THE IMPLEMENTATION OF I-THINK MAPPING
IN STUDENTS' READING COMPREHENSION

(An Undergraduate Thesis)

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ABSTRACT

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By

Aqila Oktavia Indriyani

Reading comprehension is a fundamental skill in English language learning, but many students struggle due to ineffective teaching methods. This quantitative research examines the implementation of I-Think mapping in students' reading comprehension. This study employed a one-group pretest-posttest design to examine the impact of I-Think mapping, a visual learning strategy, on students' reading comprehension. The research involved thirty ninth-grade students from SMP 3 Al Azhar Bandar Lampung. The students participated in a pre-test, three treatment sessions, and a post-test. The data were analyzed using the Wilcoxon T Test to evaluate improvements of reading comprehension. The findings show significant improvement, with the mean score increased from 57.88 to 63.01 and a normalized gain of 0.207. The results indicate that I-Think mapping improves students' reading comprehension and critical thinking skills, particularly in understanding descriptive texts.

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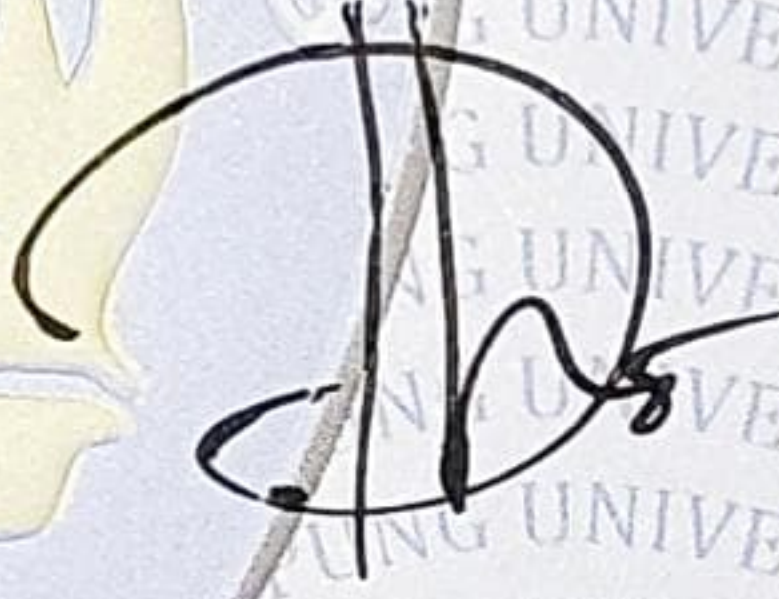Faculty : **Teacher Training and Education**

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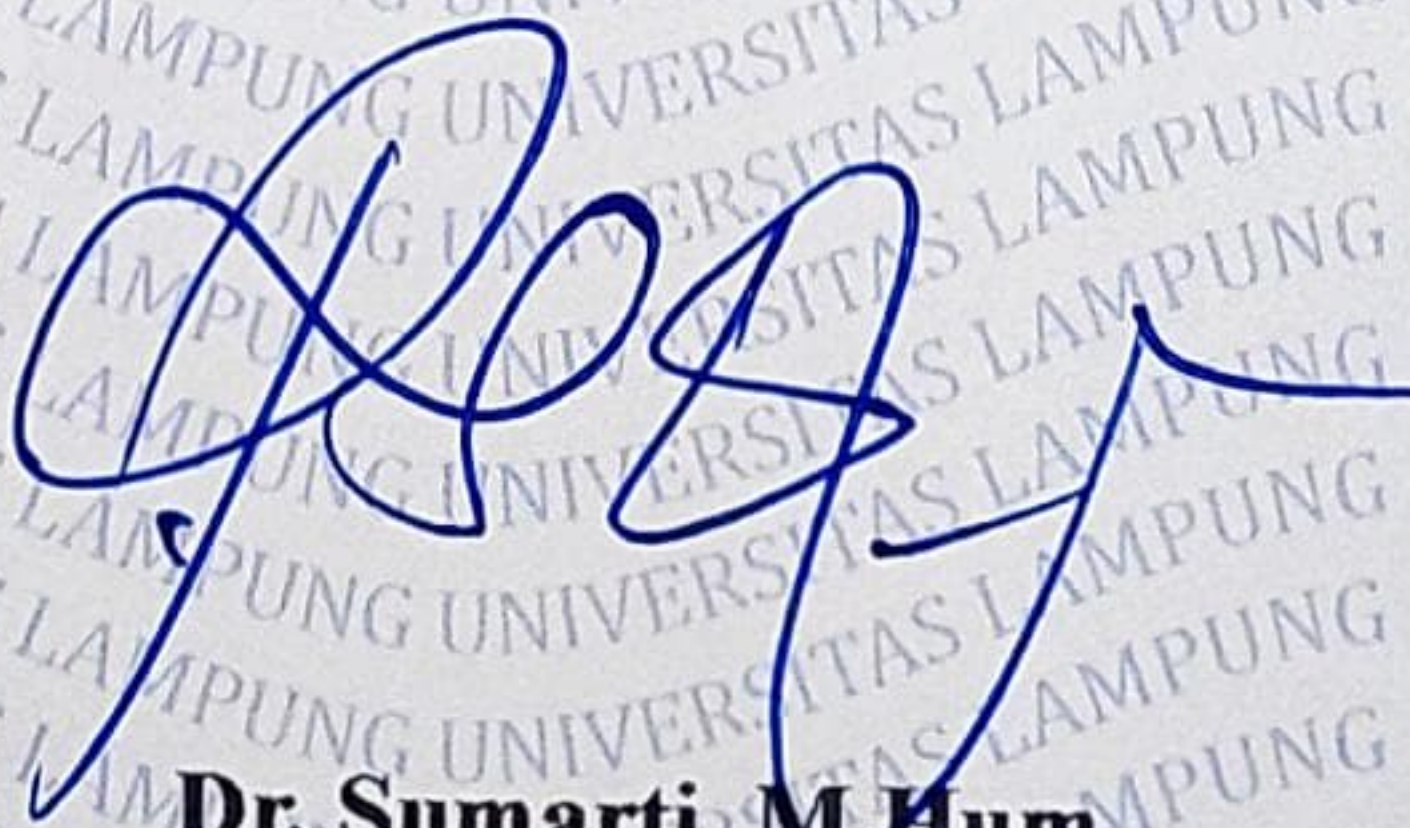
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Menyatakan bahwa skripsi ini adalah hasil karya saya sendiri. Sepanjang pengetahuan saya, karya ini tidak berisi materi yang ditulis orang lain, kecuali bagian-bagian tertentu yang saya gunakan sebagai acuan. Apabila ternyata terbukti bahwa pernyataan ini tidak benar, sepenuhnya menjadi tanggung jawab saya.

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CURRICULUM VITAE

Aqila Oktavia Indriyani was born on October 3rd, 2002, in Bandar Lampung. She is the cherished daughter of Sanjaya and Aan Indriyani. She has one older sister, two older brothers, one younger brother, and two younger sisters.

Her formal education began at a kindergarten in Pringsewu, before moving to TK Nurul Islam, then continued at SD Negeri 1 Gunung Sari, where she graduated in 2014. She continued her studies at SMP 2 Ulubelu, and graduated in 2017. For high school, she attended SMA Negeri 2 Pringsewu and graduated in 2020. After completing high school, she took a one-year gap to explore her options and prepare for her next step. In 2021, she successfully passed the SBMPTN selection and was admitted to the English Education Department at Lampung University.

Upon entering the English Education Study Program, she also joined Society of English Education Department Students for two semesters. Within the organization, she contributed as a member of the Public Relations division, where she not only helped manage the organization's external communication but also played an active role in designing and executing various programs. This experience honed her skills in communication, negotiation, and working within a dynamic team. In addition, she took part in the Kuliah Kerja Nyata (KKN). This experience gave her a broader perspective on the challenges and potential of the community, while also improving her managerial and problem-solving skills. Furthermore, she completed the Program Pengenalan Lapangan Sekolah (PLP), a field introduction program in education. Through this program, she gained practical experience in the school environment, interacting with students and teachers, and applying the theories learned in class. The PLP experience helped her develop teaching skills and adapt to the educational setting, providing a strong foundation for her future professional career.

MOTTO

"Allah does not require of any soul more than what it can afford." [Qur'an 2:286]

"Live your life to the fullest. You have Allah, the Almighty. You have Allah in everything."

DEDICATIONS

In the divine name of Allah SWT, the Most Gracious and Merciful, whose blessings have guided researcher throughout this journey. This thesis is lovingly dedicated to my beloved parents, my beloved siblings, my best friends, lecturers, and my almamater, Lampung University.

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Throughout the process of writing this thesis, the researcher have received countless support and encouragement from various individuals. The researcher would like to take this opportunity to express her deepest gratitude to:

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Bandar Lampung, January 2025
The Researcher

Aqila Oktavia Indriyani

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURE

LIST OF APPENDICES

I. INTRODUCTION

This chapter provides the background of the problem, research question, objectives, uses, scope, and definition of terms.

1.1 Background

Many people learn and use English in a variety of context, including in everyday conversation, business, education, and more. There are four skills in English, namely listening, reading, writing, and speaking that should be taught when studying English. Reading plays a particularly important role in education. Not only does our education system demand a lot of reading in the process of learning, it also tends to use the capacity to read fluently as an indicator of more general intellectual ability (Traves, 1994). Reading is difined as a ability to draw meaning from the printed page and interpret this information appropriately (Grabe & Stoller, 2011). Reading involves constructing meaning from the text. This includes identifying the main ideas, understanding the context, and recognizing the relationships between different elements of the text. However, comprehension abilities are much more complex than this definition suggests. Reading comprehension involves the reader engaging with the text to extract the main ideas or important messages. Effective reading comprehension enables learners to understand and engage with texts on a deeper level, facilitating better retention and application of knowledge. This skill is essential not only for academic but also for personal and professional development, as it improves critical thinking, problem-solving abilities, and overall communication skills.

In the context of English language learning, reading serves as a gateway to acquiring new vocabulary, understanding grammatical structures, and gaining insights into different cultures and perspectives. By engaging with various texts, learners can improve their language proficiency and develop their understanding. This makes reading an indispensable component of English language education.

Despite its importance, many learners struggle with reading comprehension. In the English language learning environment, several issues commonly arise that hinder effective reading comprehension. Many students struggle with organizing information and often do not understand how to structure the content they read. This difficulty extends to comprehending the relationships between different pieces of information within a text, as well as taking effective notes. Additionally, classroom time and resource constraints make it challenging for teachers to provide satisfactory feedback to each student. The diverse skill levels and needs of students further complicate this issue, as some students may feel neglected and lose motivation if they do not receive adequate attention or appropriate feedback. Traditional teaching methods, which often focus on rote memorization and surface-level understanding, fail to equip students with the necessary skills for deep engagement with texts. Therefore, there is a real need for innovative teaching strategies that can improve reading comprehension and make learning more interactive and effective.

One such innovative strategy is I-Think mapping, an adaptation of the Thinking Maps framework. I-Think mapping is a visual tool designed to improve cognitive processes and improve comprehension. By utilizing various types of maps, such as tree maps, circle maps, bubble maps, and flow maps, I-Think mapping helps students organize information, draw connections, and develop a deeper understanding of the material. This strategy promotes active learning, critical thinking, and the ability to synthesize information.

Several studies have explored the use of I-Think mapping in improving students' reading comprehension. Research on reading comprehension has shown that I-Think mapping encourages discussion, collaboration, and idea generation, helping students identify main ideas and supporting details more effectively (Sharif et al., 2023; Tiing & Said, 2019; Neo & Said, 2018). In writing instruction, I-Think mapping has been used to enhance students' ability to organize ideas, particularly in argumentative writing. Studies found that implementing tree maps during the pre-writing stage significantly improved students' ability to structure their essays (Fadhil & Yamat, 2020; Nachiappan et al., 2019). Additionally, the use of I-Think mapping in writing activities was reported to reduce students' anxiety, increase engagement, and improve logical idea flow, especially among low-proficiency learners (Sovakandan et al., 2017). Further research highlights the broader impact of Thinking maps in fostering higher-order thinking skills. These visual tools not only aid in reading comprehension but also promote critical and creative thinking, making them an effective instructional strategy for modern classrooms (Mahamod et al., 2019; Hakim, 2018).

Previous research has shown that I-Think mapping can be highly effective in improving reading comprehension and other skills. However, most studies have focused on higher education or adult learners, leaving a significant gap when it comes to lower secondary school students. This study aims to address this gap by investigating whether there is an improvement in students' reading comprehension through the application of I-Think mapping in a lower secondary school.

1.2 Research Question

Based on what has been written in the background of the study, the researcher specified the research question as follow:

Is there any improvement of using I-Think mapping on students' reading comprehension?

1.3 Objective

Referring to the research question above, the objective of this research is to find out whether there is any improvement of the students' reading comprehension through I-Think mapping.

1.4 Use of The Research

The researcher expects that this study gives meaningful contribution in English language teaching environment, whether it is theoretically and practically. Therefore, the use of this research are as follows:

1. Theoritically

Result of this research can be used to support previous study and can be used as reference for researcher who wants to conduct this research.

2. Practically

The result of this research can be used as input for English teacher especially in teaching Reading skill.

1.5 Scope of The Research

This research focused on grade 9 junior high school students. There are several innovative strategies or tools used to improve reading comprehension, such as mind mapping, DRTA, and SQ3R and others. In this research, researchers used I-Think mapping. In accordance with the Kurikulum Merdeka, material about phase D includes text types, such as visual, multimodal or interactive text. In this research, researchers focused on learning descriptive texts.

1.6 Definition of Terms

In order to avoid misunderstanding and misinterpretation among the readers, definitions of terms are provided as follows:

1. Reading Comprehension

Reading comprehension refers to the skill of understanding information presented in a text and interpreting it accurately. It involves not just reading words but grasping the meaning behind them and making sense of the content (Grabe & Stoller, 2011).

2. I-Think mapping

I-Think mapping is a strategy or visual tool that helps students improve how their brains process information and understand informations better. It uses various types of map to organize thoughts and ideas visually, making it easier to comprehend and remember information (Sharif et al., 2023).

This chapter already discussed introduction of the research, including the explanation about the background of the research, research question, objectives, uses, scope, and definition of terms in order to provide an insight to this research.

II. LITERATURE REVIEW

This chapter presents related literature dealing with concept of reading comprehension, teaching of reading comprehension, aspects of reading comprehension, teaching of reading comprehension, related research study, I-Think mapping in teaching reading comprehension, procedure, advantage and disadvantage, theoretical assumption, and the last about the hypothesis of the study.

2.1 Concept of Reading Comprehension

Reading comprehension involves much more than readers' responses to text. Reading comprehension is a multicomponent, highly complex process that involves many interactions between readers and what they bring to the text (previous knowledge, strategy use) as well as variables related to the text itself (interest in text, understanding of text types (Klingner et al., 2007). Essentially, it is not just about decoding words but also about understanding and interpreting text based on prior knowledge and context. Readers must actively engage with the text, make connections, recognize individual word meanings, grasp sentence structure, and apply cognitive strategies to infer meaning and draw conclusions. Fluency is crucial as it allows for smoother integration of new information, enabling better comprehension. Additionally, motivational and affective factors like interest in the topic, confidence in reading abilities, and persistence also significantly influence comprehension. Thus, reading comprehension is a multifaceted skill involving decoding, linguistic knowledge, cognitive strategies, fluency, and affective components, all of which must be addressed for effective instruction.

Reading for general comprehension is defined as the ability to understand and accurately interpret information within a text (Grabe & Stoller, 2011). This fundamental skill involves more than just recognizing words; it requires readers to extract meaning, relate it to their existing knowledge, and apply critical thinking to interpret the content appropriately. Effective general comprehension enables readers to grasp the main ideas, identify key details, and understand the overall message of the text. Additionally, it involves making inferences, discerning the author's purpose, and evaluating the validity and relevance of the information presented. By developing strong general comprehension skills, readers can navigate a wide range of texts more effectively, improving their ability to learn, communicate, and engage with the world around them.

Reading is a process of negotiating meaning; the reader brings to the text a set of schemata for understanding it, and intake is the product of that interaction (Brown, 2004). This negotiation process requires readers to interact actively with the text, integrating their prior knowledge, contextual understanding, and cognitive strategies to make sense of the information. It involves decoding words, understanding sentence structures, and interpreting the nuances of language to extract meaning. Readers must also consider the author's intent, the context in which the text was written, and their own perspectives and experiences. This dynamic interaction between the reader and the text is crucial for deep comprehension, allowing readers to not only understand the surface meaning but also to engage critically with the content, draw inferences, and apply the information in meaningful ways. Through this comprehensive process, readers can fully grasp and appreciate the richness and complexity of the text.

From the explanations above, it can be concluded that reading comprehension is a complex process that goes beyond mere word recognition. It involves integrating various cognitive skills such as understanding vocabulary, applying prior knowledge, and maintaining reading fluency. Readers actively engage with texts by making connections, identifying word meanings, understanding sentence

structures, and employing cognitive strategies to infer meaning and draw conclusions. Fluency plays a critical role in facilitating the seamless integration of new information, thereby improving comprehension. Additionally, factors such as interest in the topic, confidence in reading abilities, and persistence also significantly influence comprehension outcomes. Overall, effective reading comprehension involves a dynamic interaction between the reader and the text, where meaning is negotiated through active engagement, critical thinking, and the application of knowledge and strategies. This comprehensive approach allows readers to not only understand the literal meaning of texts but also to delve deeper into their complexities and derive meaningful insights.

2.2 Aspects of Reading Comprehension

Students should be able to understand a text well in five aspects of reading comprehension: determining the main idea, finding specific details, making inferences, identifying references, and understanding the meaning of vocabulary (Nuttal, 1982). These factors are viewed as challenges that hinder students' comprehension of the text.

1. Determining the main idea

Students need to recognize what a text is mostly about. This means understanding the topic it covers. The main idea of a paragraph is what the author is trying to say. Sometimes, it's clearly stated, while other times it's hinted at. You can often find it in the first and last sentences of a paragraph. Summarizing what's in the paragraph and how it connects to the next one can also help find the main idea.

2. Finding specific details

Students must locate every piece of information in the text to get exact answers. Questions that ask for specific details might focus on reasons, purposes, results,

comparisons, identities, times, or amounts. Most of these answers are directly in the text.

3. Making inferences

Students need to understand a text well enough to figure out the conclusions before drawing inferences. Making inferences means drawing conclusions based on clues in the text rather than what's directly stated. It's a crucial skill for understanding what isn't explicitly said and predicting what might happen next.

4. Identifying references

References are connections between different parts of a sentence, like pronouns (words like "it," "us," "they," or "this"). These pronouns refer back to nouns or phrases in the text. Understanding these connections helps in reading comprehension.

5. Understanding the meaning of vocabulary

When students encounter unfamiliar words, they can improve their understanding by figuring out their meanings in the context of what they're reading. This involves looking at how the word is used and connecting it to what they already know. Building a strong vocabulary helps students comprehend texts more deeply and accurately.

By mastering these aspects, identifying main ideas, finding details, making inferences, recognizing references, and understanding vocabulary, students can improve their ability to comprehend and engage with various texts effectively.

2.3 Teaching of Reading Comprehension

Teaching reading involves helping students enjoy and love reading activities, as well as developing strategies to improve comprehension and interaction with text. Teachers should focus on training students in reading sub-skills to improve their comprehension abilities. It is crucial for teachers to provide adequate time for exercises, prepare materials, and employ effective strategies to reduce students' problems in reading comprehension (Setiorini et al., 2022).

Reading comprehension involves activating prior knowledge to understand text, with activities like pre-reading, during reading, and post-reading tasks being essential in teaching reading comprehension. Different reading strategies such as skimming and scanning are employed to improve comprehension, with skimming focusing on main ideas and scanning on specific details. Pre-reading activities aim to activate students' background knowledge and set objectives for reading, while during-reading activities focus on identifying main ideas and details in the text. Post-reading activities include discussions, feedback, and comprehension checks to ensure students have understood the text, promoting deeper engagement with the material. Reading for information involves searching for specific details using clues like contents, indexes, and glossaries, helping students quickly locate information (Dildora & Miravaz, 2020).

There are several effective strategies for teaching reading comprehension. It emphasizes the use of various tasks before, during, and after reading to improve understanding (Narajo et al., 2021). Before reading, teachers should activate students' prior knowledge through pre-reading activities, which helps students connect new information to their existing knowledge base. During reading, employing strategies like skimming for main ideas and scanning for specific details is recommended to improve comprehension. After reading, engaging students in post-reading activities, such as discussions and comprehension checks, ensures they have understood the material and encourages deeper interaction with the text.

Additionally, the journal highlights the importance of teaching students how to use information retrieval techniques, such as using contents, indexes, and glossaries, to quickly find information. These comprehensive approaches collectively aim to improve students' reading skills and their ability to engage meaningfully with texts.

Additionally, there are several strategies employed by teachers to improve students' reading comprehension effectively. The study identifies three dominant strategies: question generating, encouraging the use of dictionaries, and question answering (Enggar & Wibowo, 2020). Question generating involves guiding students to formulate and answer questions during the reading process, which stimulates critical thinking and helps them connect with the text on a deeper level. Meanwhile, encouraging the use of dictionaries emphasizes the importance of vocabulary development by prompting students to identify and look up unfamiliar words at various stages of reading. This strategy ensures that students can comprehend the text more effectively by reducing lexical gaps. Question answering, another critical strategy, helps students solidify their understanding by responding to questions posed by the teacher, which also improves their ability to infer meanings and grasp text structures. The researcher also notes that while strategies like predicting, monitoring comprehension, skimming, and scanning are occasionally used. These findings underscore the importance of selecting and adapting strategies to suit the learning objectives, text genre, and students' needs. The study highlights that employing a variety of strategies not only improves students' engagement with the reading material but also addresses their comprehension challenges effectively. Teachers are encouraged to use flexible approaches that align with curriculum goals while fostering an interactive and supportive learning environment (Enggar & Wibowo, 2020).

In teaching reading comprehension, it is essential to use strategies that actively involve students in the reading process (Ali & Razali, 2019). Cognitive strategies like predicting, summarizing, and identifying key ideas help students engage directly with the text, improving both their understanding and retention.

Meanwhile, metacognitive strategies guide students to reflect on their understanding, monitor progress, and adjust strategies as needed. Teachers need to select strategies that fit their students' needs, constantly shifting methods to challenge them with more complex tasks. This approach encourages deeper comprehension, allowing students to address difficult texts with greater confidence and skill. Effective teaching should go beyond the basics, incorporating strategies that require students to think critically and adapt their approach as they read, ultimately improving their ability to process and understand complex material. By focusing on both cognitive and metacognitive strategies, teachers can help students to become more independent and skilled readers.

In summary, effective teaching of reading involves fostering an enjoyment of reading and developing strategies to improve comprehension. This includes pre-reading activities to activate prior knowledge, during-reading strategies like skimming and scanning for understanding main ideas and details, and post-reading activities such as discussions and comprehension checks. Additionally, teaching information retrieval techniques using contents, indexes, and glossaries is crucial. These approaches collectively aim to improve students' reading skills and their engagement with texts.

2.4 Concept of I-Think mapping

I-Think mapping is a pedagogical framework rooted in the principles of visual learning, which emphasizes the use of graphical representations to improve comprehension, problem-solving, and higher-order thinking skills (Okada et al., 2008). The approach is specifically designed to encourage students to think critically and creatively by visually organizing and categorizing information, thereby enabling them to make meaningful connections and retain knowledge more effectively.

The concept of I-Think mapping involves the use of various thinking maps (Sharif et al., 2023). There are eight types of Thinking map, in which every type has its own function, such as circle, bubble, double bubble, tree, brace, flow, multi-flow, and bridge, to improve teaching and learning processes in different subjects like reading comprehension, history, and writing. Each map serves a unique cognitive function and is aligned with specific learning objectives. These visual tools act as scaffolding to support students' thought processes, encouraging them to delve deeper into the subject matter and develop a more nuanced understanding. These maps are designed to stimulate higher-order thinking skills (HOTS) among students, encouraging them to generate ideas, expand on concepts, and express themselves effectively. By visually organizing information, these maps help students to better understand and retain complex material.

The I-Think program, introduced in Malaysia, emphasizes the importance of cultivating critical and creative thinking skills in students through the application of these thinking maps in classrooms (Castellar & Juliasz, 2017). I-Think carries the meaning of Innovative THINKing. The program is a strategic initiative aimed at transforming traditional teaching methods into more interactive and engaging experiences. By integrating I-Think mapping into the curriculum, students can foster a more dynamic learning environment where students are active participants in their education rather than passive recipients.

CIRCLE MAP

FOR DEFINING IN CONTEXT

TREE MAP

FOR CLASSIFYING AND GROUPING

BUBBLE MAP

FOR DESCRIBING USING ADJECTIVES

DOUBLE BUBBLE MAP

FOR COMPARING AND CONTRASTING

FLOW MAP

FOR SEQUENCING AND ORDERING

MULTI-FLOW MAP

FOR CAUSES AND EFFECTS

BRACE MAP

FOR ANALYZING WHOLE OBJECTS AND PARTS

BRIDGE MAP

as

FOR SEEING ANALOGIES
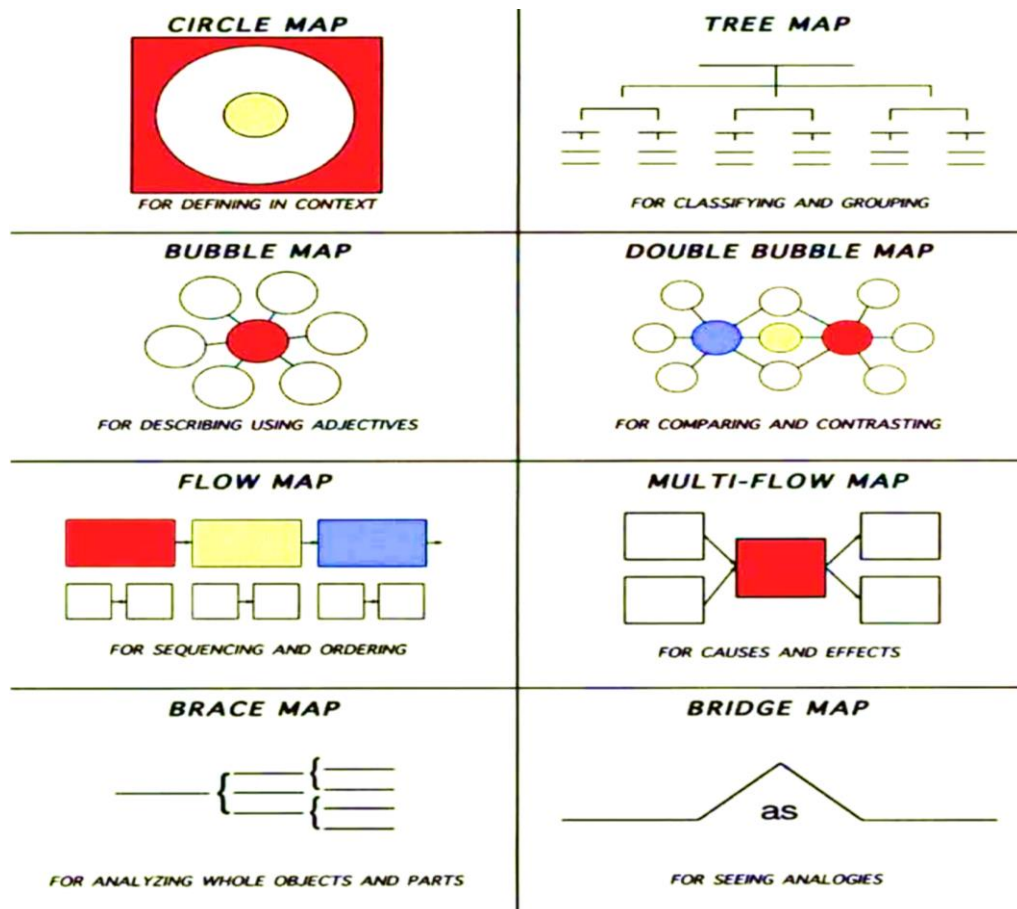
Figure 2. 1 I-Think Map

The principles of I-Think mapping are closely aligned with constructivist theories of learning, which advocate for active participation and the construction of knowledge through experience and reflection skills (Okada et al., 2008). Constructivism posits that learners acquire knowledge most effectively when they are actively involved in the learning process. In this regard, thinking maps serve as a bridge between prior knowledge and new information, enabling students to integrate and apply what they have learned in meaningful ways. The visual organization provided by thinking maps allows students to clearly see relationships between ideas, identify patterns, and draw connections across different contexts. For example, flow maps are effective for understanding sequences in historical events, while tree maps are ideal for categorizing and organizing information in descriptive texts. Such tools are invaluable in fostering critical thinking and

problem-solving abilities, which are essential for academic success and lifelong learning.

The impact of I-Think mapping extends beyond the classroom. By equipping students with the ability to think critically and creatively, these tools prepare them to tackle complex real-world challenges. The skills developed through thinking maps, such as organization, analysis, and synthesis, transferable to various professional and personal contexts. Moreover, the emphasis on higher-order thinking ensures that students are not merely memorizing information but are actively processing and applying it in meaningful ways.

In this study, the use of tree maps is considered suitable for improving students' reading comprehension because they help organize and categorize information in a clear and systematic way. Reading comprehension involves understanding word meanings, identifying main ideas and references, recognizing key details, and making inferences (Grabe & Stoller, 2011). Tree maps provide a visual way to break down this information into subcategories, such as physical traits, historical context, or cultural relevance, which supports deeper understanding of the text.

2.5 Procedures of Teaching of Reading Comprehension Through I-Think mapping

Here are the procedures involved in teaching reading comprehension through I-Think mapping (Sharif et al., 2023):

1. Introduction of the Lesson

Teachers begin their lessons by explaining the learning objectives to the students. This helps students understand what they are expected to achieve by the end of the lesson.

2. Selection and Explanation of Appropriate I-Think Mapping

Teachers select specific I-Think maps that suit the reading task, such as circle maps, bubble maps, double bubble maps, flow maps, and tree maps. Then explain the purpose and usage of these maps in the context of reading comprehension, such as defining words in context, describing, comparing and contrasting, sequencing events, and classifying ideas.

3. Guided Practice

Teachers provide input and guidance on how to apply I-Think mapping strategies. They demonstrate how to fill in the maps with information obtained from the text. Then, teachers guide students through the process of using the maps to organize their thoughts and extract key information from the reading material.

4. Use of Questions to Stimulate Thinking

Teachers use questioning strategies, including both lower-order thinking skills (LOTS) and higher-order thinking skills (HOTS), to guide students in comprehending the text and filling out the I-Think mapping. Questions are used to focus students' attention, elicit specific information, and stimulate deeper thinking.

5. Identifying the Main Idea

Students begin by identifying the central theme of the text using I-Think mapping. For example, when reading a passage about Komodo dragons, they determine that "Komodo is a ferocious predator." This step helps them focus on understanding the core message of the text.

6. Categorizing Supporting Details

After identifying the main idea, students categorize supporting details by using I-Think mapping. They map out information such as Komodo's hunting behavior, habitat, and physical characteristics under relevant categories. This systematic approach allows students to see how details relate to the main idea.

7. Identifying References and Vocabulary

Students analyze reference words such as pronouns ("it" or "they") and determine their antecedents to ensure a deeper understanding of text coherence. Additionally, I-Think mapping is used to help students identify and understand vocabulary related to the reading text. Students match unfamiliar words with their meanings or contextualize them within the passage, reinforcing their vocabulary acquisition.

8. Making Inferences

Teachers guide students in making logical inferences from text by using I-Think mapping to connect ideas. For example, when discussing the Komodo dragon's habitat, students can infer that its need for a warm environment makes it sensitive to climate change. By analyzing information beyond what is explicitly stated, students develop critical thinking skills.

9. Presentation and Sharing

After completing their I-Think maps, students present their findings in class. Teachers facilitate discussions where students explain how they categorized information, allowing them to verbalize their thought processes and refine their understanding through peer feedback.

10. Feedback and Refinement

Teachers provide feedback on students' maps, helping them refine their classifications if needed. They also guide students on how to improve their organization of ideas to ensure clarity and coherence in their reading comprehension.

These procedures integrate I-Think mapping into the teaching of reading comprehension, emphasizing the use of visual tools to improve students' ability to organize information, make connections, and deepen their understanding of texts. By following these procedures, teachers can effectively utilize I-Think mapping to scaffold students' reading comprehension skills, promote active engagement with texts, and foster critical thinking abilities in a variety of educational environments.

2.6 Advantages and Disadvantages of I-Think mapping

There are advantages and disadvantages in learning English through I-Think mapping.

1. The advantages of I-Think mapping

Implementing I-Think mapping for teaching reading comprehension provides several distinct advantages. Firstly, it improves higher-order thinking skills by prompting students to analyse and synthesize information from texts (Sharif et al., 2023). This structured approach encourages students to go beyond surface-level

understanding, fostering critical thinking abilities essential for deeper comprehension. Moreover, I-Think mapping motivates discussion and cooperation among students. As they collaborate to map out their understanding of texts, a collaborative learning environment is nurtured. This not only improves students' engagement with the material but also facilitates better comprehension through peer interaction and shared insights. Additionally, the method makes teaching more manageable for educators. By providing a structured framework for organizing and presenting information, I-Think mapping aids in material retention (Sahri et al., 2022). The visual and organizational aspects of mapping help reinforce learning and improve memory recall, making complex information more accessible and understandable for students. Lastly, implementing I-Think mapping has been shown to improve students' reading comprehension skills and foster a positive attitude towards reading. Actively engaging with texts through mapping not only improves comprehension but also cultivates a deeper appreciation for the content studied, encouraging lifelong learning habits.

2. The Disadvantages of I-Think mapping

Despite its benefits, implementing I-Think mapping in teaching also presents several challenges. One significant drawback is the time constraints involved in lesson preparation (Sharif et al., 2023). Developing effective I-Think mapping exercises requires careful planning and preparation, which can be demanding for educators. This aspect may limit its widespread adoption or effectiveness in contexts where time resources are constrained. Another limitation is that I-Think mapping is primarily suited to simpler associations and may lack the complexity needed for more advanced learning objectives (Sahri et al., 2022). Teachers may find it challenging to adapt the method to cater to diverse learning needs or to achieve higher-order learning outcomes effectively. Moreover, while I-Think mapping encourages active engagement and collaboration, its success depends significantly on students' effort and interest. Some students may find the approach less compatible with their preferred learning styles, necessitating adaptable teaching strategies to ensure equitable learning experiences.

In conclusion, while implementing I-Think mapping offers compelling advantages for improving reading comprehension, such as promoting critical thinking, fostering collaboration, and aiding in information retention, it also poses notable challenges. These include the time-intensive nature of lesson preparation, potential limitations in addressing complex learning objectives, and varying degrees of student engagement. Educators considering the adoption of I-Think mapping should weigh these factors carefully to optimize its effectiveness in diverse educational settings.

2.7 Related Research Study

In general, the majority studies about teaching using I-Think mapping have reported positive results, as follows:

Sharif et al. (2023) focused on investigating the use of I-Think mapping in teaching reading comprehension to five students by ESL teachers in a rural secondary school in Hulu Selangor, Malaysia. Challenges were faced by the teachers included time constraints in lesson preparation with I-Think mapping and low student English proficiency levels. The findings indicated that I-Think mapping motivated students to discuss, brainstorm, and cooperate with peers to extract details from reading texts, aiding in idea generation and oral expression. Despite challenges, teachers agreed that I-Think mapping improved students' understanding of texts, helping them identify main ideas, supporting details, and answer questions accurately.

Mahamod et al. (2019) found that the use of I-Think mapping in teaching and learning has improved students' achievement in writing non-formatted essays among 6 students. This implies that the more recent teaching and learning method is well-suited to produce creative and critical thinking students. By fostering a high-thinking culture among students, it can help teachers attract students to a subject. To produce students with first-class minds, more innovative teaching and learning methods like I-Think mapping should be applied by modern-day teachers.

However, a more comprehensive study on the use of I-Think mapping in improving thinking culture among students is necessary.

Fadhil & Yamat (2020) focused on using I-Think mapping (tree map) to organize ideas in argumentative writing among English as second language learners. The study employed a quasi-experimental design without a control group, involving 40 students from a National School in Malaysia. Participants underwent pre-and post-tests to assess their writing performance, with an intervention using I-Think mapping during the pre-writing stage to improve idea organization. The findings from paired sample t-tests indicated a statistically significant improvement in students' ability to organize ideas in argumentative writing after using I-Think maps. The results suggest that incorporating I-Think mapping in teaching can improve students' writing skills, particularly in organizing ideas effectively.

Nachiappan et al. (2019) focused on utilizing I-Think maps, specifically tree maps, to aid in organizing ideas for argumentative writing among ESL learners in a Malaysian school setting. A quasi-experimental study design was employed, involving 40 form four students who did pre-and post-tests to evaluate their writing performance after using I-Think mapping during the pre-writing stage. The results of paired sample t-tests revealed a significant improvement in students' ability to organize ideas in argumentative writing following the intervention with I-Think maps.

Sovakandan et al. (2017) focused on investigating low proficiency ESL students' perceptions of using I-Think mapping in writing practices within a Malaysian school. A qualitative study design was employed, which included focus group interviews to gather insights from students regarding their experiences with four types of I-Think mapping during their writing tasks. The findings indicate that students experienced reduced anxiety towards writing, increased participation in their writing tasks, and improved logical flow of ideas. This study suggests that

when effectively integrated into classroom practices, I-Think mapping can improve interest and engagement among low proficiency students who typically struggle with ESL writing tasks.

Hakim (2018) examined the implementation of Thinking maps as a visual strategy in English language learning in the 21st century. The study highlighted how Thinking maps, consisting of eight visual patterns, supported students in enhancing their thinking skills. Hakim emphasized that integrating Thinking maps helped teachers diversify their teaching techniques and meet the demands of higher-order thinking skills. The findings indicate that Thinking maps assisted students in organizing ideas, connecting concepts, and improving their reading comprehension in English language learning.

Tiing & Said (2019) investigated the effects of using I-Think maps on ESL learners' reading comprehension in a rural primary school in Malaysia. The study involved four students from year 4 and year 5, using reading tasks and semi-structured interviews for data collection. The results show that while I-Think maps did not lead to significant improvements in reading comprehension, students provided positive feedback on vocabulary learning and critical thinking skills. The study suggested further exploration of I-Think maps as a tool for enhancing ESL reading lessons

Neo & Said (2018) stated that conducted a quasi-experimental study to examine the effectiveness of Thinking aps in improving reading comprehension among 56 Year 5 students in a sub-urban school in Kapit, Sarawak. The study compared a treatment group, which received Thinking maps instruction, with a control group that followed conventional teaching methods. Using pre-tests and post-tests, the findings reveal that students in the treatment group significantly outperformed those in the control group. The results suggested that Thinking maps facilitated students' comprehension of texts and promoted Higher Order Thinking Skills (HOTS). The

study concluded that implementing Thinking maps in reading lessons enhanced students' ability to organize ideas, make inferences, and remember information more effectively.

In summary, various studies highlight the effectiveness of I-Think mapping in improving students' academic performance across different areas. It has been shown that I-Think mapping significantly motivates students to engage with reading comprehension tasks, despite challenges like time constraints and low English proficiency levels. Additionally, this method improves and promoting creative and critical thinking. The use of tree maps to organize ideas has also been found to improve students' argumentative writing skills. Collectively, these findings emphasize the importance of implementing I-Think mapping in modern teaching practices to foster higher-order thinking, better comprehension, and improved writing skills among students.

The difference in this study compared to previous research lies in the sample used. The sample of this research will be students at lower secondary school levels. Therefore, the researcher decided to conduct a study to examine whether there is any improvement in student's reading comprehension through I-Think mapping.

2.8 Theoretical Assumption

In examining the potential improvement of incorporating I-Think mapping to improve students' reading comprehension, it is assumed that this strategy can significantly improve how students engage with and understand texts. I-Think mapping offers a structured approach to organizing thoughts and connections during reading, which researcher believe fosters deeper engagement with the material. By actively mapping out, relationships between ideas, and key concepts while reading, this approach will promote critical thinking skills essential for comprehension.

Additionally, the researcher assumed that I-Think mapping will improve the ability to organize and retrieve information from texts. Using I-Think mapping, students can group information based on related ideas, highlight main points in the text, and draw connections between key concepts and the supporting details. This structured approach not only assists in understanding the hierarchical structure of texts but also aids in memory retrieval during subsequent recall and analysis tasks.

In summary, researcher exploration into the implementation of I-Think mapping as a cognitive tool to improve students' reading comprehension is grounded in the belief that this approach can facilitate and improve the organization and retrieval of information.

2.9 Hypotheses

Based on the study above, the hypotheses for this research are as follows:

H0: There is no improvement in students' reading comprehension after being taught using I-Think mapping.

H1: There is improvement in students' reading comprehension after being taught using I-Think mapping.

These hypotheses are formulated to test whether the implementation of I-Think mapping has a positive effect on improving students' reading comprehension. The null hypothesis (H0) assumes that there is no significant difference in students' reading comprehension before and after the use of I-Think mapping, indicating that the method has no significant impact. In contrast, the alternative hypothesis (H1) suggests that I-Think mapping can improve students' reading comprehension, which will be tested through the analysis of pre-test and post-test results.

This chapter already discussed about literature review of the research, including concept of reading comprehension, teaching of reading comprehension, aspects of reading comprehension, teaching of reading comprehension, related research study, I-Think mapping in teaching reading comprehension, procedure, advantage and disadvantage, theoretical assumption, and the last about the hypothesis of the study.

III. METHODS

This chapter presents research design, variables of the research, data sources, instrument, the implementation of the experiment, data collection, data analysis, data treatment, and hypothesis testing.

3.1 Design

The design contained a concept of how the study was carried out. In conducting this research, the researcher employed a quantitative research method using a one-group pretest-posttest design. One group was present in a single classroom, and pre-test and post-test were utilized to measure the success of this study. In this research, students were administered a pre-test before receiving the treatment. The researcher administered the pre-test to the students to assess their reading comprehension prior to the treatment. Subsequently, a post-test was used to measure the impact obtained after they received the treatment.

The design present as follow:

$$G= T1 \text{ X } T2$$

G   : the group

T1   : Pre-test

X   : Treatment (the implementation of I-Think mapping)

T2   : Post-test

3.2 Variables

Variable of the research encompasses attributes, traits, or values associated with individuals, objects, or activities, exhibiting specific variations (Sugiyono, 2013). These variations are selected by the researcher for examination and the derivation of conclusions. This study involves two types of variables: independent variable and dependent variable.

1. Independent variable

Independent variable is a type of variable that influences the dependent variable. In this study, the independent variable is the use of I-Think mapping (X).

2. Dependent variable

Dependent variable is a type of variable that is influenced by the independent variable. The dependent variable in this research is students' reading comprehension (Y).

In conclusion, this research particularly focuses on two crucial variables: the independent variable, represented by the use of I-Think mapping (X), and the dependent variable, which pertains to students' reading comprehension (Y). The independent variable is identified as the influential factor, shaping and impacting the dependent variable.

3.3 Data Source

Data sources are referred to in this study are the population or sample that being observed by the researcher. Population is a generalization area which consists of subject or objects that being study and also have certain qualities and characteristics set by the researcher There are no sources in the current document.. Sample is part of number and characteristics set by the population (Sugiyono, 2013).

1. Population

The population of this research was the nineth students of Junior high School from SMP 3 Al Azhar Bandar Lampung.

2. Sample

The researcher took one class IXB wich consists of 30 students.

3.4 Instruments

The instrument used in this study was a reading comprehension test. This test was administered twice, as a pre-test and a post-test. The questions were based on descriptive texts appropriate for 9th-grade junior high school students. The test consisted of 40 questions, including 32 multiple-choice questions and 8 open-ended questions. These questions covered various aspects of reading comprehension, including identifying the main idea, finding specific details, making inferences, identifying references, and understanding vocabulary meanings. To measure whether the test had good quality or not, the researcher conducted a tryout of the test instrument. Some questions were dropped or revised to make them more suitable for students. The test was concluded to have good quality if it demonstrated strong validity, reliability, appropriate levels of difficulty, and good discrimination power.

The following is a classification of questions based on the aspects of reading comprehension:

Table 3. 1 Specification of Tryout Tes

No.	Reading Comprehension Aspect	Number of Items	Number of the Test
1	Identifying the main idea	10	1, 2, 12, 13, 23, 24, 34, 35, 45, 46
2	Finding specific details	10	3, 4, 14, 15, 25, 26, 36, 37, 47, 48
3	Making inferences	15	9, 10, 11, 20, 21, 22, 31, 32, 33, 42, 43, 44, 53, 54, 55
4	Identifying reference	10	5, 6, 16, 17, 27, 28, 38, 39, 49, 50
5	Understanding the meaning of vocabulary	10	7, 8, 19, 19, 29, 30, 40, 41, 51, 52
	Total	55	

The table above shows that out of the 55 questions the researcher had prepared for the tryout, with the types of questions consisting of 40 multiple-choice and 15 open-ended questions, the researcher got 40 questions that could be used as the pre-test and post-test.

Table 3. 2 Specification of Pre-Test and Post-Test

No.	Reading Comprehension Aspect	Number of Items	Number of the Test
1	Identifying the main idea	8	1, 2, 11, 12, 21, 22, 31, 32
2	Finding specific details	8	3, 4, 13, 14, 23, 24, 33, 34
3	Making inferences	8	9, 10, 19, 20, 29, 30, 39, 40
4	Identifying reference	8	5, 6, 15, 16, 25, 26, 35, 36
5	Understanding the meaning of vocabulary	8	7, 8, 17, 18, 27, 28, 37, 38
Total		40	

The table above shows the 40 questions the researcher had prepared for the pre-test and post-test, with the types of questions consisting of 32 multiple-choice and 8 open-ended questions. The questions used during the pre-test and post-test were the same, only the questions were randomized.

1. Validity

a. Content validity

Content validity is the extent to which items within a tool accurately represent the subject matter described by the tool itself (Boudreau et al., 2001) . A test possesses content validity when it contains a suitable representation of the content structure that aligns with the test's intended purpose. This implies that the material should be based on the curriculum of the ninth grade of junior high school. In this study, the researcher used a descriptive text that was designed for junior high school students in the third grade. The test was considered valid in terms of content validity based on the module of the Kurikulum Merdeka and the objectives in the curriculum.

b. Construct validity

When making the test, it was very important to ensure it measured what it was supposed to measure, especially since it had many different parts. A test has construct validity if it can measure specific characteristics based on language behavior and learning theories (Setiyadi, 2018). In this study, the researcher conducted a reading comprehension test that looked at different reading aspects. These aspects, according to (Grabe & Stoller, 2011), were identifying the main idea, finding specific details, making inferences, identifying references, and understanding the meaning of vocabulary. The following is a specification of the reading comprehension aspect:

Table 3. 3 Specification of Reading Comprehension Test

No.	Reading Comprehension Aspect	Number of Items
1	Identifying the main idea	8
2	Finding specific details	8
3	Making inferences	8
4	Identifying reference	8
5	Understanding the meaning of vocabulary	8
Total		40

2. Reliability

Reliability measures how accurate, consistent, dependable, or fair the test scores are. Reliability shows how consistent the test scores are and how accurate they are (Hatch & Farhady, 1982). To check the test's reliability, this study used the split-half technique. To find the reliability coefficient between odd and even groups, this study used the Pearson Product Moment formula (SPSS) for the instrument with multiple-choice questions.

$$rl = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$$

Notes:

rl : coefficient of reliability between odd and even number items

x : odd number

y : even number

x^2 : total score of odd number items

y^2 : total score of even number items

xy : total number of odd and even numbers

Based on (Hatch & Farhady, 1982), after getting the reliability of half test, the researcher used Spearman-Brown's Prophecy formula to determine the reliability of the whole test as follows:

$$rk = \frac{2rxy}{1 + rxy}$$

Note:

rk : the reliability of whole test

rxy : the reliability of half test

The researcher analyzed the coefficient of reliability with the standard of reliability below (Arikunto, 2010):

Range	Agreement
0.00 – 0.19	Very low reliability
0.20 – 0.39	Low reliability
0.40 – 0.59	Average reliability
0.60 – 0.79	High reliability
0.80 – 0.100	Very high reliability

According to the established reliability standards, the reading comprehension test is reliable if the test results are between 0.60 and 0.79. This range shows high reliability. Furthermore, the reliability scores for the tryout, pre-test, and post-test in this research are as follows:

Table 3. 4 Reliability of Tryout Test

Reliability Statistics

Cronbach's Alpha	N of Items
.856	40

Based on the data presented in the table, it is evident that the try-out test achieved a remarkable reliability score of 0.856, indicating a very high level of reliability.

Table 3. 5 Reliability of Pre-Test

Reliability Statistics

Cronbach's Alpha	N of Items
.631	32

Based on the data presented in the table, it is evident that the pre-test test achieved a remarkable reliability score of 0.631, indicating a high level of reliability.

Table 3. 6 Reliability of Post-Test

Reliability Statistics

Cronbach's Alpha	N of Items
.638	32

Based on the data presented in the table, it is evident that the post-test test achieved a remarkable reliability score of 0.638, indicating a high level of reliability.

Additionally, to avoid the subjectivity of the test, the researcher collaborated with the English teacher in SMP Al-azhar 3 Bandar Lampung. Then, the result of the test from the two raters were compared to determine the reliability. Furthermore, the researcher used Rank-order Correlation (Hatch and Farhady, 1982:206). In addition, the formula used is as follows:

$$P = 1\frac{6(\sum d\,2\,)}{N(N2-1)}$$

Note:

p: Coefficient of rank order

d: Differences of rank correlation

N: Number of students

1-6: Constant number

The coefficient of reliability can be analyzed using the standard of reliability as follows (Setiyadi, 2013):

a. 0.000-0.200 refers to very low reliability

b. 0.200-0.400 refers to low reliability

c. 0.400-0.600 refers to medium reliability

d. 0.600-0.800 refers to high reliability

e. 0.800-1.00 refers to very high reliability

Based on the standard of reliability above, it can be concluded that the reading tests are considered reliable if the tests reach the range of (0.60-1.00). Furthermore, the reliability scores for the tryout, pre-test, and post-test in this research are as follows:

Table 3. 7 Reliability of Subjectivity Pre-Test

Reliability Statistics

Cronbach's Alpha	N of Items
.914	8

Based on the data presented in the table, it is evident that the pre-test test achieved a remarkable reliability score of 0.914, indicating a very high of reliability.

Table 3. 8 Reliability of Subjectivity Post-Test

Reliability Statistics

Cronbach's Alpha	N of Items
.860	8

Based on the data presented in the table, it is evident that the pre-test test achieved a remarkable reliability score of 0.860, indicating a very high of reliability.

3. Level of Difficulty

Test questions are usually categorized as easy or difficult based on their level of difficulty. To evaluate the difficulty of the research test questions, researchers used the formula provided (Shohamy, 1985):

$$LD = \frac{U + L}{N}$$

Notes:

LD   : Level of difficulty

U   : The proportion of upper group students

L   : Refers to the proportion of lower group students

N   : The total number of students following the test

The criteria are as follow (Shohamy, 1985):

<0.30   : Refers to difficult question

0.30-0.70   : Refers to averege question

>0.70   : Mean that was an easy question

N   : The total number of students following the test

Based on the test results of the tryout test for multiple choice question, it can be concluded that there were seventeen questions with a value of more than 0.70, which means that the questions were included in the easy category. There were eighteen questions with a score of less than 0.30, which means the question was

included in the average category. While five questions have an difficult category (Appendix 7).

4. Discrimination Power

Discrimination power measures how well an item can distinguish between students with high ability and those with low ability. It is calculated using the following formula:

$$DP = \frac{U - L}{\frac{1}{2}N}$$

Notes:

DP   : Discrimination Power

U   : The number of students from the upper who answer correctly

L   : The number of students from the lower who answer correctly

N   : The number of students

The criteria of discrimination power are (Heaton, 1975):

DP   : 0.00-0.19 = Poor items

DP   : 0.20-0.39 = Satisfactory items

DP   : 0.40-0.69 = Good items

DP   : 0.70-1.00 = Excellent items

DP   : - (Negative) = Bad items, should be removed

Based on the analysis of the first tryout test's discriminating power (as shown in Appendix 8), the results for the reading comprehension test revealed the following categorizations:

1. Seven items were identified as negative, indicating their bad items, and they should be removed from consideration.

2. Five items were classified as poor, as their discriminating power fell below the standard threshold of 0.21, making them unsuitable for inclusion in the assessment. Therefore, they should also be removed.

3. Ten items were categorized as satisfactory, which means they could either be dropped or retained for use.

4. Fiveteen items were categorized good, signifying their suitability for inclusion.

5. Three items were categorized as excellent items.

In summary, twenty-eight items were determined to meet the required criteria for the pre-test and post-test, and they can be considered as reference items for these assessments.

3.5 The Implementation of The Experiment

The researcher conducted the research in class 9B of the third grade at SMP 3 Al-Azhar Bandar Lampung from November 5 to November 12, 2024. This research was conducted on Monday and Tuesday of the week. The class consisted of 30 students.

1. The First Treatment (Meeting 2)

The lesson began with pre-activity, where the researcher greeted the students, led them in a group prayer, and checked attendance. To create an engaging learning environment, the researcher initiated a light conversation by asking students, "What kind of person are you? What kind of characteristics do you have?" This question was designed to connect the topic with their personal experiences.

In the core-activity, the researcher facilitated a discussion to help students understand the concept of descriptive texts. The researcher used a power point presentation to provide material and an example of descriptive text. After that, the researcher introduced I-Think mapping, a tool used to summarize and organize information from the text, and provide a descriptive text about rafflesia arnoldii. The researcher demonstrated how to categorize information from the text into sections such as appearance and habitat. To encourage critical thinking, the researcher used the following guiding questions:

- What important information can you find about this plant?
- How is this plant described in the text?
- What details seem to be the most unique or interesting about it?
- What can we infer about the environment where this plant lives?

After students understood the process, the researcher provided a short descriptive text about komodo dragon for collaborative analysis. Students read the text to comprehend its content. The researcher then guided students to identify information or facts within paragraphs and categorize this information into appearance, behavior, and habitat. In this process, the researcher prompted students with the following guiding questions:

- What does the text say about the komodo dragon's physical features?
- What kind of environment is described in the text?
- What clues from the text help you understand why the komodo dragon is special?
- What might happen to the komodo dragon if its habitat changes?
- How would you describe this animal to someone unfimiliar with it?

Students, along with the researcher, filled out the I-Think map based on their analysis, extracting key information from the text and discussing its implications.

The lesson closed with a post-activity, where students reflected on their learning through questions such as, "How do you feel after learning today's material?" The researcher opened a q&a session to assist students in addressing difficulties they

faced during the lesson. The researcher provided feedback on the learning process, and closed the lesson by praying together.

2. The Second Treatment (Meeting 3)

In the second treatment, the researcher began by greeting the students and guiding them through a prayer. Attendance was checked to ensure everyone was present.

Students were divided into small groups to create I-Think mapping using tree map based on the descriptive text titled "My Best Friend, Hanni" (Worksheet 1). The researcher instructed each group to read the text carefully and guided them through the process of creating their I-Think map by providing guiding questions. First, after the students read the text thoroughly, the researcher asked them to identify the main idea of the text by giving guiding questions such as "What is the main thing discussed in the text?" and asked the students to discuss it in groups. Then wrote the main idea on the main branch of the map. Second, after finding the main idea, students searched for detailed information. The teacher asked, "What interesting facts were mentioned in each paragraph?", "What specific details tell us about Hanni?" Students answered in groups, and group it into categories, and added their answers to the sub-branches map. Third, making inferences. The researcher asked students to look at the branches of their group's map that contained detailed information. The researcher looked at each group's map, and from there, the teacher gave a guiding or leading question like "The information your group has, which was taken from the text, is "Hanni is the writer's classmate and best friend. What can you infer about their relationship?", "What can we conclude about Hanni and the writer's friendship based on the text?". All students thought critically and discussed their answers in groups. After that, students looked for identifying the meaning of vocabulary. Students read the information in their map and highlighted words they didn't understand, such as "classmate" or "pointed". The researcher gave guiding question, "What does the sentence around this word tell you about its meaning?" For example, in the sentence, "She is my classmate in junior high school," the researcher asked, "How can you connect the words 'classmate' and

'junior high school?, What can you connect from the words 'nose' and 'pointed'?". Students wrote the word, meaning or synonym on an additional branch of the map. Last, students looked for identifying references. The researcher showed reference words in their map, such as, "she" and "her". The researcher asked, "What do 'she' and 'her' refer to in this sentence?" Students reread the previous sentence to find the answer, then discussed them in groups. Students wrote the reference word and what it referred to on the map, for example, she = Hanni. After that, every groups present their maps to the class. Every process was supported with teacher guidance and interactive group activities. Students learned to analyze the text step by step, building their understanding through guiding question and discussions, then visualizing their results using the map.

At the end of the session, the researcher invited students to reflect on any difficulties or questions they had during the lesson. Feedback was given on the students' performances and the learning process, and closed the lesson by praying together.

3. The Third Treatment (Meeting 4)

The lesson began with a pre-activity where the researcher greeted the students warmly and led them in a prayer. After that, the researcher checked attendance to ensure everyone was present and ready to engage in the learning process.

In the core activity, students were divided into small groups of three or four students to collaborate on a task. Each group received a descriptive text. Using the I-Think mapping technique, students were tasked with creating a detailed tree map to demonstrate their understanding of the text. This activity required them to include both explicit information and inferred details, looked their ability to analyze and synthesize the content deeply. First, after reading the text thoroughly, the teacher asked the students to identify the main idea by giving guiding questions such as, "What is the main thing discussed in the text?" and asked them to discuss it in groups. Then wrote the main idea on the main branch. Second, after finding the

main idea, students looked for detailed information. The teacher asked, "What interesting facts were mentioned in each paragraph?". Students answered in groups and added their answers to the sub-branches map. Third, students looked for making inferences. After they finished creating the map, the researcher asked the students to look at the branches that contained detailed information. The researcher then looked at each group's map, and the teacher gave an guiding question like, "The information your group has, which was taken from the text, is "Komodo hunted its prey by hiding and then attacking quickly." The teacher asked, "What could you infer about Komodo's character based on this hunting method?", "What could we conclude from Komodo's behavior?". All students thought critically and discussed their answers in groups. After that, students looked for identifying the meaning of vocabulary. Students read the information in their map and highlighted words they didn't understand, such as "ferocious". The researcher gave guiding question, "What was explained before or after this word?" For example, the text said "Komodo is a ferocious predator that hunted its prey stealthily." The teacher asked "From the words 'predator' and 'hunted,' what could you guess about the meaning of 'ferocious'?" Students wrote the word, meaning or synonym on an additional branch of the map. Last, students looked for identifying references. The teacher showed reference words in their map, such as, "It was a large reptile that could only be found in Indonesia." The teacher asked, "What did 'it' mean in this sentence? What was it referring to?". Students asked to reread the previous sentence to find the answer (Komodo), then discussed them in groups. Students wrote the reference word and what it referred to on the map, for example, It = Komodo. Every process was supported by interactive activities and critically thinking skill, guided by the researcher, and involved group discussions. Once the maps were completed, each group presented their results to the class, sharing their inferences and explaining the reasoning behind their conclusions based on the text. The teacher provided feedback during the presentations. After that, students were given an individually assignment to assess their understanding further, consist of 10 multiple choice questions.

The lesson concluded with a post-activity in which the researcher invited students to reflect on their learning process. Students discussed the strengths and weaknesses

they experienced while using I-Think mapping as a tool for understanding descriptive texts. The teacher researcher additional feedback on the overall learning process and encouraged students to continue developing their skills. Finally, the teacher closed the lesson by leading a prayer and reflecting gratitude for the session.

3.6 Scoring System

Fairness and equity are essential principles in educational assessment (Brown (2004). These principles were applied in this study to measure students' reading comprehension. The instrument included two types of questions: multiple-choice and open-ended questions, with different scoring criteria. There were 32 multiple-choice questions, each worth 2 points and 8 essay questions, each scored on a scale of 1 to 5 points. The open-ended questions were assessed using an inference rubric designed to evaluate the quality of participants' answers based on the following criteria (Nelson Education, 2008)

Table 3.9 Inferences Rubric

1 (Very poor)	2 (Poor)	3 (Fair)	4 (Good)	5 (Excellent)
Uses minimal and barely relevant references from the text or own ideas to support inferences. The student provides limited evidence that is insufficient	Uses somewhat relevant references from the text or own ideas to support inferences. The student shows an effort to connect	Uses relevant references from the text and own ideas to support inferences. The student is able to connect evidence from the text effectively	Uses highly relevant references from the text and own ideas to support inferences. The student successfully connects information strongly	Uses highly relevant and comprehensive references from the text and own ideas to support inferences effectively. The student demonstrates exceptional mastery in

to demonstrate deep understanding.	information, but the connections made are limited and lack depth.	and demonstrates an adequate understanding through clear inferences.	and shows very good critical thinking skills in making inferences.	connecting information, utilizing knowledge, experiences, and effective reasoning strategies to make thorough and insightful inferences.

The final score was calculated using the following formula:

$$Final\ Score = \left(\frac{Total\ Score}{The\ Total\ Maximum\ Score}\right) x\ 100$$

Total Score: The sum of the scores obtained from the multiple-choice and open-ended questions.

The Total Maximum Score: The sum of the highest scores from both the multiple-choice (64 points) and open-ended questions (40 points), which is 104 points.

100: The scale used to standardize scores.

This formula was used to standardize participants' scores into a 100-point scale, which is a common technique in quantitative evaluation to simplify the interpretation of assessment results. This score standardization technique is widely used to adjust raw scores to a specific scale, with the goal of providing results that are easier to understand and compare. In the context of this study, a 100-point scale was chosen to ensure that the final scores were easy to understand and clearly interpreted.

3.7 Normality of The Test

To determine the effect of I-Think mapping on students' reading comprehension, the researcher used statistical calculations to analyze the data with statistical computations from SPSS 30. There were steps that needed to be taken before addressing the hypothesis testing, namely conducting a normality test to determine whether the data was distributed normally or not.

The normality test was performed with the following hypotheses:

Ho: The data distribution is normal.

Ha: The data distribution is not normal.

The Hypothesis (Ho) is accepted if the significance level of the normality test is greater than 0.05, and vice versa.

Based on the results of the normality test (Appendix 12), a normality test was conducted using both the Kolmogorov-Smirnov and Shapiro-Wilk tests. The results showed that the significance values for both the pre-test and post-test were below 0.05 (Pre-Test: 0.002 and 0.016; Post-Test: 0.029 and 0.031). Since all p-values are less than 0.05, it can be concluded that the data is not normally distributed. Therefore, non-parametric statistical tests were used for further analysis.

3.8 Data Collection

In this research, the researcher used the following steps including procedures and technical of data collection while conducting this research to collect the data. The steps are presented below:

1. Designing the instruments of the research

The research instrument in this study was a reading comprehension test that consisted of 40 questions, including 32 multiple-choice and 8 open-ended questions.

2. Determining materials

The material provided was based on the ninth-grade junior high school curriculum (Kurikulum Merdeka), specifically focusing on descriptive text. The researcher created the materials for the pre-test, treatments, and post-test.

3. Administering Try-out Test

Administering the try-out test aimed to evaluate if the test items met the criteria for validity, reliability, difficulty level, and discrimination power. The test consisted of 40 questions, including 32 multiple-choice and 8 open-ended questions.

4. Administering for the Pre-test

The pre-test was conducted before the treatment of teaching using I-Think mapping was administered. The purpose of the pre-test was to assess the students' reading comprehension abilities prior to the treatment. The students were instructed to complete the reading comprehension test.

5. Conducting Treatment

This research consisted of five class sessions, which included a pre-test, three treatment sessions, and a post-test. I-Think mapping was used as a teaching tool in learning descriptive text.

6. Administering for the Post-test

The post-test was administered at the end of the study. Its purpose was to ascertain whether there was improvement after being taught using I-Think mapping. In the post-test, the same test was conducted as the pre-test to determine whether there was any improvement.

7. Analyzing the research results

The researcher scored and analyzed the pre-test and post-test using the SPSS software program. This was done to find the means of the pre-test and post-test and to determine how significant the improvement was from the data.

3.9 Data Analysis

The researcher calculated students' scores based on their result to determine the improvement in students' abilities with the following steps:

1. Scoring the results of the pre-test and post-test.

2. Obtaining the mean of both tests by calculating the result using this formula:

$$\mathbf{x} = \frac{\Sigma \mathbf{x}}{\mathbf{N}}$$

Notes:

X : mean (average score)

Σx : total students' score

N : number of students

(Hatch and Farhady, 1982**)**

3. Analyzing the relationship between pre-test and post-test scores using the Wilcoxon T-test in SPSS (Statistical Program for Social Sciences). This test is often used similarly to the Repeated Measures t-test. It is applied when the research data comes from the same subjects and does not have a normal distribution (Setiyadi, 2018). This non-parametric test was chosen because the data did not meet the assumption of normal distribution. The Shapiro-Wilk test results showed that the pre-test scores (p = 0.016) and post-test scores (p = 0.031) were not normally distributed (p < 0.05). Additionally, the Wilcoxon T-test is suitable for paired data, such as pre-test and post-test scores, where the samples are dependent. Due to the non-normal distribution of data, the researcher employed the Wilcoxon T-test to assess whether there was a statistically significant improvement in students' reading comprehension. This test assesses whether there is a statistically significant difference between two related samples (pre-test and post-test scores). The formula for Wilcoxon T test is as follows:

$$T = \min \sum R+, \sum R-$$

Note:

$\sum$R+: Sum of ranks for positive differences.

$\sum$R−: Sum of ranks for negative differences.

The analysis was conducted using SPSS (Statistical Program for Social Sciences), where the researcher compared the pre-test and post-test scores of students' reading comprehension. The significance value (p) obtained from the test was used to determine whether the observed improvement in students' scores was meaningful and statistically significant.

4. The researcher composed a discussion regarding the results.

5. The researcher concluded the results of the analysis to answer the first research question.

3.10 Hypothesis Testing

The researcher analyzed the data to determine if there was an improvement in students' reading comprehension after being taught using I-Think mapping. In this case, the researcher used the Wilcoxon T Test within the Statistical Package for Social Sciences (SPSS) to assess the significance of the treatment's effect. The Wilcoxon T Test was chosen because it is suitable for analyzing paired data (pre-test and post-test scores) when the data does not follow a normal distribution.

The results of the Wilcoxon T Test were used to determine whether the first hypothesis was accepted or rejected. In this study, the researcher used a significance level of 0.05, meaning the probability of error in rejecting the null hypothesis was limited to 5%.

The hypothesis testing stated as follow:

H0: There is no improvement on students' reading comprehension after being taught using the I-Think mapping.

H1: There is improvement on students' reading comprehension after being taught using the I-Think mapping.

This chapter already discussed about methods of the research, including research design, variables of the research, data sources, instrument, data collection, data analysis, data treatment, and hypothesis testing.

V. CONCLUSIONS AND SUGGESTION

5.1 Conclusions

This study examined the implementation of I-Think mapping in improving students' reading comprehension. The research findings demonstrate that I-Think mapping significantly improved students' reading comprehension. Although students had some prior knowledge of descriptive texts, their initial comprehension skills were not optimal. After the implementation of I-Think mapping, students showed a clear improvement in their understanding of the material.

The use of I-Think mapping not only facilitated better organization of information but also improved critical thinking skills. It helped students organize and categorize information in a clear and systematic way, making it easier for them to identify key points and relationships within the text. Discussions and guiding questions played a crucial role in addressing students' challenges in understanding descriptive texts. Additionally, the triggers or guiding questions throughout the process were key to encouraging critical thinking and deeper engagement. Statistical analysis confirmed the effectiveness of the strategy, showing a significant improvement in student performance and supporting the conclusion that I-Think mapping is an effective strategy for improving reading comprehension, especially in lower secondary school settings.

5.2 Suggestions

5.2.1 Suggestions for English Teacher

a. Teachers should consider finding ways to adapt I-Think mapping for time-constrained classroom settings, as it can be time-consuming. This might involve shortening the length of each mapping session or focusing on specific steps of the method to keep it effective. Adjusting the approach to fit the available time without sacrificing its impact will ensure the strategy effective for improving reading comprehension.

b. Teachers can address variability in student participation by incorporating more structured activities that promote active involvement from all students. This could involve small group discussions, peer collaboration, or interactive tasks. By providing additional support and ensuring students are engaged, teachers can encourage consistent participation and maximize the effectiveness of I-Think mapping.

c. Since I-Think mapping is especially effective in helping students identify key details and make inferences, teachers should plan activities that improve these skills. Activities that focus on recognizing important information and drawing logical conclusions from texts can be regularly integrated into lessons, helping students improve their reading comprehension abilities.

5.2.2 Suggestions for Further Researcher

a. Researchers can examine the impact of I-Think mapping on students' motivation and attitudes toward reading. Studies could explore whether this technique encourages students to engage more actively with texts and fosters a positive attitude toward reading in English.

b. Further studies could compare the effectiveness of I-Think mapping with other reading comprehension strategies, to determine which methods work best for different types of texts or student groups.

c. Further researchers can examine the application of I-Think mapping in different educational contexts, such as teaching reading comprehension for other text genres (e.g., narrative, procedural).

d. Researchers could focus on developing modified versions of I-Think mapping tailored to specific learning objectives, grammar understanding through mapping activities.

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