

Strategies for Improving Reading Comprehension of Descriptive Texts through Mind Mapping

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Abstract

Reading comprehension requires students to understand textual information and organize relationships among main ideas, supporting details, and text structure. This classroom action research investigated the use of mind mapping to improve tenth-grade students' comprehension of descriptive texts. Participants were 26 students from Class X IPS at Madrasah Aliyah Islamiyah Pontianak during the 2024/2025 academic year. The study employed Burns' action research framework across two cycles of planning, action, observation, and reflection. Data were collected through reading comprehension tests, an observation checklist, and field notes, and analyzed using descriptive statistics and qualitative thematic summaries. Results showed progressive improvement, with mean scores increasing from 57.5 in the preliminary study to 70.8 in Cycle I and 81.7 in Cycle II. The proportion of students achieving mastery also increased from 26.9% (7/26) to 57.7% (15/26) and 84.6% (22/26), respectively. Improvements in Cycle II followed more explicit teacher modeling, vocabulary support, guided practice, and individual mind-map construction. These findings suggest that mind mapping can support students in selecting, organizing, and connecting information when comprehending descriptive texts. However, improvements cannot be attributed exclusively to mind mapping, as repeated practice and additional instructional support may have contributed. Given the single-class, two-cycle design, the findings are context-specific. Overall, mind mapping is a potentially useful strategy when accompanied by appropriate scaffolding and guided practice.

Keywords: Descriptive text, Mind mapping, Reading comprehension, Classroom action research, Secondary education.

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I. INTRODUCTION

Reading comprehension is an essential component of English language learning at the secondary-school level because it enables students to construct meaning from written texts and supports the development of broader academic and communicative abilities. Effective reading involves more than recognizing linguistic forms; students must identify relevant information, understand relationships among ideas, and interpret how information is organized within a text (Taye & Teshome, 2025). These abilities are particularly important when students encounter descriptive texts, which require them to distinguish main ideas from supporting details and understand how these elements contribute to the overall meaning of the text. Reading comprehension is therefore a fundamental academic skill that supports students in interpreting and evaluating information and developing effective learning and critical-thinking abilities (Aprilia, 2019).

Despite its importance, reading comprehension remains challenging for many students. The preliminary investigation conducted at Madrasah Aliyah Islamiyah indicated that tenth-grade students experienced difficulties in identifying main ideas and supporting details in descriptive texts. These difficulties are particularly relevant to the characteristics of descriptive texts, which are intended to describe people, places, objects, or animals in ways that enable readers to construct a clear representation of the subject being described (Nopita et al., 2021). Structurally, descriptive texts generally consist of identification, which introduces the subject, and description, which provides its characteristics or supporting information. When students are unable to recognize these structural components, distinguish central information from details, or organize multiple pieces of descriptive information, their ability to construct a coherent understanding of the text may be disrupted. Addressing these difficulties requires an instructional strategy that helps students identify, organize, and connect important information rather than merely read and recall textual content. Mind mapping offers one such approach by transforming information from a linear text

into a visual representation organized around a central idea. Through this representation, students can distinguish the main idea from supporting details and visualize relationships among pieces of information. Hendrita and Dewi (2021) reported that mind mapping can support students' comprehension of descriptive texts by helping them visualize concepts, structure key information, and organize supporting details systematically. These characteristics make mind mapping potentially relevant to the specific comprehension difficulties identified in the preliminary investigation.

The instructional rationale for mind mapping lies in its capacity to transform linear information into a hierarchical and associative representation. A central topic forms the core of the map, major ideas are represented as primary branches, and supporting information is organized into subordinate branches. Such organization may reduce the need to retain disconnected details in working memory while directing attention toward relationships among propositions and providing retrieval cues through spatial organization, keywords, and visual connections (Buzan, 2018; Farrand et al., 2002). In reading instruction, mind mapping therefore serves not merely as a visual presentation technique but as an external representation that can support three important cognitive processes: selecting relevant information, organizing information hierarchically, and connecting related details into a coherent representation of the text.

Previous studies have generally reported positive outcomes associated with mind mapping in reading instruction. Mohaidat (2018) found that electronic mind maps supported reading comprehension, while Hendrita and Dewi (2021) and Nopita et al. (2021) reported improvements in Indonesian EFL contexts. Hazaymeh and Alomery (2022) further associated visual mind mapping with reading ability and critical thinking. However, the existing studies vary in educational level, text type, mode of implementation, and outcome measures. More importantly, improvements in reading scores do not necessarily demonstrate that mind mapping alone produced the observed gains. Teacher guidance, vocabulary support, repeated exposure to texts, and collaborative practice may also contribute to students' improvement. Consequently, there remains a need to examine not only whether students improve after mind mapping is introduced but also how the instructional implementation is refined in response to students' difficulties during classroom practice.

The present study addresses this contextual and procedural gap by examining the implementation and refinement of mind mapping across two classroom action research cycles in a tenth-grade descriptive-text lesson. Rather than treating mind mapping as a fixed intervention, the study documents how classroom reflection informed instructional adjustments from Cycle I to Cycle II. The refinement involved a transition from group-based, teacher-guided mapping toward more explicit teacher modeling, vocabulary support, extended guided practice, and individual mind-map construction. This iterative process provides an opportunity to examine how mind mapping operates within a broader instructional process and how adjustments made between cycles correspond with changes in students' comprehension and classroom participation.

Accordingly, this study aimed to describe how the implementation and refinement of mind mapping across two classroom action research cycles supported tenth-grade students' reading comprehension of descriptive texts. Specifically, the study examined changes in (a) reading comprehension test performance and mastery, (b) students' ability to identify main ideas and supporting details, and (c) students' observable participation during the learning process. By focusing on both learning outcomes and the iterative refinement of classroom instruction, the study seeks to provide context-specific evidence regarding the use of mind mapping as a strategy for supporting descriptive-text comprehension.

II. METHOD

The study employed Classroom Action Research using Burns' (2009) cyclical model, which consists of planning, action, observation, and reflection. The model was chosen because the study sought to improve an identified classroom practice through iterative implementation and evidence-based revision rather than to test a decontextualized causal effect. One preliminary assessment and two action cycles were conducted. The English teacher and researcher collaborated in planning the lessons, implementing or observing the action, analyzing evidence, and deciding whether the success criterion had been met.

The research was conducted at Madrasah Aliyah Islamiyah Pontianak during the 2024/2025 academic year. Participants were all 26 students enrolled in Class X IPS. The class was selected purposively because the preliminary assessment showed low reading-comprehension achievement and because mind mapping had not previously been used by the English teacher in this class. The unit of intervention was therefore an intact class; no random sampling or random assignment was applied. This sampling decision is appropriate for classroom action research but limits the transferability of the findings beyond the participating class.

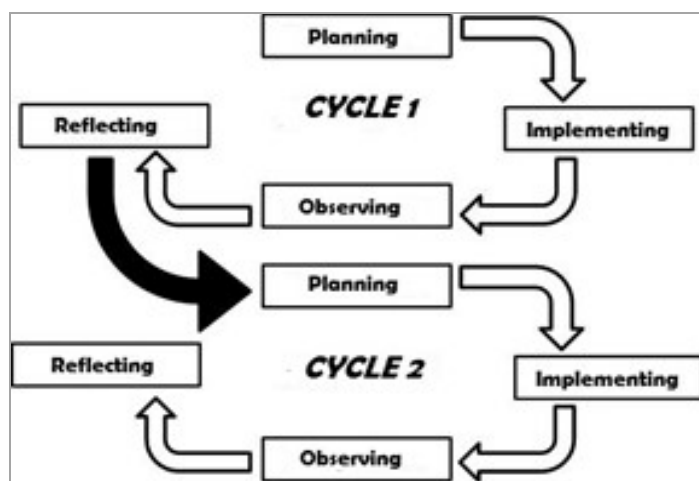


Figure 1. Four Stages in Classroom Action Research

The preliminary stage involved classroom observation and a reading-comprehension test based on a descriptive text titled "Rowan Atkinson." The results were used to identify the main instructional problems and establish the baseline mean and mastery rate. Cycle I began with lesson planning, preparation of descriptive texts, examples of mind maps, a reading test, an observation checklist, and field-note prompts. During the action stage, the teacher introduced the purpose and structure of descriptive texts, explained the elements of a mind map, modeled how to place the topic at the center, and demonstrated how main ideas and supporting details could be converted into branches. Students then worked in groups based on seating position to construct mind maps from the assigned text. The teacher circulated, clarified vocabulary and procedures, and guided groups that had difficulty organizing information. Observation focused on attention, participation, collaboration, task completion, and students' ability to distinguish main ideas from details. The cycle ended with an individual comprehension test and a joint reflection on test results, observation evidence, vocabulary difficulties, time use, and problems in converting text into visual branches.

Cycle II was planned in response to Cycle I. The intervention retained mind mapping but added clearer worked examples, more explicit think-aloud modeling, vocabulary support before and during reading, guided practice in separating main ideas from subordinate details, and more time for map construction. Students then created individual rather than exclusively group mind maps so that each learner's comprehension could be assessed more directly. The cycle concluded with a second individual reading-comprehension test, observation, field-note review, and reflection against the predetermined success criterion.

Three instruments were used: reading-comprehension tests, an observation checklist, and field notes. The tests assessed comprehension of descriptive texts. To align the items with the research focus, the test blueprint should classify each item under the indicators of (1) identifying the main idea, (2) locating explicit supporting details, (3) recognizing text structure, (4) interpreting vocabulary or reference in context, and (5) making a limited inference from the text. Each correct response received one point and each incorrect response received zero; the raw score was converted to a 0–100 scale using: $\text{score} = (\text{number of correct answers} / \text{total number of items}) \times 100$.

The observation checklist recorded visible classroom behaviors relevant to implementation, including attention to teacher modeling, contribution to discussion, correct use of mind-map

components, completion of assigned branches, and independent task engagement. Field notes documented events not adequately captured by fixed checklist categories, such as vocabulary-related confusion, requests for assistance, time-management problems, and students' comments about the strategy. Checklist totals should be converted into percentages, while field notes should be coded under recurring categories and compared across cycles. The action was considered successful when (a) the class mean reached at least the school KKM of 75, (b) at least 80% of students achieved a score of 75 or higher, and (c) observation and field-note evidence showed improved ability to identify and organize main ideas and supporting details with reduced teacher assistance. Cycle I did not meet all criteria because the mean was 70.8 and mastery was 57.7%. Cycle II met the quantitative criteria with a mean of 81.7 and mastery of 84.6%.

Quantitative data were analyzed descriptively. For each stage, the analysis calculated the class mean and the number and percentage of students who reached the KKM. Improvement was examined by comparing the preliminary study, Cycle I, and Cycle II. Item-level results should also be grouped by reading indicator rather than labeled only "TRUE" and "FALSE"; in this manuscript, "correct" means the number of students answering an item accurately, whereas "incorrect" means the number answering inaccurately. Qualitative data from the observation checklist and field notes were reduced into recurring categories, compared across cycles, and used to explain why the action was continued or modified. Because the study lacked a comparison group and inferential design, the analysis does not claim statistical causality.

III. RESULTS AND DISCUSSION

A. Results

This Classroom Action Research was conducted to improve the reading comprehension of tenth-grade students at Madrasah Aliyah Islamiyah Pontianak through the mind mapping strategy. The findings are based on qualitative and quantitative data collected during two cycles of action. The observations revealed that students struggled particularly with identifying main ideas, understanding text structure, and interpreting detailed information. To measure students' initial abilities, the researcher administered the first reading comprehension test using a descriptive text titled "Rowan Atkinson." After completing the reading, the students were given production tasks, which served as the final assessment of their engagement in the teaching and learning process. After the students finished the test, their responses were analysed to understand the distribution of correct and incorrect answers.

The analysis indicated relatively strong performance on questions requiring the simple identification of main ideas, where most students answered correctly. However, performance declined significantly on items that required a deeper understanding and scanning for specific details. The results indicated that most students scored below the minimum achievement standard.

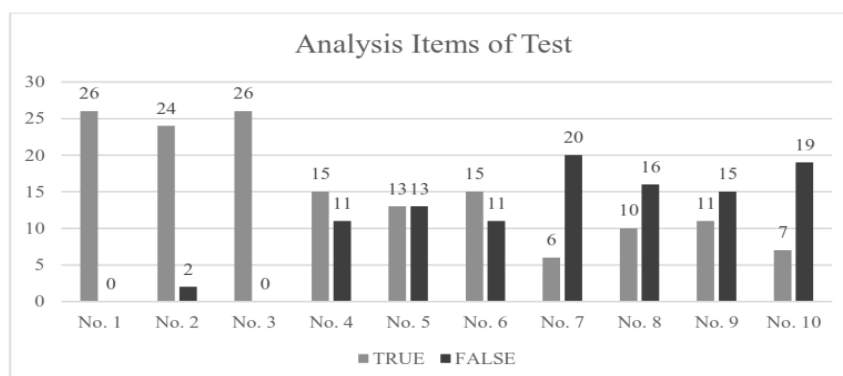


Figure 2. Analysis Items of Test

The results showed that students' scores varied widely, and the class mean of 57.5 demonstrated that most students had not yet reached the Minimum Mastery Criterion (75). Only seven of the 26 students achieved the required standard. These results confirmed that the

reading comprehension skills of most students in the tenth-grade class at Madrasah Aliyah Islamiyah Pontianak were still relatively low. Therefore, the researcher decided to use mind mapping to improve their reading comprehension.

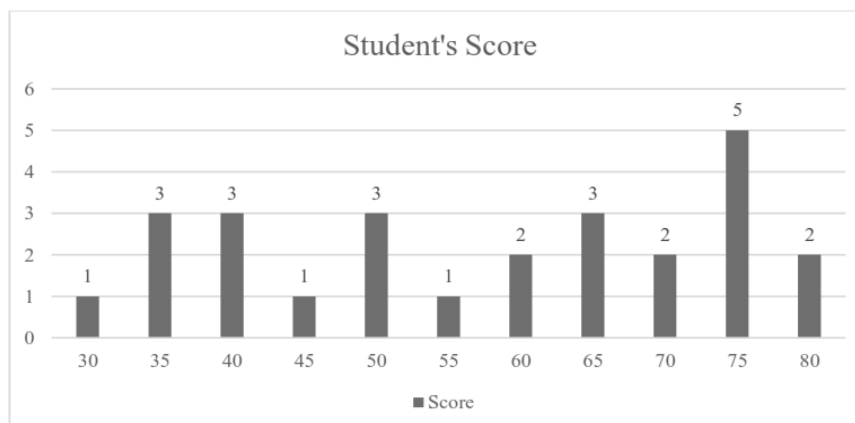


Figure 3. Students' Score

1. Result for Cycle I

Cycle I consisted of four stages: planning, action, observation, and reflection. The planning stage of Cycle I involved designing a learning plan that incorporated the mind mapping technique as a strategy to improve students' reading comprehension of descriptive text. Additionally, the researcher and teacher decided to group students based on their seating positions to facilitate easier classroom management. The researcher explained the basic concept of mind mapping, presented sample mind maps, and demonstrated how information from a text can be visually organized using mind mapping. During the activity, the researcher provided guidance to students who encountered difficulties and ensured that each group understood the steps involved in creating a mind map.

At the end of the cycle, students completed a reading comprehension test to determine whether the mind mapping activity had improved their performance.

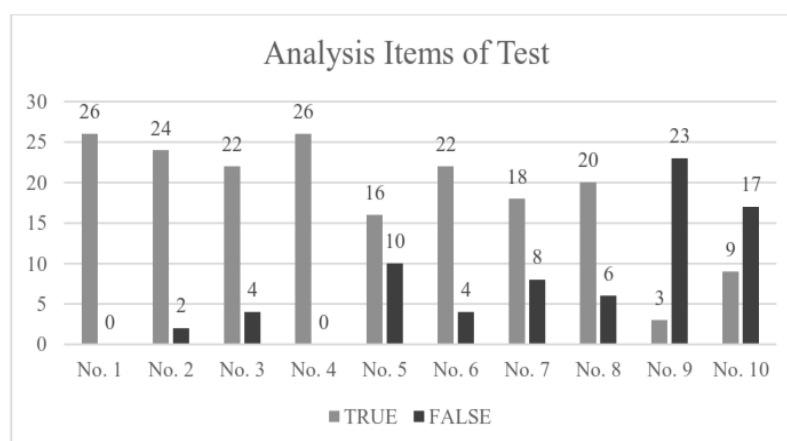


Figure 4. Cycle I Analysis Items of Test

The analysis revealed improvement in several question categories. Items relating to identifying the main idea were answered correctly by a large majority of students. However, questions requiring interpretation of meaning and identifying the details of the text, or deeper analysis, still resulted in notable errors. The mean score rose to 70.8, and 58% of the students met the mastery standard. These results indicated improved comprehension, but not to the level expected for concluding the action research.

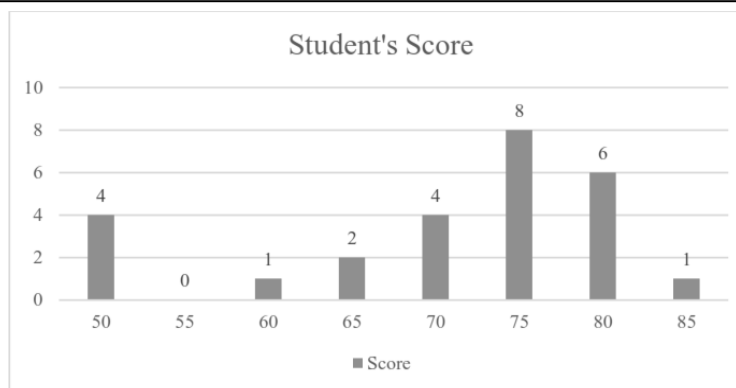


Figure 5. Cycle I Students' Score

The observation stage was carried out during the implementation of the action. The observations revealed that the use of mind mapping had a positive influence on students' learning activities. However, many students still struggled to fully understand the details of descriptive text, primarily due to their limited vocabulary. Others struggled to convert information into a mind map because they were not yet comfortable with the visual organization of ideas. Time management also became a problem, as many groups needed more time than expected to finish their mind maps. The reflection stage was conducted after all actions in Cycle I were completed. The reflection indicated that the mind mapping technique was effective in increasing students' participation and improving the reading comprehension of some learners. However, several issues required attention in the next cycle.

2. Result for Cycle II

The next cycle was designed to address the weaknesses identified in Cycle I. Therefore, the researcher decided to continue using mind mapping in Cycle II. Based on the reflections from Cycle I, the researcher prepared improvements for Cycle II to address the remaining challenges in students' reading comprehension. The primary focus of this cycle was to strengthen students' understanding of descriptive texts by providing more structured guidance, additional vocabulary support, and extended practice in constructing mind maps. The researcher then reintroduced the mind mapping technique, but with clearer examples and more explicit guidance. Students responded positively, expressing that mind mapping helped them comprehend reading materials more easily, as reflected in their improved ability to answer comprehension questions. Students then created individual mind maps, enabling the researcher to assess each learner's comprehension more accurately.

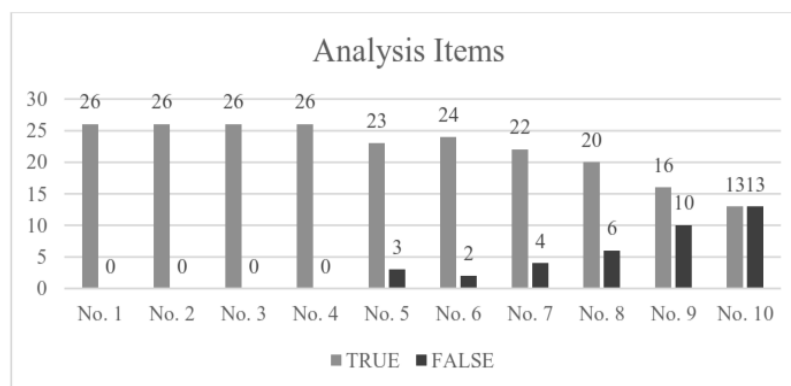


Figure 6. Cycle II Analysis Items

The analysis showed substantial improvement compared with Cycle I. Most students answered nearly all items correctly, with only a few errors appearing in questions that required deeper inferential understanding.

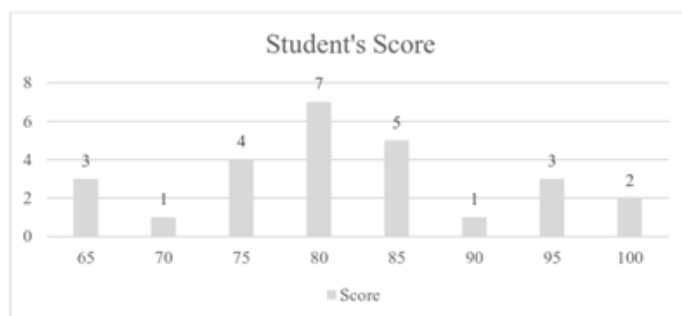


Figure 7. Cycle II Students' Score

The test results showed an improvement in students' scores and increased student engagement. The total score of 2125, with 22 out of 26 students achieving scores at or above the KKM, resulting in a mean score of 81.7. This indicates a significant improvement in student performance, with 85% of students meeting or exceeding the mastery criterion.

Observation results revealed notable improvements in students' behaviour and performance compared to Cycle I. Students appeared more active during discussions, more attentive during the lesson, and more independent in completing their tasks. The additional vocabulary support helped them understand the texts more easily, resulting in more accurate and well-organized mind maps. Qualitative data showed that students were able to identify main ideas and supporting details with fewer difficulties. The test results in Cycle II demonstrated a substantial increase in students' reading comprehension. A greater number of students achieved scores above the Minimum Mastery Criterion, and the overall mean score increased compared to Cycle I. The data below reveal a consistent improvement in students' mean scores.

Despite overall improvements, some challenges persisted. A few students still struggled with vocabulary, particularly those who did not bring dictionaries to class, which was approximately 6 students. The researcher concluded that consistently reminding students to bring dictionaries could help address this issue.

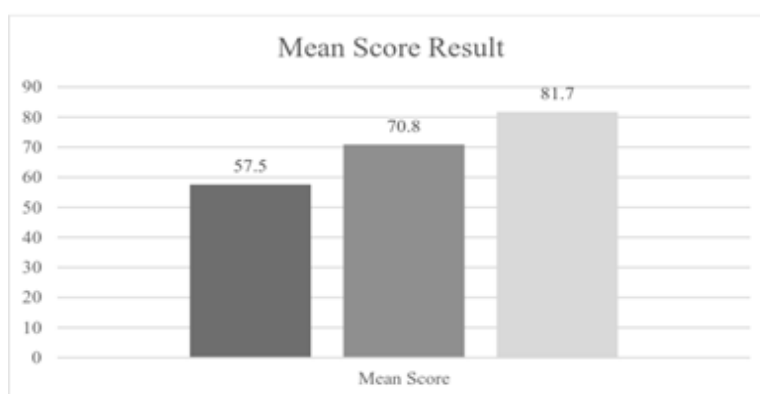


Figure 8. Mean Score Results

The reflection stage for Cycle II indicated that the actions taken were successful in addressing the challenges encountered in Cycle I. The researcher concluded that the mind mapping strategy effectively supported students in organizing information and understanding key content in reading passages. The challenges identified in the previous cycle, such as limited vocabulary, difficulty extracting main ideas, and the need to process detailed information, as well as classroom management issues, were substantially mitigated in this cycle. The results demonstrated that mind mapping was an effective technique for improving students' reading comprehension, particularly in understanding the main idea and detailed information of descriptive texts.

B. Discussion

The implementation of the mind mapping technique across the cycles of this classroom action research demonstrated a consistent and measurable improvement in students' reading comprehension. The progression observed from the initial to the final test results provides clear evidence that mind mapping effectively supports students in organizing information and understanding descriptive texts, particularly in identifying main ideas, supporting details, and text structure more coherently. As emphasized by Buzan (2018), mind mapping facilitates associative thinking by enabling learners to categorize, connect, and recall information through visually structured representations. This mechanism was likewise evident in the present study, as students increasingly demonstrated the ability to construct mental and visual representations of the texts engaged with.

Throughout the two research cycles, the students exhibited not only improved test performance but also notable changes in behavioral indicators, including increased engagement, confidence, and willingness to participate in classroom activities. This development aligns with the model of Classroom Action Research by Burns (2009), which argues that cycles of planning, action, observation, and reflection enable continuous pedagogical refinement that responds directly to emerging instructional needs. In the first cycle, the students initially struggled to identify supporting details and translate these into coherent visual branches. However, following reflective evaluation, the researcher introduced guided practice and explicit teacher modeling in the second cycle. These adjustments led to more detailed and accurate mind maps, which were reflected in improved comprehension scores.

The qualitative data collected during the research further supports the conclusion that mind mapping created a more engaging and collaborative learning environment. Students showed increased attentiveness and displayed greater enthusiasm for participating in discussions and group activities. This change aligns with Vygotsky's sociocultural theory (1978), which suggests that cognitive development occurs through meaningful social interaction (Muhayimana, 2017). During collaborative mind-mapping activities, students shared ideas, clarified their understanding of concepts, and worked together to support each other's meaning-making processes. This interaction required students to articulate their thoughts verbally, which reinforced their understanding of the reading materials.

The improved results across cycles are also consistent with previous studies reporting the positive impact of mind mapping on reading comprehension. Hendrita & Dewi (2021) found that mind mapping helps students identify main ideas and supporting details by enabling them to visualize information in a structured format. This study corroborates their findings, as students became more proficient in identifying the components characteristic of descriptive texts, including identification and description. Ramadhan et al. (2014) noted that students' comprehension is often hindered by limited vocabulary and low motivation. By using mind mapping, students can visualize words and concepts, making the reading experience more engaging and less tedious. In this research, mind mapping helped mitigate these barriers by making vocabulary more memorable through repeated and meaningful visual associations. The results similarly align with Mohaidat (2018), who concluded that students taught using mind mapping achieved better reading comprehension. The present study confirmed similar findings, as students not only improved their reading comprehension scores but also increased confidence and engagement. This demonstrates that mind mapping helps students to organize descriptive text content into main topics, characteristics, and supporting details with precision and clarity.

Mind mapping also contributed to cultivating a learning environment that fostered learner autonomy and self-regulation. Rasul et al. (2023) emphasizes that reading instruction becomes more meaningful when learners actively construct meaning rather than passively receive information. In the context of this research, the requirement for students to produce their own mind maps encouraged purposeful reading, the identification of information, and the visual organization of content to facilitate comprehension. This process of active meaning leads to consistent improvement in the students' reading comprehension.

Overall, the mind mapping strategy, implemented within the structured cycles of classroom action research, effectively improves students' reading comprehension. It confirms that mind mapping is an effective and innovative instructional strategy for enhancing reading comprehension in Indonesian EFL classrooms, particularly in facilitating students' understanding of main ideas, supporting details, and the structural components of descriptive texts.

IV. CONCLUSION

Within the context of one tenth-grade class, reading-comprehension performance improved across the preliminary study and two action cycles. The mean increased from 57.5 to 70.8 and then to 81.7, while mastery increased from 26.9% to 57.7% and 84.6%. Cycle II met the proposed success criteria after the intervention was strengthened through clearer modeling, vocabulary support, guided practice, and individual mind-map construction. The findings indicate that mind mapping can help students organize main ideas and supporting details in descriptive texts when it is embedded in explicit and responsive instruction.

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