THE COMPARISON BETWEEN THE COMBINATION OF COGNITIVE AND METACOGNITIVE STRATEGIES AND COGNITIVE STRATEGIES IN READING COMPREHENSION

Thesis

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BANDAR LAMPUNG
2024

ABSTRACT

THE COMPARISON BETWEEN THE COMBINATION OF COGNITIVE AND METACOGNITIVE STRATEGIES AND COGNITIVE STRATEGIES IN READING COMPREHENSION

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The current study was to explore i) whether or not there was a statistically significant difference of reading comprehension between the students taught through the combination of cognitive and metacognitive strategies and those through the cognitive strategies, ii) the effect of the combination of cognitive and metacognitive strategies and the cognitive strategies on every single aspect of reading. This study employed a true experimental design. The participants of this study were sixty-nine students at the tenth grade of SMK Darul A'mal. The data were collected using reading comprehension test.

The results showed that there was a statistically significant difference of reading comprehension between the students taught through the combination of cognitive and metacognitive strategies and those through the cognitive strategies. That is, the students provided with the combination of cognitive and metacognitive strategies had better reading comprehension achievement than those with only cognitive strategies. Other findings also showed that both strategies, the combination of cognitive and metacognitive strategies, and cognitive strategies significantly improved the students' reading achievement, in spite the fact that the students in experimental group had higher than those in the control group. This suggests that both strategies could be implemented to facilitate students to improve their reading comprehension.

Keywords: Reading Comprehension, Cognitive Strategies, Cognitive and Metacognitive Strategies.

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Thesis

Submitted in a Partial Fulfillment of

The Requirements for S-2 Degree

in

Master of English Education Study Program
Department of Language and Arts Education
Faculty of Teacher Training and Education

**FACULTY OF TEACHER TRAINING AND EDUCATION
UNIVERSITY OF LAMPUNG
BANDAR LAMPUNG
2024**

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LEMBAR PERNYATAAN

Dengan ini saya menyatakan dengan sebenarnya bahwa:

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DEDICATION

To my perfect parents.

My mother Asmarani, S.Pd., and my father Edy Rudiyanto, S.E., S.H.

who have helped the author to keep on going each and every day.

MOTTO

فَإِنَّ مَعَ لْعُسْرِ يُسْرًا

fa-inna ma'a al'usri yusraan

"*Karena sesungguhnya sesudah kesulitan itu ada kemudahan*"

"Surely with difficulty is ease"

(QS. Al-Insyirah: 5)

ACKNOWLEDGEMENTS

I am Haanii Pradini an author of this thesis would like to express my gratitude, praise, and thanks to Allah, the Almighty God, for blessing the author with health, determination, and perseverance to finish this thesis. This thesis with respect to "The Comparison between the Combination of Cognitive and Metacognitive Strategies and Cognitive Strategies in Reading Comprehension" as one of the requirements to finish the master degree at Master of English Education Study Program, Department of Language and Arts Education, Faculty of Teacher Training and Education, University of Lampung. Having done this work, the author realized that there are many people who gave support, guidance, and advice for finishing this thesis. Therefore, I am sincerely and deeply grateful to:

1. The advisor, Dr. Feni Munifatullah, M.Hum., for giving the knowledge, kindness, valuable advice, and highly contributed to the accomplishment of the research.

2. The co-advisor, Mahpul, M.A., Ph.D., who has highly contributed and gave his insightful, evaluation, encouragement, and feedback during the completion of the research.

3. The first examiner, Prof. Ag. Bambang Setiyadi, M.A., Ph.D., for giving the suggestion, constructive feedback, motivation, and comment to this research.

Bandar Lampung, 12 June 2024
The Author

Haanii Pradini

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I. INTRODUCTION

This chapter is concerned with the introduction of the research. It includes the background of the research, research questions, objectives of the research, significances of the research, scope of the research, and definition of terms.

1.1. Background of The Research

Reading helps people develop their language and knowledge. Reading means centrally a comprehending process and reading is the process of receiving and interpreting information encoded in language form, while comprehension occurs when the reader extracts and integrates various information from the text and combines it with what is already known (Grabe, 2009). There is no reading without comprehension (Goodman and Goodman, 2014). This suggests, there is a relationship between reading and comprehension. When we read, we use our eyes to receive the written symbols and our brains to convert those into words, sentences, and paragraphs that communicate something to us. In line, reading comprehension is the process of simultaneously extracting and constructing meaning through interaction and involvement with written language (Snow, 2002; Woolley, 2011).

However, EFL students often face some challenges in comprehending English texts. Because, in reading students are not only required to understand the direct meaning

of the text but also to understand the implied ideas of the text (Al-Alwan, 2012). Nevertheless, students might not be able to comprehend the text because of their lack of ability to relate the text to its context, they do not understand reading strategies, and the length of the text makes them not interested in reading a text (Lisiana, Yelliza, and Putri, 2021; Sari, 2016). Asmara (2017) found that most of the students are not concerned with their reading behaviors, and they do not know how to guess the meaning of unfamiliar words within the context.

Mastering the reading skill is a challenge. Reading is very complicated because it is an activity carried out with cooperation that requires comprehending what is written in the text as a process to gain information. Prater (2014) reading comprehension is a complex interaction between text factors, including text structure and content, and reader factors such as background knowledge and strategy use. Grabe and Stoller (2013) described reading comprehension as remarkably complex, involving many processing skills are coordinated in very efficient combinations. Paris and Hamilton (2014) clarified reading comprehension as an active and complex process that involves understanding written text, developing and interpreting meaning, and using meaning as appropriate to the type of text, purpose, and situation.

Furthermore, several aspects of reading are needed to be involved in reading in comprehending the written text, the main idea, supporting detail, references, inference, and vocabulary are the necessary aspects to understand the meaning (Parris, Gambrell, and Schleicher, 2015; Roe, Smith, and Kolodziej, 2018). Oakhill,

Cain, and Elbro (2019) showed when a reader comprehends a text, the components of reading comprehension are weaved tightly together. In other words, good reading comprehension depends on knowledge of the meanings of the words in the text. If students cannot comprehend their reading materials well, they will not be able to achieve high academic achievement (Iwai, 2009). Therefore, the students need to master reading comprehension.

Concerning the background, teaching reading to the students is regarded as necessary. To comprehend the written text well, it is recommended that teachers apply strategies during the learning process. Suitable strategies are needed to help the students achieve optimal reading comprehension. Many strategies can be implemented by the students. Grabe (2009) argued that some strategies and combinations of strategies can over time become fairly routine responses to reading goals. In this case, strategies to teach students, especially reading comprehension used in this research.

Therefore, the strategies can be classified in this research into cognitive strategies and metacognitive strategies. O'Malley and Chamot (1990) defined cognitive strategies as behaviors that involve mental manipulations or translations of materials or tasks that improve comprehension, acquisition, or retention. Dole, Nokes, and Drits (2014) argued cognitive strategies are mental routines or procedures for accomplishing cognitive goals like solving a problem, studying for a test, or understanding what is being read. Zhang (2018) stated cognitive strategies are closely related to students' specific cognitive behavior of reading

comprehension. In other words, cognitive strategies are viewed as the conscious mental behaviors or activities used by readers to actualize their plans in language use situations, especially in reading comprehension.

Bouchard (2005) mentioned metacognitive strategies mean knowing what we know or intentionally monitoring our thinking. O'Malley and Chamot (1990) drawn on metacognitive strategies that involve thinking about or having knowledge of the learning process, planning for learning, monitoring learning while it is taking place, or self-evaluation of learning after the task has been completed. Dole, Nokes, and Drits (2014) called metacognitive strategies a specific set of general cognitive strategies are particularly relevant to comprehension. Baker, DeWyngaert, and Zeliger-Kandasamy (2015) pointed out that metacognitive strategies can enhance comprehension. In line, metacognitive strategies are routines that allow individuals to have competent reading comprehension.

There were several relevant studies dealing with cognitive strategies in reading comprehension on students conducted by previous researchers. (Asmara, 2017; Marzuki, Alim, and Wekke, 2018; Sua, 2021; Thu', Anh, and Nam 2019; Tunga, 2020) showed that the implementation of cognitive strategies can facilitate reading comprehension of a text and improve the reading comprehension of students. Furthermore, various researchers examined the metacognitive strategies for reading comprehension on students. (Al-Kiyumi, Al Seyabi, and Hassan, 2021; Annury et al., 2019; Daguay-James and Bulusan, 2020; Ghaith and El-Sanyoura, 2019;

Mohseni, Seifoori, and Ahangari, 2020) revealed the students used metacognitive strategies to help them increase their reading comprehension.

Although previous studies on EFL have appeared, the focus was not restricted to vocational high school. However, the previous studies have been well documented, but Thongwichit (2019) showed that readers lack a strategy for making a summary when they read with the use of cognitive strategies in reading comprehension. Furthermore, some students faced difficulties using the strategy due to their lack of vocabulary knowledge (Thu', Anh, and Nam, 2019). Moreover, Tunga (2020) explained some of the participants in his study, the low achievers really cannot understand and get the points of the text with cognitive strategy.

In addition, reading comprehension occurs in real-time, so it is crucial that the reader can access word meanings (and indeed, other sorts of knowledge), rapidly and accurately (Oakhill, Cain, and Elbro, 2019). Here, a higher-level process in language learning should be added to the requirements for having good reading comprehension. Metacognitive strategies should be applied to a higher-level process in reading comprehension that leads students to oversee and manage their learning (Wenden, 1998). Forrest-Pressley, Donna-Lynn, and Waller (1984) supported the metacognitive process refers to the control or executive processes that direct cognitive processes and lead to the efficient use of cognitive strategies.

Prasetyorini (2017) conducted a study that readers using cognitive strategies through a variety of methods, and then recognize using metacognitive strategies

when they lack understanding and consequently, choose the right tools to solve the problem. On the other hand, Anderson (2005) addressed how metacognitive strategies have a direct effect on cognitive strategies. Phakiti (2008) showed metacognitive strategies have a positive relationship to cognitive strategies used in reading comprehension. National Reading Panel (2000) showed that both cognitive and metacognitive strategies shown through meta-analyses are effective when taught individually or in combination. Brasseur-Hock, Hock, and Deshler (2015) drew that cognitive and metacognitive strategies can and must be taught to struggling readers, especially when they encounter unfriendly texts, to help them compensate for a lack of prior knowledge. Hence, cognitive and metacognitive strategies are related to language use situations.

Based on the explanation, the researcher assumes those have not investigated the combination of cognitive and metacognitive strategies used at one time. The current research tried to find out whether or not a difference in using cognitive strategies itself compares with cognitive and metacognitive strategies, as suggested by the previous researchers, cognitive strategies essentially needed to be further investigated and have weaknesses. In this regard, the researcher believes that to find the most effective strategies to be used, the strategies need to be compared. In correlation with this concept, the cognitive and metacognitive strategies is important to be contrasted with cognitive strategies because the advantage of cognitive strategies in classroom instruction and learning is fundamental to successful learning (Ozek and Civelek, 2006).

1.2. Research Questions

Based on the background of the research, the researcher decides to formulate the research questions as follows:

1. Is there any significant difference in reading comprehension between the students who were taught through cognitive strategies and those through cognitive and metacognitive strategies?

2. Which aspect of reading statistically significantly improve after the students were taught the cognitive strategies and those through cognitive and metacognitive strategies?

1.3. Objectives of The Research

Referring to the research questions, the objectives of the present research are:

1. To find out the significant difference in reading comprehension between the students who were taught through cognitive strategies and those through cognitive and metacognitive strategies.

2. To find out which aspect of reading statistically significantly improve after the students were taught the cognitive strategies and those through cognitive and metacognitive strategies.

1.4. Significances of The Research

Generally, the present research is expected to be useful both theoretically and practically. The significances are:

1. Theoretically, the focuses of this present research are to contribute to the previous research and relevant theory about using cognitive strategies and metacognitive strategies on reading comprehension, and the present research expects to

contribute to a reference for further research related to the use of cognitive strategies and metacognitive strategies on reading comprehension.

2. Practically, the present research expects to give English teachers or students a consideration about the use of cognitive and metacognitive strategies especially in reading comprehension and the focus of this present research is to explore the effective design of strategies in teaching reading.

1.5. Scope of The Research

The scope of this research focuses on the results of students who use cognitive and metacognitive strategies has a significant difference from the results of students who use cognitive strategies. Also, this research focuses on the reading aspect that statistically significantly improve after taught through the cognitive strategies and through the cognitive and metacognitive strategies. Then, the data on reading comprehension achievement is taken from the reading comprehension test. There are two tests in reading comprehension achievement: the pre-test as the test before using cognitive strategies and before using cognitive and metacognitive strategies; the post-test as the test after using cognitive strategies and after using cognitive and metacognitive strategies.

1.6. Definition of Terms

In this research some terms are defined well as follows:

1. Reading comprehension

    Reading comprehension means the ability to process, understand, and comprehend the text by using the eyes and the brain to get the information, meaning, and answer the questions from the content of the text.

2. Cognitive strategies

In reading comprehension, cognitive strategies are related to the target language and world of knowledge of the students, which help them to process meaning from text, and cognitive strategies are needed to perform a task.

3. Metacognitive strategies

In reading comprehension, metacognitive strategies are related to self-management or self-regulation in a given reading activity and metacognitive strategies are needed to understand how the task is performed.

This chapter is concerned with the background of the research, research questions, objectives of the research, significances of the research, scope of the research, and definition of terms.

II. LITERATURE REVIEW

This chapter is examined the literature review, which covers several topics such as reading comprehension, cognitive strategies, cognitive and metacognitive strategies, procedures of teaching reading comprehension through cognitive strategies and through cognitive and metacognitive strategies, theoretical assumption, and hypotheses.

2.1. Reading Comprehension

Numerous theories provide definitions for the term reading comprehension. Those theories have various assumptions concerning this term. It is because each person reads for a different reason, with a different background and importance. Because of these factors, the researcher defined the term reading comprehension from a variety of perspectives. The explanations described in this section.

Reading comprehension is the process of elaborating the meaning of a text to reach an understanding in the teaching-learning activity. Indeed, reading is how the readers gain the meaning of current information provided in the text and comprehension is a process of negotiating and understanding between the readers and text. Grabe and Stoller (2013) mentioned reading is the ability to draw meaning from the printed text and interpret this information appropriately. Deshler et al.

(2011) described comprehension as an active process of interpretation that draws on the readers' rich knowledge base of understanding. Torres and Constain (2009) established that reading is the process of identification, interpretation, and perception of written or printed material while comprehension is the understanding of the meaning of written material and involves the conscious strategies that lead to understanding. The process of reading deals with language form, while comprehension has to do with final result, which deals with content.

Reading comprehension also defined as the process of understanding and interpreting information from text to construct meaning. According to Fox and Alexander (2014), reading comprehension is the extraction and assembly or reconstruction of a message contained in a text. Reading comprehension is the process of simultaneously extracting and constructing meaning through interaction and involvement with written language (Edwards and Turner, 2014). The definition of reading comprehension refers to the process of simultaneously extracting and constructing meaning through interaction and involvement with written language (Rueda, 2011). Woolley (2011) added reading comprehension intends to be an interactive process that requires readers to actively construct meaningful representations of text information.

Meanwhile, this process usually entails understanding information presented in text form. It means the result of reading comprehension is the reader gets the meaning of the text through a process of transferring ideas. It can be said that the students not only hoped to know the word but also its meaning. However, Mikulecky and Jeffries (2007) argued reading comprehension is a complex activity that involves a

wide variety of skills. Your ability to understand and remember what you read depends in large part on your ability to apply these skills to your reading. Roe, Smith, and Kolodziej (2018) stated reading comprehension is a complex act that can be viewed as having two parts: the reading process and the reading product.

Thus, reading comprehension is a complex act with many aspects that must be considered. The aspects of the reading process make this principle clear. Determining the main idea, supporting detail, references, inference, and understanding vocabulary are the aspects of reading comprehension. To support the students in reading comprehension, the students should master certain aspects such as determining the main idea, supporting detail, references, inference, and understanding vocabulary (Parris, Gambrell, and Schleicher, 2015; Roe, Smith, and Kolodziej, 2018). The explanations of the aspects are as follows.

1. Main idea

The main idea is the important information since it talks about the overall idea of a paragraph or section of the text. It is usually a complete sentence that include the gist of a central point. To gain the main idea, readers need to preview and find information from the text. The main idea might be stated anywhere in the text. Sometimes in the first or the last sentences of each paragraph. Each paragraph has at least one main idea therefore, this aspect becomes important for the readers to know the generalization concept about the paragraph. Afflerbach and Cho (2009) argued looking for related words, concepts, and ideas in a text is used to construct a main idea. Hence, the main idea refers to the key statement,

when the readers get the key, it will be easier to grab the information from the whole text.

2. Supporting detail

Supporting detail provides the readers with more information about the facts, opinions, reasons, ideas, definitions, and examples that explain or prove the main idea. Furthermore, it is introduced in a sentence of a text that assists the readers to see the big picture in a text. However, supporting detail can be used as the description or illustration of the content that is mentioned explicitly in the text. As shown in LearningExpress (2005) details in reading comprehension can be very important clues that may help readers. In this case, readers need to read the text carefully because supporting detail can be useful for readers to get the general ideas about a text.

3. References

References are the kind of words or phrases that refer to pronouns or noun phrases that accustomed to represent persons, locations, or circumstances. Those are used to avoid repetition of words or phrases. Also, used to be a signal to the readers to find the referring words in the text that were pointed out by the author. Besides, references can be used to make the text coherent. Jacobs and Ippolito (2015) assumed texts create chains of reference that range from simple connections (pronouns to proper nouns) to complex chains (connections between abstract concepts across time and space).

4. Inference

Inference is an output of the interaction between the reader's knowledge and the information based on available facts in the text. However, inference is using

content in a text to come as a personal judgment or assumption about something that is not stated explicitly in the text. Duffy (2009) mentioned prediction is an inference that uses background knowledge or personal experience to infer the meaning of the cue. For instance, the readers must make a calculated guess as to an author's meaning. Even the author is operating from one set of experiences and the readers from another. Thus, the inference is a statement about what is not directly stated in the text based on the cue given.

5. Vocabulary

The term vocabulary means all the words which exist in a particular language to communicate with others. In the same vein, Roe, Smith, and Kolodziej (2018) pointed out that words fit the context of the selection as vocabulary. Concern with vocabulary that plays an important role in understanding the meaning of context by identifying the synonyms, antonyms, compound words and their components, and also grammatical categories. Vocabulary in content can be seen from the prefixes, suffixes, and roots those are similar, grammatical context, and semantic context that may give clues. Context helps readers make a general significance judgment. It means that imaging from the context can help readers understand the meaning of a text without stopping in a dictionary to look up any new word. Come to those statements indeed vocabulary means a fundamental thing for every reader who wants to get input such as information.

From those numerous theories, it can be known that reading comprehension means the complex process of readers gaining the message deeply from the detail in the text they read. In other words, students interpret the information and store the

knowledge that is contained in the text. Simply put, reading comprehension is the act of readers and text to know and extract the information in the text about the aspects namely main idea, supporting detail, references, inference, and vocabulary.

2.2. Cognitive Strategies

Cognitive strategies are closely related to students' specific cognitive behavior of reading comprehension. In other words, cognitive strategies are viewed as the conscious mental behaviors or activities used by readers to actualize language use situations, especially in reading comprehension. Students connect anything that is going to be learned with any available and other things. Cognitive strategies are also known as tools used for controlling the reading comprehension process. Thereby, cognitive strategies are believed to help students control the information processing system in the management of knowledge. (Afflerbach and Cho, 2009; Dole, Nokes, and Drits, 2014) defined that cognitive strategies focused on constructing meaning that readers use to help them comprehend better. It means that cognitive strategies are appropriate for reading comprehension.

Cognitive strategies in essence used to help students achieve a particular goal that is understanding a text. The students interact with the material to be learned by manipulating it mentally (as in making mental images or relating new information to previously acquired concepts or skills) or physically (as in grouping items to be learned in meaningful categories or taking notes on or making summaries of important information to be remembered). According to Bouchard (2005) making inferences, visualizing, and predicting are all examples of cognitive strategies. With this, students manipulate the material to be learned mentally (visualizing, for

example) or physically (such as note taking or creating graphic organizers). Therefore, O'Malley and Chamot (1990) mentioned a detailed explanation of cognitive strategies in reading comprehension that explained below.

1. Note taking

Note taking means writing down keywords or concepts in abbreviated verbal, graphic, or numerical form while reading. Note taking makes students become active participants in their learning, helps them organize important concepts, remember information, and become one of their study aids. In addition, note taking is very helpful for the students to tackle their problems. However, Oxford (1990) assumed this strategy can be implemented by writing down the specific points. In the current research, note taking is represented by underlining the important sentences, afterwards, students should write the important points of those sentences.

2. Summarizing

Summarizing refers to making a mental or written summary of new information gained through reading. The process of summarizing enables students to grasp the original text better and students understand it as well. In addition, the knowledge that students gain by summarizing make it possible for them to analyze and critique the original text. Going further, summarizing is applied by sorting through the information presented in the text to extract the essential ideas. Phakiti (2003) described reading the whole passage and at the same time, if the text is understandable going further to other parts of the passage. In this current research, summarizing is applied by students with read the text quickly to determine the topic of the text.

3. Elaboration

Relating new information to prior knowledge, relating different parts of new information to each other, or making meaningful personal associations with the new information are the description of elaboration. This strategy refers to using knowledge about the world and the contents of the text that contributes to obtaining and processing the text. Moreover, elaboration refers to additional processing of the text by the readers, which may increase comprehension. It involves forming a connection between the text and the reader's background knowledge of the subject. Thereby, students should build meaning by linking text information to what they already known. In the current research, elaboration is represented as thinking about previous knowledge on the topic of the text or associating it with background knowledge.

4. Inferencing

Inferencing means using available information to guess the meanings or usage of unfamiliar language items associated with a language task, to predict outcomes, or to fill in missing information from context. Use immediate and extended context to guess new words and skip the unknown words. In this sense, inferencing refers to the process of reading in which readers go beyond or collect relevant information given in the text through implication to fill in meaning gaps in the text. However, when inferencing students can guess meaning from keywords, structures, pictures, context, etc. Thus, in the current research inferencing is represented by the strategy of using the available clues in the text to find the meaning of some unfamiliar words and using title to predict the content

of the text, and paying attention to words or phrases that show how text is organized.

5. Grouping

Grouping involves ordering or labeling material used in a language task based on common attributes. In other words, grouping in reading involves classifying or reclassifying what is read into meaningful groups, and reducing the number of unrelated elements. Readers attend to extended written texts segment or chunk information into words or phrases depending on the level at which the information is most meaningful. Grouping is applied to learn vocabulary definitions. This strategy is also useful for building connections between related ideas, as is discussed later. In the current research, grouping is represented by the strategy of classifying the unfamiliar words before the students read the text.

Besides, the cognitive strategies used in the current research are note taking, summarizing, elaboration, inferencing, and grouping. Here, cognitive strategies serve to support the students as they develop internal procedures that enable them to perform complex texts. In this case, cognitive strategies are seen as mental processes directly concerned with the processing of information to learn, that is for obtaining, storage, retrieval, or use of information.

2.3. Cognitive and Metacognitive Strategies

Cognitive strategies and metacognitive strategies become the focus of this current research. These strategies are used for students with reading comprehension. Phakiti (2008) argued metacognitive strategies are conscious processes that regulate cognitive strategies, action, and other processing which consist of planning,

monitoring, and evaluating strategies. Armbruster, Lehr, and Osborn (2010) pointed out that metacognitive strategies to think about and have control over their reading. Before reading, readers might clarify their purpose for reading and preview the text. During reading, readers might monitor their understanding, adjusting their reading speed to fit the difficulty of the text, and fixing up any comprehension problems they have. After reading, readers check their understanding of what they read.

However, students in comprehending texts with reading, students are not only required to get the direct meaning of the text but also to get the implied ideas of the text. Therefore, good and effective reading comprehension requires directed cognitive effort, which is possible only through metacognitive strategies. It seems that metacognitive is contingent on cognitive. Metacognitive strategies also help the readers to focus their attention, and control and monitor the reading process. Furthermore, cognitive activities referring to the task at hand cannot take place without metacognitive planning. Thus, cognitive strategies such as problem-solving reading strategies and metacognitive strategies as global reading strategies. Singhal (2001) stated cognitive strategies are used by students to transform or manipulate the language. It helps the students to remember and retrieve information referred to as memory strategies. Singhal (2001) added metacognitive strategies are behaviors undertaken by students to plan, arrange, and evaluate their learning. O'Malley and Chamot (1990) mentioned such strategies about metacognitive strategies in reading comprehension such as:

1. Planning

Previewing the concepts of the material to be learned. Deciding necessary components to carry out an upcoming language task and ignore irrelevant

distractors. Understanding the conditions that help one learn and arranging for the presence of those conditions. In planning, the students preview the main idea, read a text quickly, plan what to do, read selectively, find specific information, attend to keywords, and plan when, where, and how to study.

2. Monitoring

Checking one's comprehension during reading or checking the accuracy and/or appropriateness of one's written production while it is taking place. Reviewing attention to a task, comprehension of information that should be remembered, or production while it is occurring. In monitoring students thinking while reading or checking one's comprehension during reading.

3. Evaluating

Checking the outcomes of one's language learning against a standard after it has been completed. Checking comprehension after completion of a receptive language activity, or evaluating language production after it has taken place. In evaluating, students check back, reflect on what they have learned, or judge how well one has accomplished a learning task.

According to Brown and Palincsar (1982) cognitive strategies are more directly related to individual learning tasks and entail direct manipulation or transformation of the learning materials, while metacognitive strategies involve thinking about the learning process, planning for learning, monitoring comprehension or production while it is taking place, and self-evaluation after the learning activity has been completed. Concerning this point, Gascoigne (2008) explained that cognitive strategies are direct strategies used to orchestrate the mental processing of a target

language. Even so, metacognitive strategies are indirect strategies used to monitor the self while engaging in an activity such as reading.

Regarding the explanations about cognitive and metacognitive strategies, Zhang (2018) cognitive strategies and metacognitive strategies are very important in language use situations. It can be known that cognitive strategies such as note taking, elaboration, grouping, inferencing, and summarizing are specific actions and procedures which students use while working directly with the text and make comprehension easier. While, metacognitive strategies such as planning, monitoring, and evaluating are used for guiding the learning process itself to monitor their reading. Zhang (2018) demonstrated that metacognitive and cognitive strategies are correlated.

2.4. Procedures of Teaching Reading Comprehension through Cognitive Strategies and through Cognitive and Metacognitive Strategies

In this research, cognitive strategies are combined by using metacognitive strategies. Yet, in applying the strategies for reading comprehension there must be an appropriate manner that can be used so that the process can be achieved by the wishes, as well as in applying strategies of cognitive and metacognitive strategies to the students. The activities in developing cognitive and metacognitive strategies in reading comprehension are also adopted from O'Malley and Chamot (1990), the procedures of cognitive and cognitive and metacognitive strategies described in this part.

Table 2.1. The Procedures of Cognitive Strategies and Cognitive and Metacognitive Strategies

Cognitive Strategies		**Cognitive and Metacognitive Strategies**	
Pre Activity Teacher guides the students to know five aspects of reading comprehension, know the use of cognitive strategies in order to help students in reading comprehension and support them to answer the test.	Teacher guides students to use cognitive strategies such as: 1. Use note taking to get the main idea in the text. 2. Use summarizing to know the supporting detail in the text. 3. Use elaboration to get the reference in the text. 4. Use inferencing to know inference in the text. 5. Use grouping to classify or labelling what is read into meaningful groups and help them building connections between related ideas to words or vocabulary towards classify unfamiliar words.	*Pre Activity* Teacher guides the students to know five aspects of reading comprehension, know the use of cognitive strategies, know the use of metacognitive strategies in order to help students in reading comprehension and support them to answer the test.	1. Teacher guides the students to use cognitive strategies such as note taking, summarizing, elaboration, inferencing, and grouping while students reading the text; and metacognitive strategies such as planning, monitoring, and evaluating as the tools that covers phases in reading the text. 2. In addition, before reading or in planning phase, the students list difficult words and discuss them to develop their vocabulary mastery to help students comprehend the text. The teacher provides students with grammatical items retrieved from the text particularly related to the questions of reading to help students understand the questions regarding inference and reference.
Main Activity Students are asked to do the exercise to make them use cognitive strategies, understand five aspects of reading comprehension, and support them to practice in answering the test. Then, teacher gives the key answer after students finished in answering the exercise in order	Students engage in activities in which they apply the cognitive strategies that they have learnt before. 1. Students use note taking to get the main idea in the text through write the keywords or words that mostly appear in the text, underline the important sentence and predict the point of the sentence which related to the content of the text. 2. Students use summarizing to know the supporting detail in the text through extract the ideas in the text (facts, opinions, reasons, definitions, and examples which is related to the context that is mentioned).	*Main Activity* Teacher gives the exercise including text, questions, and options answer with five aspects of reading comprehension to make students use the cognitive strategies, metacognitive strategies, understand five aspects of reading comprehension and support to practice in answering the test.	1. Before reading or in planning phase, students decide the necessary components to carry out an upcoming purpose or reading exercise and ignore irrelevant distractors. 2. During reading or in monitoring phase, a) Students use note taking to get the main idea in the text through write the keywords or words that mostly appear in the text, underline the important sentence and predict the point of the sentence which related to the content of the text. b) Students use summarizing to know the supporting detail in the text through extract the ideas in the text (facts, opinions, reasons, definitions, and examples) which is related to the context that is mentioned. c) Students use elaboration to get the reference in the text through forming a connection between the words (noun or pronoun) and their meaningful personal associations about the content of the

Cognitive Strategies		Cognitive and Metacognitive Strategies	
to make them check their reading comprehension.	3. Students use elaboration to get the reference in the text through forming a connection between the words (noun or pronoun) and their meaningful personal associations about the content of the text or through relating the new information to their prior knowledge, relating the different parts of new information to each other, or making a meaningful personal association with the new information. 4. Students use inferencing to know the inference in the text through construct the meaning of the text with their personal judgement or assumption about the statement or through state the synonym of the statement in different types. 5. Students use grouping to get ideas about words or vocabulary in the text through ordering the words whether it is a noun, verb, adjective, or adverb as a clue, then connect the clue to the words or sentence that might be located before or after the clue.	Then, teacher gives the key answer after students finished in answering the exercise in order to make students check their reading comprehension.	text or through relating the new information to their prior knowledge, relating the different parts of new information to each other, or making a meaningful personal association with the new information. d) Students use inferencing to know the inference in the text through construct the meaning of the text with their personal judgement or assumption about the statement or through state the synonym of the statement in different types. e) Students use grouping to get ideas about words or vocabulary in the text through ordering the words whether it is a noun, verb, adjective, or adverb as a clue, then connect the clue to the words or sentence that might be located before or after the clue. 3. After reading or in evaluating phase, students check or confirm their information or prediction whether it is correct or not through skimming the text and fit it with the information of the text or with the options answer about the questions that mentioned in exercise. Or through reflecting information or prediction to the text in order to gain the purpose (getting main idea, supporting detail, references, inference, and vocabulary). At the end, after the students finish in answering the exercise, the teacher gives the key answer to make students check their reading comprehension.
Post Activity Students are asked to do reading comprehension test in multiple choice form.	The test is used to measure students in reading the text and hopefully to make them apply the strategies to different genre of the texts later on.	*Post Activity* Students are asked to do reading comprehension test in multiple choice form.	The test is used to measure students in reading the text and hopefully to make them apply the strategies to different genre of the texts later on.

Hence in this research utilizing the cognitive and metacognitive strategies offers the opportunity to establish better reading comprehension. Roe, Smith, and Kolodziej (2018) supported that in the use of procedure reading activity provides a structure for integrating strategies to use. It means that the process of reading (before reading, during reading, and after reading) can be implemented by using metacognitive strategies (planning, monitoring, evaluating) and cognitive strategies (note taking, summarizing, elaboration, inferencing, and grouping).

2.5. Theoretical Assumption

Regarding the theories stated previously, the reading comprehension of students is the focus of the present research. In line, previous researchers conduct research that shows the use of strategies in improving students' reading comprehension. In accordance with the strategies in reading comprehension, cognitive strategies and metacognitive strategies bring some benefits to reading comprehension for students. As the previous explanations, the researcher combined the strategies for reading comprehension through cognitive and metacognitive strategies. In this case, both strategies are can contribute or support students to do reading comprehension tests.

However, the application of these strategies applied at the same time. In the current research, the process of reading is divided into three stages such as before reading, during reading, and after reading. Meanwhile, metacognitive strategies (planning, monitoring, and evaluating) are used in those stages, planning is applied as before reading stage, monitoring is applied as during reading stage, and evaluating is

applied as after reading stage. Also, cognitive strategies (note taking, summarizing, elaboration, inferencing, and grouping) are implemented in the metacognitive strategies (monitoring or during reading stage).

Therefore, the researcher in this current research compares the difference between the students who are taught through cognitive strategies and those through cognitive and metacognitive strategies, also compares the improvement in aspect of reading between the cognitive strategies and the cognitive and metacognitive strategies after the treatment.

2.6. Hypotheses

In conducting this research, hypotheses must be developed based on the issue identified in chapter I. Regarding to the concerning mentioned in the previous chapter, this research offers hypotheses as follow:

H_{01}: There is no significant difference in reading comprehension between the students who are taught through cognitive strategies, and those through cognitive strategies and metacognitive strategies.

H_{A1}: There is a significant difference in reading comprehension between the students who were taught through cognitive strategies, and those through cognitive strategies and metacognitive strategies.

H_{02}: There is no statistically significantly improve in aspect of reading after the students were taught the cognitive strategies and those through cognitive strategies and metacognitive strategies.

H_{A2}: There is a statistically significantly improve in aspect of reading after the students were taught the cognitive strategies, and those through cognitive strategies and metacognitive strategies.

Briefly, the explanations of several topics in this chapter are examined about reading comprehension, cognitive strategies, cognitive and metacognitive strategies, procedures of teaching reading comprehension through cognitive strategies and through cognitive and metacognitive strategies, theoretical assumption, and hypotheses.

III. RESEARCH METHODS

This chapter is described the details of design, variables, population and sample, instrument, data collection procedure, data analysis, and hypotheses testing.

3.1. Design

In this research, the quantitative approach used by the researcher to investigate the difference in reading comprehension between the students who were taught through cognitive strategies and those through cognitive and metacognitive strategies, to find out the reading aspect that statistically significantly improve after taught through cognitive strategies and taught through cognitive and metacognitive strategies.

The design of the current research was true experimental because it has control of extraneous variables, which refers to Hatch and Farhady (1982). Creswell and Guetterman (2020) argued true experimental are experimental situations in which the researcher randomly assigns participants to different conditions (or levels) of the experimental variable. The subjects of this research were two groups, the experimental group and the control group. Both of the groups got a pre-test before the treatments to see their initial ability. The groups received different treatments

and receive post-test after the treatments. The pre-test and post-test scores are compared to determine the effectiveness of the treatment (Gay, Mills, and Airasian, 2012). The experimental group treated using cognitive and metacognitive strategies while the control group treated using cognitive strategies. The design for this current research shown in this part as illustrated by Hatch and Farhady (1982):

G1: T1 X T2

G2: T1 O T2

Notes:

G1: Experimental group.

G2: Control group.

T1: The pre-test of the students in control and experimental class.

T2: The post-test of the students in control and experimental class.

X: Treatment (cognitive and metacognitive strategies).

O: Treatment (cognitive strategies).

3.2. Variables

Sugiyono (2015) claimed that research variables refer to an attribute or a trait or value of an object or activity that has a certain variation determined by the researcher to be studied and then drawn conclusions. In this research, the researcher used independent and dependent variables. The independent variable is the variable that affects or is the cause of the change or the appearance of the dependent variable, while the dependent variable is the variable that is affected or is the result of the independent variable.

The following are independent variable and dependent variable of this research:

    1. Cognitive strategies as independent variable.

    2. Cognitive and metacognitive strategies as independent variable.

    3. Reading comprehension as dependent variable.

3.3. Population and Sample

As cited in Sugiyono (2015) population is a generalization area consisting of objects/subjects that have certain qualities and characteristics set by the researcher to be studied and to be concluded. The population of this research were tenth grade students of SMK Darul A'mal. Since the researcher used pre-test post-test design, the sample of this research was chosen through random sampling. According to Creswell and Guetterman (2020) random sampling is a quantitative sampling procedure in which the researcher selects participants (or units, such as schools) for the sample so that any sample of size N has an equal probability of being selected from the population. The intent of random sampling is to choose units to be sampled that will be representative of the population.

Fraenkel and Wallen (2018) assumed the advantage of random sampling is that, it is very likely to produce a representative sample. Obtaining a random sample is desirable because it helps ensure that one's sample is representative of a larger population. When a sample is representative, all the characteristics of the population are assumed to be present in the sample in the same degree. The researcher took two groups as the sample of this research, one group as an experimental group and the other group as control group.

3.4. Instrument

Wilkinson and Birmingham (2003) research instrument means simply devices for obtaining information relevant to research projects, and there are many alternatives from which to choose. The instrument of this research was a reading comprehension test. The test designed based on the learning objectives. In this case, the test used to see the students' reading comprehension. Moreover, the test contains five aspects of reading: main idea, supporting detail, inference, reference, and vocabulary in multiple-choice test.

The reading comprehension test conducted to determine the difference of teaching reading comprehension through cognitive strategies and through cognitive and metacognitive strategies. Furthermore, the reading comprehension test was administered to find out the aspect of reading that statistically significantly improve after taught through cognitive strategies and taught through cognitive and metacognitive strategies. The test used in the pre-test and post-test. Besides, in conducting the reading comprehension test for this research, the researcher focuses on determining the test item whether is applicable or not through the test's validity and reliability. The identifications are described in this term.

3.4.1. Validity of Reading Comprehension Test

Heaton (1983) explained that the validity of a test is the extent to which it measures what it is supposed to measure. Briefly, a test can be said valid if the test measures the object to be measured and is suitable for the criteria. It means that it relates directly to the purpose of the test. There are several types of validity, the researcher

uses content validity and construct validity to determine whether the test has strong validity. In this case, content validity depends on a careful analysis of the language being stated, while construct validity measures certain specific characteristics in accordance with a theory of language learning. The exposure of content validity and construct validity explained below.

1. Content validity. This kind of validity according to Heaton (1983) depends on a careful analysis of the language being tested and of the particular course objectives. In getting the content validity of the reading comprehension test, the items of a test should be correlated based on the standard competence for the tenth grade of SMK Darul A'mal. In other words, this research used narrative text that is based on the standard competence for the tenth grade of SMK Darul A'mal.

   In this research, scoring criteria rely on the five aspects of reading comprehension. (Parris, Gambrell, and Schleicher, 2015; Roe, Smith, and Kolodziej, 2018) asserted in reading comprehension, certain aspects are determining the main idea, supporting detail, references, inference, and understanding vocabulary. All test items that have good validity are accustomed to collecting the data for this research, while the bad ones should be revised. Therefore, every test item can be matched with the goal and the materials.

2. Construct validity. This type of validity as mentioned by Heaton (1983) assumed the existence of certain learning theories or constructs underlying the acquisition of abilities and skills. It means that construct validity is determining the kind of

test based on the theoretical which measures reading comprehension. This research makes a reading test that measures students' reading comprehension. The researcher examined it by referring to the theories of aspects of reading by (Parris, Gambrell, and Schleicher, 2015; Roe, Smith, and Kolodziej, 2018) there are main idea, supporting detail, reference, inference, and vocabulary.

Furthermore, to judge whether the reading comprehension test has validity or not, the three expert judgments as raters are used to check the items of a test are presented in table below.

Table 3.4.1. Validity of Reading Comprehension Test

No	Aspects and Item Numbers	Total
1.	Items number 9, 17, 27, 32, 40, 50, 55, 56, 59, 60 measure main idea.	10
2.	Items number 4, 10, 14, 24, 25, 31, 36, 44, 45, 48 measure supporting detail.	10
3.	Items number 2, 8, 23, 33, 39, 41, 42, 49, 54, 57 measure reference.	10
4.	Items number 1, 6, 13, 16, 20, 21, 28, 30, 35, 47 measure inference.	10
5.	Items number 3, 7, 15, 22, 29, 38, 46, 52, 53, 58 measure vocabulary.	10

3.4.2. Reliability of Reading Comprehension Test

Reliability means the consistency of the scores obtained and how consistent they are for each individual from one administration of the instrument to another. Reliability is a necessary characteristic of any good test. In other words, the instruments are accurate if the same subject is calculated on different occasions suggesting a similar result. Hatch and Farhady (1982) defined reliability as the extent to which a test produces consistent results when administered under similar conditions.

In this case, the researcher used the Split-Half Method to estimate whether the reliability of the test is appropriate for testing or not. In using the Split-Half Method, the researcher classifies the test items into two similar parts (the odd-numbered items and the even-numbered items). The researcher used Spearman Brown's Prophecy Formula to find out the reliability of the test. Moreover, Hatch and Farhady (1982) showed the formula to measure the correlation coefficient of the reliability between odd and even numbers. The formula that the researcher used for this research is explained in the following.

$$r1 = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$$

Notes:

r1: The correlation coefficient of reliability between odd and even number.

$\sum x$: The correct total number of odd number items.

$\sum y$: The correct total number of even number items.

$\sum x^2$: The square of x.

$\sum y^2$: The square of y.

The criteria are:

0.80-1.00   : High

0.50-0.79   : Moderate

0.00-0.49   : Low

Table 3.4.2. Reliability of Reading Comprehension Test

Reliability Statistics			
Cronbach's Alpha	Part 1	Value	.994
		N of Items	25a
	Part 2	Value	.993
		N of Items	25b
	Total N of Items		50
Correlation Between Forms			.995
Spearman-Brown Coefficient	Equal Length		.998
	Unequal Length		.998
Guttman Split-Half Coefficient			.977
a. The items are: I1, I2, I3, I4, I5, I6, I7, I8, I9, I10, I11, I12, I13, I14, I15, I16, I17, I18, I19, I20, I21, I22, I23, I24, I25.			
b. The items are: I26, I27, I28, I29, I30, I31, I32, I33, I34, I35, I36, I37, I38, I39, I40, I41, I42, I43, I44, I45, I46, I47, I48, I49, I50.			

The table above provided the information about reliability of reading comprehension test. Based on the table above, it is known that Guttman Split-Half Coefficient correlation value is 0.977. However, the value 0.977 > 0.80 which means the reliability of try out is high. Thus, it can be known that the reading comprehension test is reliable.

3.5. Data Collecting Procedure

The researcher prepared several procedures that should be done step by step. Through the procedures, this research will be conducted to collect the data.

1. Selected the material. Selecting the material was the first way that the researcher does. Selecting the reading materials determined by the levels of the students. Therefore, the researcher used the standard competence for the tenth grade of

SMK Darul A'mal. The material should cover the goal of teaching narrative text as the target of the achievement.

2. Determined the instrument of the research. The instrument in this research was a reading comprehension test. The researcher conducted a reading comprehension test for pre-test and post-test which covers five aspects of reading namely main idea, detail information, reference, inference, and vocabulary. The purpose of the test was to gather data the students' scores before and after treatment for both the experimental group and the control group.

3. Conducted the groups. The researcher took from two groups in the tenth grade of SMK Darul A'mal students that used random sampling. Therefore, the researcher replaced the teacher's teaching time in the school and focuses on teaching two groups, namely the experimental group and the control group.

4. Conducted a tryout of the reading comprehension test. This activity aimed at finding out whether the instruments are valid and reliable. If the result showed that the instruments are valid and reliable, it means that the instruments can be used to gather the data. Tryout the reading comprehension test given to the class which did not involve experimental or control groups. It was administered before the pre-test.

5. Administered the pre-test for both experimental and control groups. The pre-test is given for both of experimental group and control group before the treatment. This activity aims to make sure the first ability of students before the treatment relatively similar.

6. Administered the treatment. The treatment is given to students in experimental and control groups. During the treatment, cognitive and metacognitive strategies

are implemented in the experimental group while cognitive strategies are implemented in to control group.

7. Administered the post-test for both experimental and control groups. The post-test is given for both of experimental group and the control group after the treatment. This activity aims to find out the students' reading comprehension. Knowing the students' reading comprehension helps the researcher to see the difference in students' reading comprehension clearly before and after the treatment.

8. Analyzed the data. In this step of the research, the researcher scores the results of pre-test and post-test from the experimental group and control group. Then, the researcher concludes the results of the pre-test and the post-test administered by the students.

3.6. Data Analysis

The data in this research analyzed quantitatively. In this research, the researcher analyzed the data from a reading comprehension test. The steps are as follows:

1. The researcher analyzed the scores of pre-test and post-test in the experimental group and control group to find the score. The scores of the pre-test and post-test calculated by using the formula. The formula for calculating the score for the experimental group and control group described in the following:

$$S = \frac{r}{n} 100$$

Where:

S: The score of the test.

r: The total of right answers.

n: The total.

2. The score of the students' reading comprehension test tabulated using the Independent Sample T-test in Statistical Program for Social Science (SPSS). Independent Sample T-test used to compare scores of the experimental group and control group to know the difference.

3. The aspects of reading comprehension of the students calculated through the Anova in the Statistical Program for Social Science (SPSS). Anova used to compare the reading comprehension aspects in the experimental group and control group.

3.7. Hypotheses Testing

In this research, the hypotheses proposed to prove the hypotheses whether it was accepted or rejected. The hypotheses that were tested are mentioned bellow.

H_{01}: There is no significant difference in reading comprehension between the students who are taught through cognitive strategies, and those through cognitive strategies and metacognitive strategies.

H_{A1}: There is a significant difference in reading comprehension between the students who were taught through cognitive strategies, and those through cognitive strategies and metacognitive strategies.

H_{02}: There is no statistically significantly improve in aspect of reading after the students were taught the cognitive strategies and those through cognitive strategies and metacognitive strategies.

H_{A2}: There is a statistically significantly improve in aspect of reading after the students were taught the cognitive strategies, and those through cognitive strategies and metacognitive strategies.

Those all about the explanation of this chapter which consists of design, variables, population and sample, instrument, data collection procedure, data analysis, and hypotheses testing.

V. CONCLUSION AND SUGGESTION

This chapter is pointed out the conclusion and suggestion based on the research results and discussion of the use cognitive and metacognitive strategies in reading comprehension.

5.1. Conclusion

Considering all data gathered after finishing the research. This research has drawn up, when the students did cognitive strategies and also cognitive and metacognitive strategies in reading comprehension, it makes a relationship to written language, especially to the narrative text and gives an improvement to the students' reading comprehension. It is probable that it happens because of the strategies applied from the students derived from their ability. Cognitive strategies contribute during reading and metacognitive strategies contribute before, during, and after reading.

In sum, the data in this research showed that the supporting detail aspect of reading is statistically significantly improved when students applied cognitive strategies, and the reference aspect of reading is statistically significantly improved when students applied cognitive and metacognitive strategies. The students could get supporting detail aspect since they extracted the ideas in the text (facts, opinions,

reasons, definitions, and examples) then related to the context that is mentioned. Also, the students could get reference aspect since they formed a connection between the words (noun or pronoun) and their meaningful personal associations about the content of the text or relating the different parts of new information to each other.

5.2. Suggestion

In line with the results and conclusions of the research, the researcher would like to propose some suggestions for teachers and further researchers.

1. Suggestions for English Teachers

In applying cognitive and metacognitive strategies for students, the teachers can set the strategies based on the needs through write the keywords, forming a connection between the words, construct the meaning of the text with your personal judgement, ordering the words whether it is a noun, verb, adjective, or adverb as a clue, then connect the clue to the words or sentence that might be located before or after the clue, skimming the text and fit it with the information of the text.

The combination of cognitive strategies and metacognitive strategies used in this research are effective in reading comprehension. It can be known from the improvement of the students' reading comprehension achievement after the treatment. Furthermore, it is suggested to English teachers that cognitive and metacognitive strategies can help students solve their difficulty to relate the text to its context. Also, cognitive strategies and metacognitive strategies can be

applied together to perform better ability to get main idea, supporting detail, reference, inference, and vocabulary aspects.

2. Suggestions for Further Researchers

In this research, cognitive and metacognitive strategies used to teach English reading skill for one topic. It seems that it would be important for further researchers to explore these strategies for different skills and more topic, since the researcher provide the cognitive and metacognitive strategies for reading comprehension in vocational high school.

It is suggested that further researchers to examine the implementation for example in the university, emphasize the greater population and sample, and develop research instrument with something new. In so doing, we would be able to provide more contribution to education. However, this research is related to quantitative research. It is suggested for further researchers to consider conducting similar research with qualitative research to enhance the comprehensiveness of the research.

This chapter is concerned with the conclusion of this research and the suggestion based on the research results and discussion related to the use of cognitive and metacognitive strategies in reading comprehension.

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