-test and $0.607 > 0.05$ for post-test. Based on the results of the calculated test, the significance value of both is more than 0.05, so the data is said to be homogeneous.

Table 4. Mann-Whitney test (U-test)

Test Statistica	
	Post-test
Mann-Whitney U	35.500
Wilcoxon W	288.500
Z	-4.917
Asymp. Sig. (2-tailed)	0.000
a. Grouping Variable: Class	

The table above shows the value of Asymp. Sig. (2-tailed) is $0.000 < 0.05$. Then it can be said that H_0 is rejected and H_1 is accepted. From these results, the

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researcher concludes that if the hypothesis is accepted, that is, the application of mind mapping strategies has a significant effect on students' English vocabulary learning to improve the vocabulary mastery of eleventh grade students of MA Darul Ihsan Samarinda.

According to Charles D. Fries, vocabulary is a fundamental component in learning a foreign language that is very important for students to master.²⁸ The importance of vocabulary learning is not only in increasing the number of words mastered, but also in students' ability to use these words appropriately and flexibly according to the context. At MA Darul Ihsan, this urgency is the basis for conducting research to find learning methods that are not only effective, but also innovative and able to attract students' interest.

This research involved two classes, namely XI-1 as the experimental group and XI-3 as the control group, with a total of 43 students. Before the treatment was given, both groups were given a pre-test to determine the level of students' initial vocabulary mastery. The pre-test results showed that the average score of the experimental group was 54.4, while the control group achieved an average of 50.3. These data are the basis for comparing the improvements that occurred after the treatment was carried out. After the application of mind mapping to the experimental group for four learning sessions, the average post-test score of this group increased to 89.7. On the other hand, the control group using the conventional method only experienced an increase in the average score to 77.4. The increase in the average score of 35.3 points in the experimental group compared to 27.1 points in the control group shows a positive impact of using mind mapping on students' vocabulary mastery.

Furthermore, the researcher found the test results from the non-parametric Mann-Whitney U test showed a significance value of 0.000 (<0.05), which is below the threshold of 0.05. This result indicates that the hypothesis H_1 is accepted, confirming that mind mapping is effective in English vocabulary learning for eleventh grade students at MA Darul Ihsan Samarinda.

The findings of this research in line with the research conducted by Rofiq Alhariri.²⁹ Although Alhariri's research employed the Classroom Action Research (CAR) method and focused on the application of mind mapping to improve students' speaking skills, the results revealed a 77% improvement in students' speaking abilities. This demonstrates the versatility of the mind mapping technique in enhancing different aspects of English language learning.

Another supporting study is by Nidya Intan Novitasari.³⁰ This study shares similarities in its quasi-experimental design, which involved data collection through pre-tests and post-tests. The results showed that the average scores in the experimental group improved significantly by 47.4 points, while the control group only improved by 23.5 points.

According to Buzan, mind mapping is one of the easiest strategies to enter information into the brain and retrieve information from the human brain.³¹ This strategy is considered very creative and effective in helping the process of taking

²⁸ Fries, "Teaching and Learning English As A Foreign Language."

²⁹ Rofiq Alhariri, "Implementation Of Mind Mapping Technique To Improve Students Speaking Skill At The Eight Class Of SMPN 2 Jenggawah In Academic Year 2021/2022."

³⁰ Intan Novitasari, "The Effectiveness of The Mind Map Strategy to Improve Vocabulary Mastery for the 9th Grade Students of SMPN 2 Secang."

³¹ Buzan, *The Ultimate Book of Mind Maps*.

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notes, because mind mapping can map various ideas or thoughts in the mind of the maker. In its application at MA Darul Ihsan Samarinda, students showed a significant increase in understanding and use of the mind mapping strategy. This shows that the use of mind mapping not only helps students remember information better, but also facilitates them in organizing ideas and learning materials visually, which ultimately strengthens the learning process.

In conclusion, based on the findings of the research, the average score of students in the experimental class who were taught with mind mapping increased significantly from 54.4 to 89.7, with an increase of 35.3 points. Meanwhile, in the control class who were not taught with mind mapping, the average score increased from 50.3 to 77.4, but the increase was only 27.1 points. The greater difference in the experimental group indicates that the mind mapping strategy helps students remember and understand new vocabulary more effectively.

Overall, this research successfully answered two research questions, namely that the mind mapping strategy is effective in learning English vocabulary and has a significant impact on improving student learning outcomes. With the results achieved, this research is expected to be a reference for teachers to apply this method in daily learning to improve the quality of English learning.

D. Conclusion

Based on the results of this study, the researcher concluded that there was a significant difference in vocabulary mastery between the experimental group and the control group taught with and without using the mind mapping strategy. The experimental group, which was given learning with the mind mapping method, showed higher results in vocabulary mastery compared to the control group that did not use the method. This can be seen from the average post-test score of the experimental group of 89.7, which was higher than the control group with an average score of 77.4. This value shows that the use of mind mapping contributes positively to improving vocabulary mastery in students.

Furthermore, statistical calculations using the Mann-Whitney Test (U-test) strengthen these results, where the Asymp. Sig. (2-tailed) value is 0.000, which is below 0.05. This value indicates that the null hypothesis (H_0) is rejected, while the alternative hypothesis (H_1) is accepted. In other words, these results prove that the application of the mind mapping strategy has a significant effect on students' English vocabulary learning. Based on these results, the researcher concluded that the hypothesis was accepted, namely that the application of the mind mapping strategy has a significant impact on the learning of English vocabulary of eleventh grade students of MA Darul Ihsan Samarinda in improving their vocabulary mastery.

The study discovered that while reflective practice helps teachers in identifying and addressing gaps in their teaching methods, significant barriers such as time constraints and heavy workloads hinder their engagement with formal reflective tools. In addition to the new insights to the literature, this study discovered how vocational school teachers adapt reflective practices to their time-constrained setting, and how informal, real-time reflection plays an important role in their professional development. However, the study's reliance on self-reported data from a single vocational school limits the findings' generalisability. Therefore,

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the researcher wishes that there will be incorporation of observational data in the future, to provide more comprehensive understanding of reflection in practice rather than relying on self-reported data. Extended interviews to other school teachers would also help providing multiple perceptions to derive conclusions from—whether to support or contradict themes introduced in this writing.

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