USING MIND MAPPING TO IMPROVE STUDENTS' SPEAKING SKILL AT SECONDARY SCHOOL

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Abstract: *This study examines the impact of the mind mapping technique to improve students' speaking skills at an Indonesian secondary school. This study employed an experimental design, involving a pre-test and post-test. A treatment was given between the two tests, following the pre-test. Data were analyzed using descriptive analysis by comparing the pre-test and post-test results to determine whether students' speaking abilities improved after the treatment. Through a treatment involving mind mapping, students showed significant improvements in speaking accuracy, fluency, and comprehensibility. The score of pre-test and post-test reveal gains in accuracy (1.2 points), fluency (1.37 points), and comprehensibility (0.83 points). The statistical analysis also demonstrated a significant t-test value of 12.59, further validating the effectiveness of mind mapping. Students expressed increased enthusiasm and confidence in speaking activities, highlighting mind mapping's role in fostering better communication. This research suggests that mind mapping can be an effective tool in English language education, with potential for broader application across different learning contexts.*

INTRODUCTION

The English language learning process involves four interrelated skills: listening, reading, speaking, and writing. All of these skills must be mastered by students, but speaking is considered the most crucial for effective communication. According to recent studies, developing speaking proficiency is a primary goal in English language education, as it is essential for meaningful interaction and social engagement (Newton & Nation, 2020; Burns, 2016). This perspective aligns with current educational theories, which emphasize that learners are often judged on their English proficiency based on their ability to speak fluently and clearly (Nadra et al., 2023; Wette, 2017). Thus, speaking remains a critical skill for Indonesian students as it directly impacts their ability to communicate effectively in English.

In the current context of English language education, the expectation is that students will be able to communicate effectively, using proper grammar, fluency, and enjoying the process of speaking. However, this goal is often not met. Many students struggle with speaking fluently and accurately, showing signs of hesitation and a lack of confidence, which negatively impacts their enjoyment of the learning process (Nadra et al., 2023; Rahayu et al., 2019). Several critical factors contribute to these challenges. Firstly, students often have

difficulty understanding the core concepts of the material, particularly in grammar. Secondly, initiating speech poses a challenge, as many students experience difficulty in finding the right words or ideas to express (Asakereh & Dehghannezhad, 2015). Lastly, traditional teaching methods may fail to engage students, leading to a lack of motivation and enthusiasm in class (Darmuki et al., 2020).

The mind mapping technique, as described by Buzan (2024), offers a potential solution to these issues. Mind mapping promotes creativity, focus, and structured thinking, helping students organize their ideas visually. The use of colors and images in mind maps captures students' attention, making the learning process more engaging and enjoyable (Buran & Filyukov, 2015; Fu et al., 2019). Given its benefits, this research aims to explore the impact of mind mapping on improving students' speaking skills. By employing this technique, students can create simple notes that help them recall key points during conversation, enabling them to speak more fluently and confidently. Additionally, mind mapping adds a dynamic and interactive element to English language learning, making the process more enjoyable and enhancing students' overall motivation (Kim, 2014; Wette, 2017).

Recent studies continue to highlight the effect of mind mapping techniques to improve the speaking abilities of students. For instance, Nadra et al. (2023) found that this approach enhances students' confidence and fluency in speaking, while Darmuki et al. (2020) demonstrated significant improvements in both student engagement and speaking skills through the application of mind mapping. This technique helps students organize their ideas visually, allowing them to speak more coherently and with greater confidence. Thus this study was to determine the use of Mind Mapping in improving students' speaking skill at Indonesian Secondary School.

LITERATURE REVIEW
Speaking

Speaking is one of the aspects in studying English. This aspect is a media for understanding and expressing the information, thoughts and feeling. Speaking is a fundamental skill in language learning, as people primarily use language for communication.

Speaking skill is the ability to convey thoughts, ideas, or emotions to others. The purpose of sharing these ideas is to elicit a response for specific objectives. Richards (2008) emphasizes that achieving proficiency in English speaking skill is a top priority for many foreign-language learners. Successful communication is achieved when there is mutual understanding between speakers and listeners, allowing for an effective exchange of ideas.

Ur cheated by Amalia (2019), highlights several qualities of an effective speaking activity, including:

1. Learners talk a lot: The speaking class provides ample opportunities and stimulation for students to engage in extensive talking, with the teacher facilitating rather than dominating the conversation.
2. Even participation: There is a balanced distribution of speaking opportunities among students, ensuring that no single student monopolizes the discussion. Contributions are fairly distributed throughout the class.
3. High motivation: Students are highly motivated to participate due to engaging topics or materials, innovative teaching techniques, or the desire to contribute to achieving

the class objectives. Motivation plays a key role in driving student participation in speaking activities.

4. Acceptable language level: Students are able to understand each other's speech as they use language that is both relevant and comprehensible. This ensures that communication occurs at an appropriate level of linguistic accuracy and fluency.

However, students often encounter several challenges in speaking activities. According to recent research by Amoah and Yeboah (2021), the primary issues faced by learners include:

1. Inhibition: Speaking, unlike listening, writing and reading, demands active participation from the audience. Many students feel inhibited when trying to express themselves in a foreign language due to fears of making mistakes, being criticized, or simply feeling shy about the attention their speech attracts

2. Nothing to say: Even without inhibition, students frequently report that they struggle to find topics to discuss. They often feel a lack of motivation to express themselves beyond the guilt of knowing they should be speaking.

3. Low and uneven participation: In classroom settings, only one student can speak at a time to be heard. In larger groups, this leads to minimal talking time for each participant. The issue is further exacerbated by the tendency of some students to dominate discussions, while others might say very little or remain completely silent.

4. Use of the native language: In classes where many students share the same native language, they might choose to communicate in their mother tongue because it feels easier and less exposing. This can lead to challenges in encouraging consistent use of the target language, particularly among less motivated or disciplined groups.

Based on this analysis, it can be concluded that inhibition significantly influences the challenges in speaking activities, as fluency is heavily reliant on speaking habits as Hasani(2019) The more students practice, the more fluently they can use the language. However, students should recognize that other factors also play a crucial role. Techniques such as mind mapping can be effective in addressing these issues and enhancing students' speaking skills.

Mind Mapping

The concept of mind mapping was originally introduced by Tony Buzan in the 1970s and is also referred to as Radiant Thinking. Recent studies define mind mapping as a technique for creating creative notes that enhance understanding and retention of information (Kalyanasundaram et al, 2017). By focusing on key ideas expressed in one's own words and exploring branches and connections between those ideas, students can effectively map knowledge, facilitating better understanding and memory retention.

According to Buzan (2024), mind mapping serves as a powerful tool for brainstorming, creative thinking, problem solving, organizing ideas, and note-taking. It enhances the recording of information and supports creative problem solving by visually illustrating how different pieces of information fit together. This visual approach contrasts with traditional note-taking, allowing learners to see the relationships between concepts more clearly.

From those insights, it can be determined that mind mapping significantly eases the

learning process for students, promotes efficient time management, and improves memorization and engagement in speaking activities. Therefore, it can be inferred that mind mapping effectively enhances students' speaking skills.

Mind mapping can be created either by hand as "rough notes" during a learning process, meeting, or planning session, or as more polished diagrams when time permits. According to Buzan (2024), there are seven key steps to creating effective mind maps:

1. Start at the Center: Position the central idea in the middle of the paper. This approach encourages free-thinking and aligns with natural cognitive processes.
2. Incorporate Images: Use pictures or photos for central ideas. The adage "A picture is worth a thousand words" holds true; images help maintain focus and stimulate the brain.
3. Utilize Colors: Colors can engage the brain similarly to images, triggering creative thinking and enhancing memory retention.
4. Create Branches: Draw thick lines extending from the center to represent major ideas, then use thinner lines for associated concepts. Continue to branch out until no further ideas come to mind.
5. Use Curved Lines: Opt for curved lines instead of straight ones to keep the brain engaged and avoid monotony.
6. Limit to One Word per Line: Each word carries numerous associations, so using one word allows for greater freedom in linking thoughts and ideas.
7. Maximize Visual Elements: Incorporate as many images as possible, reinforcing the idea that visual representation enhances understanding.

Based on these steps, it can be determined that mind mapping should be interesting, colorful, and enjoyable in facilitating effective learning.

METHOD

This study employed an experimental design that involved administering both a pre-test and a post-test. A treatment was conducted between these two assessments, occurring after the pre-test. Data were analyzed descriptively by comparing the results of the pre-test and post-test to determine whether there was an improvement in students' speaking abilities following the treatment.

FINDINGS AND DISCUSSION

1. Students' Score in Accuracy

Table 1. The Frequency and percentage in accuracy of students' speaking skill both the pre-test and post-test were presented in the table below.

No	Classification	Pre-test		Post-test	
		Frequency	Percentage	Frequency	Percentage
1	Excellent	0	0.00	9	30.00
2	Good	0	0.00	10	33.33
3	Average	21	70.00	8	60.71

4	Poor	7	23.33	3	26.66
5	Very Poor	2	6.66	0	0.00
	Total	30	100	30	100

The results of the pre-test on students' speaking accuracy reveal that none of the students achieved an excellent or good classification. Specifically, 21 students (70.00%) were categorized as average, 7 students (23.33%) fell into the poor category, and 2 students (6.66%) were classified as very poor. In contrast, the post-test results showed significant improvement: 9 students (30.00%) achieved an excellent classification, 10 students (33.33%) were rated as good, 3 students (26.66%) remained in the poor category, and no students were classified as very poor.

Table 2. The mean and classification scores in accuracy of students' speaking skill both the pre-test and post-test were presented in the table below.

No	Test	Mean	Classification
1	Pre-test	2.63	Poor
2	Post-test	3.83	Average
Gain		1.20	

The students' mean score in accuracy in the pre-test was 2.63, which is classified as poor. After treatment, students' mean score in the post-test improved to 3.83, placing it in the average category. This shows a gain of 1.2 points, indicating a notable improvement in students' speaking accuracy following the intervention.

2. Students' Score in Fluency

Table 3. The frequency and percentage of the students' speaking fluency in both the pre-test and post-test were presented in the table below

No	Classification	Pre-test		Post-test	
		Frequency	Percentage	Frequency	Percentage
1	Excellent	0	0.00	17	56.66
2	Good	6	20.00	9	30.00
3	Average	20	66.66	3	10.00
4	Poor	3	10.00	1	3.33
5	Very Poor	1	3.33	0	0.00
		30	100	30	100

The results of fluency in the pre-test indicate that none of the students achieved an excellent classification. Specifically, 6 students (20.00%) received a good classification, 20 students (66.66%) were rated as average, 3 students (10.00%) fell into the poor category, and 1 student (3.33%) received a very poor classification.

In contrast, the post-test results showed significant improvement: 17 students

(56.66%) achieved an excellent classification, 9 students (30.00%) were classified as good, and only 3 students (10.00%) remained in the poor category. Notably, no students received a very poor classification in the post-test. This demonstrates a clear enhancement in students' speaking fluency following the intervention.

Table 4. The Mean and Classification scores in Fluency of students' speaking skill both the Pre-test and Post-test were presented in the table below.

No	Test	Mean	Classification
1	Pre-test	3.03	Average
2	Post-test	4.4	Good
Gain		**1.37**	

The mean score of the students in the pre-test was 3.03, which is classified as average, while the mean score in the post-test increased to 4.4, categorizing it as good. This indicates a gain of 1.37 points in students' fluency, signifying a notable improvement following the intervention.

3. Students' Score in Comprehensibility

Table 5. The Frequency and Percentage of the students' speaking comprehensibility both the pre-test and post-test were presented in the table below

No	Classification	Pretest		Posttest	
		Frequency	**Percentage**	**Frequency**	**Percentage**
1	Excellent	0	0.00	14	46.66
2	Good	13	43.33	8	26.66
3	Average	15	50.00	7	23.33
4	Poor	1	3.33	1	3.33
5	Very Poor	1	3.33	0	0.00
	Total	30	100	30	100

The results of students' speaking comprehensibility in the pre-test reveal that none of the students achieved an excellent classification. Specifically, 13 students (43.33%) received a good classification, 15 students (50.00%) were rated as average, 1 student (3.33%) fell into the poor category, and another student (3.33%) was classified as very poor.

In contrast, the post-test results showed a marked improvement: 14 students (46.66%) attained an excellent classification, 8 students (26.66%) received a good classification, and 7 students (23.33%) remained in the poor category, while none of the students were classified as very poor. This indicates a significant enhancement in the comprehensibility of students' speaking abilities following the intervention.

Table 6. The Mean and classification score in comprehensibility of students' speaking skill bot the pre-test and post-test were presented in the table below.

No	Test	Mean	Classification
1	Pre-test	3.33	Average
2	Post-test	4.16	Good
Gain		0.83	

The mean score of students in the pre-test was 3.33, which is classified as average, while the mean score in the post-test increased to 4.16, categorizing it as good. This indicates a gain of 0.83 points in students' comprehensibility, signifying a notable improvement following the intervention.

4. The Frequency and Percentage of Pre-test and Post-test

Table 7. The frequency and percentage of pre-test and post-test were presented in the table below.

No	Classification	Pre-test		Post-test	
		Frequency	Percentage	Frequency	Percentage
1	Excellent	0	0.00	14	46.67
2	Good	14	46.67	8	26.67
3	Average	14	46.67	7	23.33
4	Poor	1	3.33	1	3.33
5	Very Poor	1	3.33	0	0.00
	Total	30	100	30	100

The pre-test results indicate that none of the students achieved an excellent classification. Specifically, 14 students (46.67%) received a good classification, another 14 students (46.67%) were rated as average, while 1 student (3.33%) fell into the poor category, and 1 student (3.33%) was classified as very poor.

In the post-test, 14 students (46.67%) attained an excellent classification, 8 students (26.67%) received a good classification, 7 students (23.33%) were rated as average, and only 1 student (3.33%) fell into the poor category, with none classified as very poor.

The percentage and frequency of students' scores in the pre-test were lower than those in the post-test, indicating a significant improvement in students' speaking skills through the use of mind mapping.

5. Mean Score and Standard Deviation

Table 8. The mean score and standard deviation in pre-test and post-test were presented in the table below.

Test	Mean Score	Standard Deviation
Pre-test	9.03	1.8
Post-test	12.40	2.5

The students' mean score in the pre-test was 9.03, with a standard deviation of 1.8, while the mean score in the post-test increased to 12.40, accompanied by a standard deviation of 2.5. This indicates that the mean score in the pre-test was lower than that in the post-test, demonstrating a positive effect of mind mapping as a treatment on students' speaking skills.

6. The T-Test Value of Students' Pretest and Post-test
Table 9. A T-test was conducted at a 0.05 significance level with degrees of freedom (df) = n-1 to examine if there was a difference between the mean scores of students' pre-test and post-test. The table below shows the calculation results.

T-test	T-table
12.59	2.045

The data show that the T-test value was 12.59, while the T-table value was 2.045. Because the T-test value is exceeds the T-table value, it can be concluded that the difference between the pre-test and post-test scores is significant. This result suggest that using mind mapping significantly improved the students' speaking skills.

DISCUSSION

Before administering the treatment, the pre-test was conducted to assess the students' prior speaking abilities. Each student was given a topic and sufficient time to prepare their presentation, with the expectation that they would speak for approximately one to three minutes. The scores indicated that the percentage and frequency of students' speaking performance in the post-test were significantly higher than in the pre-test.

Regarding speaking accuracy, the findings revealed that the pre-test mean score was 2.63, classified as poor, while the post-test mean score improved to 3.83, classified as average, resulting in a gain of 1.2 points. The mean score in the post-test was notably higher than in the pre-test, indicating a shift from poor to average classification. The writer identified several factors affecting students' speaking accuracy, including reliance on their mother tongue, mispronunciation, grammatical errors, and limited vocabulary. Following the treatment, students demonstrated improved performance, presenting for longer durations in the post-test and successfully reducing their grammatical errors.

In terms of speaking fluency, the pre-test score was 3.03, classified as average, whereas the post-test score increased to 4.4, classified as good, yielding a gain of 1.37. The mean score in the post-test exceeded that of the pre-test, suggesting that students' speaking fluency had improved. Initially, some students displayed unnatural pauses; however, the mind mapping technique provided them with the opportunity to speak more quickly and systematically. By enabling students to take notes on key points, they were better able to recall and articulate their thoughts, leading to a more relaxed and fluid speaking style.

For speaking comprehensibility, the pre-test mean score was 3.33, classified as average, while the post-test score rose to 4.16, classified as good, resulting in a gain of 0.83. This indicates that students' speaking comprehensibility improved following the treatment, moving from an average classification in the pre-test to a good classification in the post-test.

The writer noted that some students initially struggled to construct their sentences systematically, but their comprehensibility enhanced significantly after the intervention.

In summary, the analysis reveals that students' scores in accuracy, fluency, and comprehensibility were all higher in the post-test compared to the pre-test. Specifically, the improvements were 1.2 points in accuracy, 1.37 points in fluency, and 0.83 points in comprehensibility, with fluency showing the greatest enhancement.

Throughout the treatment, the writer observed that students had numerous opportunities to speak more systematically and rapidly. They displayed enthusiasm for creating mind maps and studying English, which allowed them to express their creativity before speaking. The language produced during the treatment sessions was generally more natural and authentic.

The results indicate a significant difference between the mean scores of the pre-test and post-test, with the post-test mean score (4.16) surpassing that of the pre-test (3.33), resulting in a gain of 0.83 points. The standard deviation for the pre-test was 1.8, while the post-test showed an increased standard deviation of 2.5, indicating greater variability in post-test scores. The t-test value was calculated at 12.59, compared to a t-table value of 2.045, confirming the statistical significance of the results since the t-test exceeded the t-table value.

In conclusion, the findings of this research demonstrate that the implementation of mind mapping significantly improved the students' speaking skills.

CONCLUSION

The implementation of mind mapping as a teaching strategy has significantly enhanced the students' speaking skills. The research findings indicate notable improvements in students' speaking accuracy, fluency, and comprehensibility following the treatment. Specifically, the mean scores for accuracy increased from 2.63 (poor) in the pre-test to 3.83 (average) in the post-test, resulting in a gain of 1.2 points. Fluency also showed substantial improvement, with scores rising from 3.03 (average) in the pre-test to 4.4 (good) in the post-test, yielding a gain of 1.37 points. Comprehensibility improved from a mean score of 3.33 (average) in the pre-test to 4.16 (good) in the post-test, reflecting a gain of 0.83 points.

The results highlight that the use of mind mapping not only facilitated systematic thinking and organization of ideas but also encouraged students to express themselves more naturally and confidently. Students displayed increased enthusiasm for speaking activities and were able to articulate their thoughts without unnatural pauses. The statistical analysis, which included a significant t-test value of 12.59 compared to the t-table value of 2.045, further supports the effectiveness of the treatment.

In summary, the findings of this research underscore the positive impact of mind mapping on improving students' speaking skills, suggesting that this technique can be a valuable tool in language education. Future studies could explore the long-term effects of mind mapping and its applicability in different educational contexts.

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HALAMAN INI SENGAJA DIKOSONGKAN