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Contribution of Metacognition Awareness and Reading Strategy Awareness toward Reading Comprehension Ability Grade 11 Students of State High School in Gunungsitoli City, Indonesia

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ABSTRACT: Reading comprehension is one of the essential skills in learning at all levels of education. Based on several studies, information was obtained that learners at all levels of education still have difficulty understanding reading texts. This study aims to explore the contribution of metacognition awareness and reading strategy awareness to the reading comprehension ability of high school students. A quantitative approach with a correlational method explains the degree of relationship or association between independent (awareness, metacognition, and awareness of reading strategies) and dependent variables (reading comprehension). The students were 154 from six State High Schools in Gunungsitoli City, Indonesia. Three instruments are used to obtain data: Metacognition Awareness Inventory, Survey of Reading Strategies, and Reading Comprehension Ability. The data was analyzed with multiple linear regression analysis based on SPSS for Windows version 26. The findings showed that (1) metacognition awareness did not contribute positively and significantly to students' reading comprehension, (2) awareness of reading strategies contributed positively and significantly to students' reading comprehension, and (3) metacognition awareness and reading strategy awareness simultaneously contributed positively and significantly to students' reading comprehension. Based on these findings, reading comprehension ability can be explained by the variables of metacognition awareness and reading strategy awareness by 24.70%. At the same time, the remaining 75.30% is explained by other variables outside this study's variables. Nevertheless, the findings of this study help learn reading comprehension in high school. In other words, teachers must cultivate metacognition and reading strategy awareness among students. Further research can be carried out using other research designs and methods.

Keywords: *metacognition awareness, reading strategy awareness, reading comprehension ability*

I. INTRODUCTION

1.1 Background to the study

Nufus and Ifadloh (2021) said that reading is one of the language skills that learners must master at all levels of education. The same thing was stated by Lazarus and Anwalimhobor (2023): reading is an essential skill in the learning process at school. This receptive skill is essential because most information is obtained through reading activities (Telaumbanua & Telaumbanua, 2024). In the current educational curriculum, reading and viewing are some elements of Indonesian subjects in all educational units (Kemendikbudristek, 2022). Reading and viewing is a means of learning literacy for various communication purposes in Indonesian socio-culture (Telaumbanua et al., 2023). Still, in the independent curriculum, it is explained that reading is the ability of students to understand, interpret, interpret, and reflect on texts according to their goals and interests to develop their attitudes, knowledge, skills, and potential (Telaumbanua & Telaumbanua, 2024).

Although reading skills are essential for learners and society, reading is still problematic for many students at every level of education (Jufri, 2014). Similar opinions were expressed by Lazarus and Anwalimhobor (2023), who found several research findings that it is difficult for students to understand reading texts. This view is strengthened by research by Telaumbanua (2023) at one of the high schools in Medan City, which concluded that students had difficulty understanding reading texts. Likewise, research (Kholiq & Luthfiyati, 2020) concluded that the reading comprehension ability of Lamongan Regency High School students

was relatively low. The same thing was stated by Sari & Setiawan (2023): since participating in PISA in 2000, it is known that the reading literacy ability of Indonesian students still needs to improve. At the higher education level, information was obtained that students' reading comprehension skills needed to be improved (Fitriyani & Tussolekha, 2020; Toding et al., 2023).

Similar findings were made by Harefa (2021) that the mastery of reading skills in classification texts of grade 10 students of SMA Negeri 1 Idanoi, Gunungsitoli Idanoi District, Gunungsitoli City, still needs to be improved. Evidently, out of 34 students, only 12 achieved the minimum completeness criterion, 75. This shows that the knowledge, competence, and skills of students who read classification texts still need to meet the learning achievements. Likewise, Gulo & Harefa (2023) research that the problems faced by students in reading comprehension include (1) students' lack of interest and motivation in reading to understand negotiation texts; (2) students find it challenging to determine the structure of the negotiation text; (3) in general, many students are not serious about learning when the learning process is carried out in groups; (4) the learning model applied by teachers is still not understood so that students are less active in the learning process; (5) The reading resources or books available in schools/libraries are still limited so that the needs of students, especially in learning materials to analyze the structure of negotiation texts, are still not met.

Based on the above explanation, learners at all levels of education have difficulty understanding reading texts. In particular, high school students in Gunungsitoli City still experience the inability to understand the reading text perfectly. Therefore, finding alternative problem-solving methods is necessary so students can read texts well.

Regarding reading comprehension, Anastasiou and Griva (2009) argue that reading is a complex process: a *combination* of perception, psycholinguistic, and cognition skills. This view affirms that reading is a process of cognitive interaction; namely, the reader constantly interacts with the text, the author forms hypotheses, tests predictions, and uses linguistic knowledge to build meaning (see Al-Khresheh & Al Basheer Ben Ali, 2023; Garrett & M., 2018; Lazarus & Anwalimhobor, 2023). Thus, reading *awareness* is one of the determining factors for understanding reading texts (see Do & Phan, 2021; Lazarus & Anwalimhobor, 2023; Saraswaty et al., 2022). Therefore, metacognition and reading strategy awareness are closely related to reading comprehension ability.

Based on this description, this study aims to explore the contribution of metacognition awareness and reading strategy awareness to reading comprehension ability. This is useful in developing variables that can boost students' reading comprehension skills.

The research conducted must be distinct from the relevant research. Therefore, several relevant studies can be described below. *First*, a study titled *"The Contributions of Reading Strategies and Reading Frequencies toward Students' Reading Comprehension Skill in Higher Education* by Amir et al. (2019) involves variables of reading strategies, reading frequency, and reading comprehension. This quantitative/correlational research concluded that reading strategies and frequency contribute to reading comprehension.

Second, the research of Raqqad et al. (2019) entitled *The Impact of Reading Strategies on EFL Students: A Research Review* combines quantitative and qualitative approaches, concluding that reading strategies do not affect reading comprehension skills. This study suggests that further research should be carried out by involving moderators or intervening variables.

Third, the research of Banditvilai (2020) entitled "*The Effectiveness of Reading Strategies on Reading Comprehension"* concludes that reading strategies positively influence reading comprehension. The findings of this study were obtained using quantitative and qualitative approaches. Meanwhile, the initial data analysis was with statistics (mean and standard deviation) and continued with qualitative analysis (interview data).

Fourth, a study by Hamiddin & Saukah (2020) entitled, *Investigating Metacognitive Knowledge in Reading Comprehension: The Case of Indonesian Undergraduate Students* Using a Qualitative Approach concluded that successful readers have more knowledge, awareness, motivation, and metacognitive behaviour than less successful readers. The subject of this study involved eight students. No difference in understanding between Indonesian and English texts is an additional finding.

Fifth, the research of Andreani et al. (2021) entitled, "*The contribution of genre awareness and reading habits towards students' reading comprehension,* involves genre awareness and reading habits as independent variables and reading comprehension ability as bound variables. A quantitative-correlational study with English program students concluded that genre awareness and reading habits contributed positively and significantly to reading comprehension.

Sixth, the research of Telaumbanua & Tarigan (2022) entitled "*The contribution of discourse strategies to the reading comprehension skills in senior high school level,* with addiction strategies as independent variables and reading comprehension ability as bound variables, concluded that discourse strategies have a contribution to the reading comprehension skills of grade 11 high school students in Medan. Research that uses a quantitative-correlation approach suggests further research by applying discourse strategies with other methods (classroom action research or experimental).

Seventh, A.-K. & Al Basheer Ben Ali's (2023) research entitled, *"A mixed method study on the metacognitive awareness of reading strategies used by Saudi EFL students* with a combined approach (quantitative and qualitative). The study, which sought to describe the use of reading strategy metacognitive awareness by English language learning students in Saudi Arabia between men and women, concluded that participants' metacognitive awareness levels differed significantly by gender for the global strategy. There are also significant differences in global reading strategies based on senior and junior levels. Interviews with teachers who participated in the study confirmed the findings of the quantitative phase. All agree that the metacognitive awareness of Saudi EFL students about reading strategies falls between the low and medium ranges.

Eighth, the research of Manurung et al. (2024) titled *"The correlation between reading strategies and reading comprehension"* concluded that there is a positive and significant correlation between reading strategies and reading comprehension. A quantitative-correlative study involving 60 participants from a high school in Batam, Indonesia, suggested that a follow-up study use interviews and observations of reading strategies to validate differences.

This study has similarities among the eight studies presented above, reading comprehension ability as a bound variable and quantitative-correlational research design. At the same time, the differences in novelties are as follows.

(1) This study involves two independent variables, namely (a) metacognition awareness and (b) reading strategy awareness and reading ability as bound variables. Previous research has yet to test these two strategies simultaneously.
(2) Previous research was carried out in English subjects. Research this is done in Indonesian subjects.
(3) This study involved all grade 11 students of State High School in Gunungsitoli City, Indonesia, as many as 154 students. Previous research had a maximum of 40-50 studetns.

1.2 Problem Formulation

In point 1.1 above, it is clearly illustrated that this study is related to aspects that contribute to students' reading comprehension ability. Based on this description, this research problem can be formulated as follows.

1. Does metacognition awareness contribute positively and significantly to students' reading comprehension?
2. Does awareness of reading strategies contribute positively and significantly to students' reading comprehension?
3. Do metacognition and reading strategy awareness contribute positively and significantly to students' reading comprehension?

II. LITERATURE REVIEW

2.1 Metacognition Awareness

In simple terms, metacognition is thinking about thinking. This refers to effective *self-regulation about self-appearance*, the meaning of awareness in the learning process, and the measurement of learning efficiency (Heereveld, 2020). Metacognition in cognitive psychology theory is seen as a form of awareness about a person's cognition, how it works, and how it is regulated (Flavell, 1979). Metacognition skills are important to use cognition to solve mathematical and language problems efficiently.

Lai (2011) defines metacognition consciousness as awareness of one's thoughts, awareness of one's conception, active monitoring of one's cognitive processes, efforts to regulate one's cognitive processes about further learning as well as the application of a set of heuristics as an effective device to help people organize the methods prepared to face problems in general. According to Kermani et al. (2023), metacognitive reading awareness refers to people's awareness of how their cognitive processes help them become better readers.

In other words, cognition awareness is the management of one's thoughts, monitoring and controlling the mind. This awareness distinguishes between skilled and unskilled readers. Skilled readers often engage in deliberate activities that require planned thinking, flexible strategies, and regular self-monitoring. They think about the topic, look forward and backward within that passage, and check their understanding as they read. Novice readers or unskilled readers do not recruit and use these skills. Indeed, novice readers often seem unaware of this strategy, so they are unwilling to use it (Budiyono, 2015).

Nazarieh (2016) argues that metacognition has been the focal point of research for many years. In educational psychology, for example, metacognition is thinking about thinking. Metacognition is a form of cognition that includes active control over cognitive procedures.

The first researcher to introduce and use metacognition in educational and cognitive psychology was (Flavell, 1979). This expert uses the term to refer to an individual's awareness of thinking and learning. He explained that metacognition refers to a person's knowledge of cognitive processes and products or anything related, such as the nature of information or data relevant to learning.

Based on the above explanation, it can be concluded that metacognitive awareness contributes to learning. This is in line with a National Research Council report on Education for Life and Work that identifies three domains of 21st-century competence—cognitive (thinking and reasoning), intrapersonal (regulating one's behaviour and emotions to achieve goals), and interpersonal (relating to others and the viewpoints of others standing below)—which are supported in large part by the cognitive features featured in this text (Wilson & Conyers, 2016).

In its development, at least two metacognition models are applied in learning: the cognitive monitoring model introduced by Flavell (1979) and the metacognition model carried out by Brown (1987). Flavell (1979) proposed a cognitive monitoring model with four interacting sub-sections: metacognitive knowledge, metacognitive experience, goals, and strategies. Metacognitive knowledge is defined as a segment of stored knowledge that relates to people as cognitive beings and with their diverse tasks, goals, actions, and cognitive experiences. This type of knowledge is a subset that relates to individuals as cognitive beings and considers their different tasks, goals, behaviours, and cognitive experiences.

In second language learning, this cognitive knowledge model forms three categories of a person's knowledge, namely general knowledge, task knowledge, and strategy knowledge. A person's knowledge includes learners' general knowledge of humans as thinking organisms. This knowledge is a person's learning ability and knowledge of internal and external factors that affect success or failure in a person's learning process. Task knowledge refers to students' knowledge of learning tasks' objectives, nature, and demands. It also involves knowledge of the difference in difficulty between two specified tasks. Task knowledge also allows learners to consider factors involved in the task's difficulty, along with the verbal messaging feature.

Finally, strategy knowledge refers to learners' knowledge of how to use strategies to achieve cognitive goals. Knowledge of strategies can help learners achieve learning goals and give them a choice in using their strategies and preferences.

The metacognition model proposed by Brown (1987) consists of two dimensions, namely knowledge of cognition and cognition regulation (Riyadi et al. (2017)). Knowledge of cognition refers to what individuals know about their cognitive processes that facilitate the reflective aspects of metacognition. Cognition knowledge is characterized by declarative, procedural, and conditional knowledge. Declarative knowledge includes knowledge about oneself as a learner and the factors affecting one's performance. Knowledge of the self and strategy is another constituent part of declarative knowledge. For example, people may know that goal setting is an effective strategy before starting a study assignment.

Procedural knowledge indicates knowledge of the execution of procedural skills and how to use strategies. Individuals with higher procedural knowledge use more automated skills, can strategize effectively, and use different qualitative strategies to solve problems and difficulties. Procedural knowledge includes knowledge of how to use strategies. For example, a person may know how to set goals before committing to a particular task.

Conditional knowledge refers to the knowledge of when and why various cognitive actions should be applied. In other words, it is related to utilizing declarative and procedural knowledge. It can be considered declarative knowledge about cognitive procedures' relative utility. For example, people may know that goal setting will be much more appropriate before performing a particular task. In this Brown model, knowledge of cognition is characteristically stable, often imperfect, and often underdeveloped. Conditional knowledge is important because it helps learners selectively allocate their resources and use strategies more efficiently. Conditional knowledge also allows learners to adapt to the various situational demands of a particular learning task.

Cognition regulation refers to activities that help learners organize and monitor learning, facilitating aspects of learning control or execution. Several studies report noteworthy improvements in learning when setting skills and understanding how to use and apply these skills in classroom learning. Cognition regulation requires three metacognitive strategies: planning, monitoring, and strategy evaluation. Planning includes the selection of the right strategy and the proper allocation of resources that affect performance. Examples include making predictions before committing to a task, sequencing strategies, and selecting time or attention before starting a specific task.

Monitoring refers to self-awareness and regulation of the understanding and presentation of tasks. For example, engaging in regular self-testing while learning is a good example. Studies have also shown that monitoring as a developing ability is relatively slow and quite poor in children and adults. According to Brown, cognition regulation is considered unstable and age-dependent compared to the knowledge feature of cognition. This means that adults may need to learn to use strategies when solving simple problems. Young learners may need the ability to monitor and manage their strategies. The regulatory process—planning, monitoring, and evaluation—may not be realized in a learning situation. One reason is that many of these processes are highly automated, at least among adults. The second reason is that some of these procedures have developed without reflection.

Based on the above description, it is clear that these domains are closely related to metacognition in language teaching, which involves reflection in all three domains simultaneously. Furthermore, each of these three subdomains can be divided into several new categories depending on the theoretical viewpoint and interests of the researchers. A consequence of this reasonably general understanding of metacognition is that many research areas are related to metacognition. For example, the investigation of teacher and student beliefs, teaching and use of learning strategies, metalinguistic and multilingual awareness, intercultural awareness and *self-efficacy*.
Thus, it can be concluded that metacognition is a central tool for learning and professional development in language learning and teaching. Students should be aware of how they can build on their existing knowledge to improve the language learning process, but at the same time, they should be able to identify their knowledge gaps and set goals for how these gaps can be addressed. Language teachers play a key role in supporting their students' language learning efforts by reflecting and modelling what learners know and how languages can be learned. However, to support students in language learning, language teachers must be aware of metacognitive contributions in language learning.

Of the two metacognition models, this study uses a model introduced by Brown (1987) about knowledge and regulation of cognition. This model was chosen for the reasons (a) the clarity of each component/category, including indicators, and (b) the availability of research instruments (Sulistyowati et al. (2022).

2.2 Reading Strategy Awareness

The concepts of metacognitive awareness and *metacognitive awareness of reading strategies* for several experts are the same. On the other hand, few distinguish these two concepts of consciousness (Telaumbanua & Telaumbanua (2024)). The author agrees with the experts who distinguish the two in this study. One of the reasons is that the elements or aspects of each concept have differences. In addition, the research instruments that previous researchers have developed have their differences (Al-Khresheh & Al Basheer Ben Ali, 2023; Andreani et al., 2021; Hamiddin & Saukah, 2020; Lazarus & Anwalimhobor, 2023; Telaumbanua & Telaumbanua, 2024).

Strategy is a global representation of achieving a specific goal. This means it will dominate many lower, more detailed decisions and actions. So, if the strategy is characterized globally with a quick concept, then actions will be taken at each point for the next stage. Reading strategies are conscious actions that readers use to improve comprehension or deliberate actions used to monitor and supervise the comprehension efforts of the text being read. Reading is an interactive process. Therefore, an effective reading strategy is needed (Telaumbanua & Telaumbanua, 2024).

Reading strategies are the comprehension process that readers use to understand their reading. Additionally, reading strategies show how readers understand the task, how they understand what they are reading, and what they do when they do not understand. Li (2016), as quoted by (Tarigan, 2022), explained that reading strategies are one of the important factors in helping readers improve reading comprehension and overcome reading difficulties. Readers who do not use reading strategies often have difficulty reading. Students skilled in using reading strategies may have better reading comprehension outcomes than those not skilled. Telaumbanua (2019) asserts that reading strategies are essential to help students overcome reading difficulties, such as deducing the underlying messages of the text, dealing with unknown terms, and unfamiliar cultural burdens. Reading strategies help readers manage to interact with the written text, they show how the reader understands the task, what textual cues the reader uses, how the reader understands what they are reading and how they react when they do not understand (Telaumbanua, 2023).

Do & Phan (2021) believe that if reading is an interactive cognitive process that includes planned steps to understand what to read, successful readers usually use different strategies when reading, such as using their knowledge or reading carefully to understand the written material. In addition, reading strategies are one of the effective solutions for weak readers to improve their reading comprehension and help them become strategic readers. In other words, reading strategies play an important role in the academic context and reading comprehension.

Experts have introduced reading strategies. In this presentation, three strategies that readers can use are cited. The first model is carried out by Block & Israel (2005) and Gajria & Jitendra (2021) by proposing six cognitive strategies in reading, namely (a) predicting, (b) asking, (c) visualizing, (d) making connections, (e) summarizing, and (f) inferring. Van Dijk and Walter Kintch (1983) propose four strategies readers can utilize. The four strategies are (a) cognitive strategy, (b) linguistic strategy, (c) grammatical strategy, and (d) discourse strategy. The three models by Schaw & Dennison (1994) are (a) global reading strategies, (b) *problem-solving reading strategies*, and (c) *support reading strategies*.

O "Malley et al. (1985) recommend that students be aware of reading strategies because, without this awareness, students are in a position without direction or opportunity to review their progress, achievements, and future learning direction. This idea is supported by Cohen (2014), who proposes several ways for learners to

become successful learners, such as increasing the use of their class time, taking more responsibility for their language learning, being more aware of their learning needs with learners' awareness, and being responsible for the selection, use, and evaluation of learning strategies.

In this study, the strategy used as the basis of the theory is carried out by Mokhtari and Reichard (2002) and Schaw and Dennison (1994). The reasons for choosing this strategy are (a) the availability of validated instruments, (b) the clarity of each indicator or component, and (c) the relevance to the awareness of reading strategies.

The global reading strategy refers to deliberate and carefully planned technology. Students monitor or organize their reading by using prior knowledge, matching reading goals with reading content, previewing texts, utilizing text context and structure cues, and reading texts at a glance (Bishop et al., 2006).

Similarly, Saraswaty et al. (2022) explain that the global reading strategy involves planning how to read and managing comprehension. This strategy is a deliberate and carefully planned technique in which learners monitor and manage their reading, such as having a goal in mind, previewing text for its length and organization, or using typographic aids, tables, and images.

Problem-solving strategies are the activities and processes readers carry out when dealing with the text directly. Readers use this strategy as a limited and attentive technique when they have problems with previous texts. Some examples of problem-solving strategies in reading are reading slowly and carefully, adjusting the speed or pace of reading, rereading texts, visualizing text information, and guessing the meaning of unknown words.

Problem-solving strategies help readers accurately, fluently, and with a more complete understanding. Readers use information from within and outside the text (the experience of the world) to help them make meaning. Learners will use a broader range of strategies as they grow as readers.

Reading support strategies use an important assistance system to support readers in understanding texts. This includes taking notes while reading, paraphrasing and summarizing information in texts, using reference materials (e.g., using a dictionary), summarizing, and discussing reading with others. This strategy consists of using supporting mechanisms or tools to facilitate the reading comprehension process (for example, using reference materials such as dictionaries and other support systems). Tercanlioglu (2004) defines a support strategy as a technique intended to assist readers in understanding the text.

2.3 Reading Comprehension Ability

According to the RAND Reading Study Group (2002), as quoted by Pourhosein Gilakjani and Sabouri (2016), comprehension is the process of presenting and creating meaning through interaction with written language. In the same vein, Duke (2003), quoted by Pourhosein Gilakjani & Sabouri (2016), states that comprehension is a process of making meaning based on interaction with the text through a combination of prior knowledge and previous experience, information in the text, and the reader's view related to the text.

Van Dijk and Kintsch (1983) define reading comprehension as creating meaning from texts. The goal is to understand the text and gain meaning from words or sentences individually. The result of reading comprehension is a mental representation of the meaning of the text combined with the reader's previous knowledge. Keenan et al. (2008), as quoted (Telaumbanua & Tarigan, 2022), stated that reading comprehension requires high-level strategies and skills so that the text read can be understood perfectly.

In learning to read, an expert in reading skills named Thomas C. Barrett (1972) proposed a taxonomy to be used as a reference by educators, which later became known as Barrett's taxonomy. According to him, there are at least five taxonomy of reading skills, namely (a) literal understanding of comprehension, (b) reorganization, (c) inferential comprehension, (d) evaluation, and (e) appreciation. *First*, literal understanding focuses on ideas and information explicitly stated in the reading text. The goal is to obtain simple to complex responses. Simple responses have to do with the introduction of facts or events. Meanwhile, complex responses draw conclusions based on facts or events. This taxonomy includes recognition and memory.

Second, reorganization requires students to analyze, synthesize, and organize ideas or information explicitly stated in the reading text. To get accurate information, readers can write, paraphrase, or translate the intent of the reading. This reorganization includes classification, outlining, summarizing, and synthesis.

Third, inferential understanding is depicted when the reader uses ideas and information explicitly stated in the text, including his intuition and personal experience, as the basis for constructing provisional statements (hypotheses). The conclusions drawn by students can be convergent or divergent. Students may be asked to reveal the reasons underlying their conclusions. This inferential understanding aims to grow impatience and thinking that is not fixated on the reading script. Regardless of where this knowledge comes from, prior knowledge is an integral part of inference. Understanding inference includes the main idea, order, comparison, cause-and-effect relationship, characteristics, achievement prediction, and interpretation of language style.

Fourth, after students read, there should be a response from students as a representation of assessment of the information obtained from reading. Assessment or evaluation can be done by comparing the ideas presented

with available external criteria (from teachers, other authorities, and other written sources). Evaluation concerns assessments focusing on quality, accuracy, acceptance, desire or value. Assessment is the key to this taxonomy that can be demonstrated by asking students to make assessments on (a) reality or fantasy, (b) facts or opinions, (c) accuracy of validity, (d) precision/certainty, (e) values, desires, and acceptance.

Fifth, appreciation involves all cognitive dimensions of previous reading; appreciation taxonomy is more widely used when reading literary works or watching stories of human life experiences. This has to do with the psychological and aesthetic influence of the reader. Appreciation can increase emotional and aesthetic sensitivity in learners, which includes knowledge and emotional responses to the reading script and when in a state of viewing. Components that need to be highlighted are emotional responses to the content, identification of characters or events, reactions to the use of language by the author, and animation.

Reading comprehension skills in the 2013 curriculum, according to Telaumbanua (2023), is an activity that aims to obtain in-depth information and understanding of what is read. Reading comprehension is understanding the meaning or intent of a reading through writing. To understand the content of a reading material well, it is necessary to have good reading comprehension skills. Comprehension is one of the important aspects of reading activities because, in essence, understanding a reading material can improve reading skills and allow specific goals to be achieved. So, the ability to read can be interpreted as the ability to understand reading material.

Telaumbanua (2023) further explained that reading comprehension is an in-depth reading activity to understand the content of a book or reading fully. Reading comprehension can be born or reproduced if necessary. Thus, the understanding of reading material alone does not depend on what is contained in the reading alone; it also depends on the reader's previous knowledge.

2.4 Metacognition Awareness, Reading Strategy Awareness, and Reading Comprehension

2.4.1 Reading Metacognition Comprehension and Awareness

Reading involves a variety of activities, such as understanding and remembering ideas, identifying or selecting the presence of important information, monitoring comprehension and learning, synthesizing information, and criticizing and evaluating reading texts (Carrell, 1989; Lahuerta Martínez, 2011; Liu & Li, 2015). Reading includes four important elements, namely the text, the reader, the interaction between the reader and the text, and the reader's mental state when interacting with the text. Based on these elements, Carrell (1989) states that conscientious readers can complement their language skills by increasing cognitive awareness and learning how to use these cognitive. Correct and precise understanding depends on metacognitive processing efforts (McFarland, 2013; Mulyadi, 2015; Nahar & Mallik, 2022). Researchers such as McFarland (2013), Mulyadi (2015), Nahar & Mallik (2022), Rajoo & Selvaraj (2010), Riyadi et al. (2017), and Zhang (2001) consider metacognitive awareness as an important element of improving reading proficiency. In this context, metacognitive awareness is seen as the reader's awareness monitoring, identifying, and maximizing the potential to understand the meaning and information of reading texts, monitoring and setting reading strategies (Liu & Li, 2015).

Research findings on metacognitive awareness conclude that successful readers always involve comprehension awareness and consciously apply various strategies to improve their understanding of reading texts. If the reader is aware of what is needed to read effectively, he or she can meet the demands of the reading situation more effectively. However, if the reader is not aware of his or her limitations as a reader or the complexity of the reading text, then it is challenging for the reader to anticipate and recover his or her potential (Keliat et al., 2021; Kermani et al., 2023; Li & Wai Chun, 2012). Mastery of the reading manuscript becomes less than optimal, and one often needs help understanding the intention of the author of the text.

2.4.2 Reading Comprehension and Awareness of Reading Strategies

The tangent between metacognition awareness and reading strategy awareness lies in the reader's awareness to utilize various reading strategies (Saraswaty et al., 2022; Telaumbanua & Telaumbanua, 2024; Teng, 2020). This means that awareness of reading strategies is one of the components of metacognition awareness. This association led the researchers to use *the term metacognitive awareness of reading strategies.* for the concept of metacognition awareness. One way to distinguish it from *metacognitive awareness* is the instrument used to know both. *The Metacognitive Awareness of Reading Strategies Inventory* (MARSI) is used to determine metacognition awareness, while *the Survey of Reading Strategies* (SORS) is devoted to measuring awareness of reading strategies (see Mokhtari et al., 2018; Mokhtari & Reichard, 2002; Mokhtari & Sheorey, 2002).

Developing an understanding of reading strategies and their influence on improving reading skills has been a concern for researchers. Mastery of reading strategies can improve reading skills when readers know the strategies used. This awareness forms the basis of reading strategies, described as knowledge of readers' cognition and self-control mechanisms used to monitor and improve comprehension (Ngoc, 2021).

Quite a lot of research related to this field is in both international and local contexts. However, the results and findings could be more consistent. On the one hand, the awareness of reading strategies is still debated for its correlation with reading comprehension ability. On the other hand, awareness and use of reading strategies positively correlate with reading comprehension ability. This view confirms that students who use reading strategies contribute positively and significantly to taking reading comprehension proficiency tests (see Hong-Nam, 2014; Mokhtari & Reichard, 2002).

From the discussion above, the use of awareness of reading strategies in reading comprehension is related to each other to some extent. However, more is needed to reach a firm conclusion due to inconsistent research findings. As a result, there is still a gap because several studies have found the need for more consistency in results (Ngoc, 2021). Therefore, research contributes positively and significantly to reading comprehension to bridge the gap.

2.5 Research Hypothesis

The following hypotheses guide this research:

Hypothesis-1: Metacognition awareness contributes positively and significantly to students' reading comprehension ability.

Hypothesis 2: Awareness of reading strategies contributes positively and significantly to students' reading comprehension ability.

Hypothesis-3: Metacognition awareness and reading strategy awareness contribute to simultaneous, significant and positive reading comprehension ability.

III. RESEARCH METHOD

3.1 Research Design

This study uses a quantitative approach. This approach is motivated by the data needed to test the hypothesis in the form of intervals (Papadopoulos & Papadopoulou, 2023). By formulating the problem and research objectives as described in the introductory chapter, the correlational technique is determined as a research method. This aligns with Creswell's (2012) opinion that a quantitative approach with a correlational method seeks to explain the degree of relationship or association between several variables. In correlational research design, statistical tests can describe and measure the level of association (relationship) between two or more variables. (Griffin & Hayler, 2016; Saro et al., 2023).

3.2 Participants

The population of this study is all 1160 students in grade 11 of State High School in Gunungsitoli City, Indonesia. The determination of the sample was carried out by *multistage random sampling* (Bhardwaj, 2019). Based on this model, three stages of sample determination are taken. The first stage is determined by school clusters based on sub-districts. At this stage, one State High School was selected for each sub-district. From the results of this election, four State High Schools were obtained, namely (a) SMA Negeri 2 Gunungsitoli in Gunungsitoli District, (2) Sukma Superior State High School in South Gunungsitoli District, (c) North Gunungsitoli State High School in North Gunungsitoli District, and (4) Gunungsitoli Idanoi State High School in Gunungsitoli Idanoi District. The second stage is to determine a research sample of 154 students.

3.3 Data Collection Techniques and Research Instruments

The research variables show that three types of data are needed: (a) metacognition awareness, (b) reading strategy awareness, and (c) reading comprehension ability. To obtain the three data sets, the data collection techniques are (a) a questionnaire (metacognition awareness and reading strategy awareness) and (b) a test (reading comprehension ability).

The metacognition awareness instrument is adapted from *the Metacognition Awareness Inventory* developed by Schraw & Dennison (1994), which has as many as 52 items. Because MAI was originally shaped right and wrong, researchers organized it into five choices based on the Likert scale. This instrument is divided into two main categories, namely (a) cognition knowledge (17 items) and cognition regulation (35 items).

The reading strategy awareness instrument was adapted from *the Survey of Reading Strategies* (SORS) developed by Mokhtari & Sheorey (2002), with as many as 30 items and five choices based on the Likert scale. This instrument consists of three categories, namely global strategies (13 items), problem-solving strategies (8 items), and material support strategies (9 items).

The reading comprehension instrument was compiled based on the 2013 Curriculum because the research sample school still needed to implement the independent curriculum. The preparation of the reading ability test begins with preparing a grid (Habib, 2016). Based on this grid, 40 items of reading comprehension tests are arranged in an objective form with four answer options (A, B, C, and D).

These three research instruments have been tested to ensure validity and reliability. This trial was carried out in grade 11 of State High School-1 Gunungsitoli, Indonesia (a school not selected as a research sample school), which 31 students attended. Results of testing the three instruments using SPSS version 26 for Windows

The conclusion is based on the criteria recommended by Kumar et al. (2021); namely, if the calculated r-value is greater than the table r-value, the question is considered valid. If the calculated r-value obtained is lower than the table r-value, the question is considered invalid and cannot be used. In this research, the r-value of the table was obtained at 0.344 at a significance level of 0.05. The results of the analysis showed that the research instrument was declared valid.

Regarding reliability, Cronbach's Alpha (Yudhistir, 2022) is used as low as 0.60. If the calculation result is below 0.60, the instrument item cannot be used or replaced with another item. The results of the analysis showed that the research instrument was declared reliable.

3.4 Data Analysis Techniques

The analysis of the research data was carried out in two stages. In the first stage, the score was calculated on students' answers to metacognition awareness, reading strategy awareness, and reading comprehension ability. The results of this data analysis are in the form of scores processed with descriptive statistics and presented as tables.

The second stage is to conduct inferential statistical analysis using multiple linear regression (*multiple linear regression analysis*) based on SPSS for Windows version 26. This double-linear regression analysis aims to test the research hypothesis outlined in the previous chapter. To ensure the feasibility of the data, classical assumption tests were carried out, including (a) residual normality tests, (b) multicollinearity tests, and (c) heteroscedasticity tests (see Mardiamotko, 2020). The autocorrelation test does not need to be carried out because the research data is classified *as a cross-section*, data collected in a single time *(point time approach*) to the object.

Furthermore, t-test statistics were used to determine the contribution of metacognition awareness and partial reading strategies to reading comprehension. Meanwhile, the F-test statistics were used to determine the contribution of metacognition and reading strategy awareness to reading comprehension ability. Finally, the R Square test is used to obtain the contribution of metacognition and reading strategies to reading comprehension.

IV. FINDINGS

4.1 Data Description

The results of the descriptive statistical test are obtained, as shown in Table 1.

Table 1: Results of Statistical Analysis Description

Variable	N	Minimum Score	Maximum Score	Mean	Standard Deviation
Metacognition Awareness	154	62	90	76.65	6.301
Reading Strategy Awareness	154	65	89	77.94	5.129
Reading Comprehension Ability	154	65	95	79.55	6.354

(Source: Output SPSS 26)

Based on the descriptive statistical analysis results, the study's findings are as follows: First, metacognition awareness showed a minimum score of 62 and a maximum score of 90, as well as an average score of 76.65 and a standard deviation of 6.301. Second, the awareness of reading strategies showed a minimum score of 65 and the highest score of 89. The mean value was 77.94, and the standard deviation was 5,129. Third, reading comprehension ability shows a minimum score of 65 and a maximum score of 95. The average score is 79.55, with a standard deviation of 6.354. These descriptive findings inform a picture of metacognition awareness, awareness of reading strategies, and reading comprehension ability of high school students in Gunungsitoli City, Indonesia, which move from moderate to good.

4.2 Classic Assumption Test Results

Before analyzing data with multiple linear regression analysis, a classical assumption test is conducted to determine whether the data is worth analyzing. This study uses three classical assumption tests, namely (a) residual normality test, (b) multicollinearity test, and (c) heteroscedasticity test. The test results of the three classical assumptions show that the normally distributed data (Asym. Sig 2-tailed) is 0.132 > 0.05. Then, there was no multicollinearity between independent variables (the tolerance value of the two variables was 0.608 > 0.10, and the IF (Variance Inflation Factor) was 1.645 < 10. Finally, there was no heteroscedasticity problem

(the correlation between the variables of metacognition awareness and reading strategy awareness with reading comprehension ability had a significant value of 2-tailed) 1.00 > out of 0.05)

4.3 Hypothesis Test Results

Hypothesis testing, based on the following:

1. Based on t-test
   If the value of the sig < 0.05 or t calculated > t the table, then there is a contribution of variable X to variable Y;
   If the value of the sig > 0.05 or t calculated < t of the table, then there is no contribution of variable X to variable Y.
2. Based on the F test
   If the value of the sig < 0.05 or F is calculated > F of the table, then there is a simultaneous contribution of variable X to variable Y;
   If the value is sig. > 0.05 or F calculated < F table, there is no simultaneous contribution of variable X to variable Y

First Hypothesis

In testing the first hypothesis, it is necessary to restate the formulation of an alternative hypothesis accompanied by a null hypothesis. The formulation of the first hypothesis is as follows.

Alternative hypothesis (Ha):

Metacognition awareness contributes positively and significantly to students' reading comprehension ability.

Null Hypothesis (Ho) :

Metacognition awareness does not contribute positively and significantly to students' reading comprehension ability

Based on the analysis results, it is known that the significance value of metacognition awareness is 0.538 > 0.05, and the t-count value is – 0.617 < 1.655. The acquisition of this score indicates that Ha was rejected and Ho was accepted. Thus, it can be concluded that metacognition awareness does not contribute positively and significantly to students' reading comprehension ability.

Second Hypothesis

The formulation of the second hypothesis is as follows:

Alternative hypothesis (Ha):

Awareness of reading strategies contributes positively and significantly to students' reading comprehension skills.

Null Hypothesis (Ho) :

Awareness of reading strategies does not contribute positively and significantly to students' reading comprehension ability

The analysis showed that the metacognition strategy's significance value was 0.00 < 0.05, and the t-value was 5.849 > 1.655. Based on this score, Ha was accepted, and Ho was rejected. Thus, it can be concluded that awareness of reading strategies contributes positively and significantly to students' reading comprehension ability

The data from the inferential statistical analysis as the basis for testing the first and second hypotheses above can be seen in the following table 2

Table 2: Results of Statistical Analysis of Test t

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	32.710	7.002		4.671	.000
	Metacognition awareness	-.056	.091	-.056	-.617	.538
	reading strategy awareness	.656	.112	.530	5.849	.000

Dependent Variable: Reading Comprehension Ability

Third Hypothesis

The third hypothesis formulation is related to the simultaneous contribution of variable X to variable Y. The third hypothesis formulation is as follows.

Alternative hypothesis (Ha) :

Metacognition awareness and reading strategy awareness simultaneously contribute positively and significantly to students' reading comprehension ability

Null Hypothesis (Ho) :

Metacognition awareness and reading strategy awareness simultaneously did not contribute positively and significantly to students' reading comprehension ability.

The results of inferential statistical analysis showed that the significance value of metacognition awareness and reading strategy awareness simultaneously was 0.00 < 0.05, and the F count had a value of F 24.731> 3.060. Based on this score, Ha was accepted, and Ho was rejected. Thus, it can be concluded that metacognition and reading strategy awareness contribute positively and significantly to students' reading comprehension ability. The data from the inferential statistical analysis as the basis for testing the third hypothesis above can be seen in the following table 3.

Table 3: Results of Statistical Analysis of Test F

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1523.897	2	761.948	24.731	.000[b]
	Residual	4652.285	151	30.810		
	Total	6176.182	153			

a. Dependent Variable: Reading Comprehension Ability

b. Predictors: (Constant), Reading Strategy Awareness, Metacognition Awareness

4.4 Interpretation of the Coefficient of Determination

Based on Table 4 below, it is known that the R Square value is 0.247. This value means that the simultaneous contribution of metacognition awareness (X1) and reading strategy awareness (X2) to reading comprehension ability (Y) is 24.70%. In other words, reading comprehension ability can be explained by the variables of metacognition awareness and reading strategy awareness by 24.70%. At the same time, the remaining 75.30% is explained by other variables outside this study's variables.

Tabel 4: R Square Value

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.497[a]	.247	.237	5.551

a. Predictors: (Constant), Reading Strategy Awareness, Metacognition Awareness

b. Dependent Variable: Reading Comprehension Ability

4.5 Regression Equation Results

The regression equations in this study are:

Y = a + bX1 + bX2

Based on Table 4, the value of a was obtained of 32.710, X1 was -0.056, and X2 was 0.656. So, the regression equation is as follows.

Y = 32,710 – 0,056X1 + 0,656X2

The regression equation can be explained as follows.

1. A constant of 32.710 means that if metacognition awareness and reading strategy awareness both have a value of 0, the result of reading comprehension ability is 32.710 or 32.71%
2. The coefficient of X1 is – 0.056 means that if the metacognition consciousness experiences an increase of one point with a fixed level of awareness of reading strategies, The result of reading comprehension decreased by - 0.056 or 0.5%
3. The X2 coefficient of 0.656 means that if the awareness of reading strategies increases by one point with fixed metacognition awareness, the result of reading comprehension ability increases by 0.656 or 65.60%
4. By the regression line equation obtained, the change in the level of variable Y (reading comprehension) in students will be in the same direction as the change in variable X2 (awareness of reading strategies) because the regression coefficient is positively signed. Meanwhile, the change in variable X1 (metacognition awareness) does not align with variable Y (reading comprehension) because the regression

coefficient is negatively signed. However, judging from the amount of the coefficient of 0.056 (0.5%) is not significant.

V. DISCUSSIONS

The discussion of the findings of this study is focused on the relationship with the theoretical basis and findings of previous research. As described in the previous section, the theory used as the basis for the research is the theory of metacognition consciousness introduced by Brown (1987), the reading awareness strategy carried out by Mokhtari & Reichard (2002); Schaw & Dennison (1994), and the theory of reading comprehension based on the taxonomy of Barrett (1972) and the Ministry of Education and Communication (2018).

5.1 Metacognition awareness

The research findings related to the contribution of metacognition awareness to reading comprehension ability are at a less encouraging level. Although not too negative (0.05%), this finding informs that the readers' metacognitive awareness does not positively support reading comprehension ability. In other words, readers' high awareness of metacognition does not directly contribute to improving reading comprehension.

The absence of this correlation is likely due to two things. *First,* rushing to fill out the questionnaire. This means many sample students must be more careful when filling out the questionnaire according to the conditions. Based on the researcher's observations, many sample students completed the questionnaire in less than five minutes.

Second, the metacognition awareness questionnaire is adapted from *the Metacognition Awareness Inventory* developed by Schraw & Dennison (1994), with as many as 52 items written in English. The author tried to rephrase it in Indonesian. Although it has been tested for validity and reliability (valid and reliable), it is undeniable that there are concepts that are not affected by the psychosocial conditions of Indonesian-speaking students.

5.2 Awareness of reading strategies

Related to the research findings, the contribution of awareness of reading strategies to reading comprehension aligns with the theory initiated by Mokhtari and Reinhard (2022) and Schaw and Dennison (1994). Students (students and students) need to increase awareness of reading strategies. With this awareness, students will gain direction and the opportunity to understand precisely and quickly important ideas in a reading text.

This study supports awareness of mastery of global reading strategies, problem-solving, and other proponents, such as those proposed by Mokhtari and Reinhard (2022) and Schaw and Dennison (1994). This emphasizes that students must equip themselves with reading comprehension strategies through reading objectives. Bich's (2024) research on the strategies students use in reading comprehension reveals that future careers have affected the frequency of their reading strategies. In terms of reading comprehension, there are a lot of effective strategies to help students understand the concepts/ideas/ideas contained in the reading text. In short, awareness of reading strategies can help students master or understand reading texts appropriately and quickly.

5.3 Reading comprehension ability

The findings on the reading comprehension ability of grade 11 students of State High School in Gunungsitoli City align with the theory of reading comprehension, especially the Barret taxonomy (1972), which is mainly adopted by the 2013 Curriculum, especially the Indonesian subject. This means that the reading comprehension test designed by the researcher according to Barret's theory and the 2013 Curriculum aligns with the results obtained by students (average: 79.55 and elementary: 6,354). In other words, students as research samples have the competence or skills of reading comprehension as mandated by the theory of reading comprehension, especially the taxonomy of reading comprehension.

The findings of this study must be distinct from the findings of previous research. Therefore, the following description is based on comparing the findings of this research with those of previous researchers. The research of Hamiddi and Saukah (2020) on metacognition knowledge in reading comprehension skills that inform the success of readers who have metacognition awareness differs from this study's findings. As previously described, the findings of this study do not contribute to the reading comprehension of grade 11 students of State High School in Gunungsitoli. This difference in findings is likely due to the design of the study. Hamiddin & Saukah (2020) uses a qualitative design involving students as a data source. This study uses a quantitative-correlational design involving high school students as a data source.

Research on metacognition awareness on reading strategy awareness conducted by Al-Kresheh & Al Basheer Ben Ali (2023) concluded that the use of metacognition awareness about reading strategies is in a moderate range. This study has similar findings in terms of metacognition awareness. This means that metacognition awareness is not very closely related to reading comprehension.

Research related to awareness of reading strategies such as Amir et al. (2019), Raqqad et al. (2019), Banditvilai (2020), Andreani et al. (2021), Telaumbanua & Tarigan (2022), Manurung et al. (2024) are in line

with the findings of this study. Students aware of reading strategies will take advantage of them when they get a reading task. The use of various reading strategies has an impact on reading comprehension.

Further research can be carried out using other research designs, such as expression or action research. It is also necessary to design research instruments that are in accordance with the context of Indonesian subjects. Further research can be carried out by involving grades 10 to 12 to determine the contribution of metacognition and reading strategy awareness to reading comprehension skills. In addition, several other independent variables and moderator or intervening variables can be added. The goal is to obtain comprehensive information on the determinants of the success of reading comprehension at all levels of education.

VI. CONCLUSION

Based on the results of the data analysis, it can be concluded that metacognition awareness does not contribute positively to reading comprehension. Meanwhile, awareness of reading strategies contributes positively to reading comprehension. On the other hand, metacognition awareness and reading strategy awareness together contribute positively.

This study's findings align with the theory of awareness of reading strategies and the theory of reading comprehension ability. The research findings could be more consistent regarding the theory of metacognition consciousness. The findings of this study are generally in line with previous research.

Although this research is carried out according to this rule, it is undeniable that there are still limitations, including (a) quantitative–correlational research design. As is known, quantitative-correlational design is limited in photographing the variables of metacognition awareness and reading strategy awareness. These limitations can be seen in instruments in questionnaires (questionnaires) that have been unable to reveal the real phenomenon; (b) research instruments in questionnaires adapted from English-language research have limitations. Although it has been translated and tested for validity and reliability, it still feels incompatible with the context of learning to read in Indonesian; and (c) the determination of population and sample by multistage random sampling technique only involves one State High School in each sub-district in Gunungsitoli City, Indonesia. In this case, two sub-districts do not have a State High School education unit. It also does not involve Private High Schools. The determination of this sampling model affects the conclusion of generalization.

The study's findings have implications (a) at the theoretical level. The theory of metacognition and the theory of reading strategy awareness are the basis of the research theory. They are supported by data that can be strengthened, especially the theory of reading strategy awareness. Although the study's findings on the aspect of consciousness of metacognition are negatively marked (there is no positive relationship), they can be categorized as an exception because the variable is classified as a psychological realm.; and implications on a practical level, especially in learning to read comprehension. Metacognition awareness and reading strategy awareness on reading ability were quite significant (24.70%). This means that teachers or lecturers can apply it in learning to read in the classroom. In other words, teachers can develop metacognition and reading strategies as components in the reading comprehension element.

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