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The Role of Metacognition Stratexgies (Metacomprehension) and Inferential Ability in Improving Reading Comprehension Ability

(Peran Strategi Metakognisi (*Metacomprehension*) dan Kemampuan Inferensial dalam Meningkatkan Kemampuan Membaca Pemahaman)

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Abstract: This research was motivated by the low reading comprehension ability of junior high school students in the field. The purpose of this research is to investigate the role of metacognition strategies and inferential abilities in improving students' reading comprehension abilities. The method used is a quasi-experiment with the aim of looking at the role of inferential abilities and metacognitive abilities in improving reading comprehension abilities. Apart from that, this research also uses correlational methods to study the relationship between these three variables (metacognitive components, inferential abilities, and reading comprehension abilities). The participants involved in this research were 300 junior high school students taken from 8 schools in the Ciamis area. Samples are selected randomly. Research findings show that metacognitive strategies are able to significantly improve students' reading comprehension skills through the stages of planning, monitoring, and evaluating. The reading comprehension skills possessed by these students are able to help them provide predictions of reading content with a good level of accuracy. The integration of components in metacognitive strategies and inferential abilities can improve reading comprehension abilities, especially inferential reading abilities. This research has the implication that teachers must optimize students' inferential abilities through metacognitive strategies so that students' reading comprehension abilities can also increase significantly.

Keywords **metacomprehension accuracy, inferential ability, reading comprehension, metacognition strategy**

Abstrak: Penelitian ini dilatarbelakangi oleh masih rendahnya kemampuan membaca pemahaman siswa sekolah menengah pertama di lapangan. Tujuan penelitian ini adalah menyelidiki peran dari strategi metakonisi dan kemampuan inferensial untuk meningkatkan kemampuan membaca pemahaman siswa. Metode yang digunakan adalah eksperimen quasi dengan tujuan melihat peran dari kemampuan inferensial dan kemampuan metakognisi dalam meningkatkan kemampuan membaca pemahaman. Selain itu, penelitian ini juga menggunakan metode korelasional untuk mempelajari hubungan ketiga variabel tersebut (komponen metakognisi, kemampuan inferensial, kemampuan membaca pemahaman). Partisipan yang terlibat dalam penelitian ini adalah 300 siswa sekolah menengah pertama yang diambil dari 8 sekolah yang ada di daerah Ciamis. Sampel dipilih secara acak. Temuan penelitian menunjukkan bahwa strategi metakognitif mampu meningkatkan kemampuan membaca pemahaman siswa secara signifikan melalui tahapannya, yaitu perencanaan, pemantauan, dan evaluasi. Kemampuan membaca pemahaman yang dimiliki siswa ini mampu membantu siswa dalam memberikan prediksi isi bacaan dengan tingkat akurasi yang baik. Integrasi dari komponen pada strategi metakognitif dan kemampuan inferensial mampu meningkatkan kemampuan membaca pemahaman, terutama kemampuan membaca inferensial. Penelitian ini memberikan implikasi bahwa pengajar harus mengoptimalkan kemampuan inferensial siswa melalui strategi metakognitif agar kemampuan membaca pemahaman siswa dapat meningkat juga secara maksimal.

Kata Kunci **akurasi metacomprehension, kemampuan inferensial, membaca pemahaman, strategi metakognisi**

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INTRODUCTION

Metacognition is the ability to plan, monitor, and evaluate the learning process. The concept of metacognition began to develop since the concept of metacognition from Flavel (1979) was introduced. Other researchers strengthen the concept of metacognition. Metacognition consists of two fundamental aspects, namely monitoring and control (Burin et al., 2020; Liu & Gu, 2020). Other research strengthens the concept of metacognition as inclusive of two dimensions, namely cognitive knowledge and cognitive regulation (Child et al., 2019; Watter et al., 2022). There is several knowledge involved in the metacognition process, including declarative knowledge, which is used as an introduction to learning strategies, procedural knowledge as necessary steps, and conditional knowledge. Cognitive regulation is the process of monitoring and controlling learning. Cognitive regulation includes planning processes, information management, debugging strategies, evaluation, and monitoring students' level of understanding (Moon & Ryu, 2021). In this study, researchers focused on the regulatory sub-process of monitoring understanding (metacognitive). Monitoring this understanding involves the skills of monitoring learning tasks and controlling learning activities to achieve goals accurately and efficiently. Monitoring and regulating learning activities becomes a reciprocal process in the learning context. In this research, cognitive monitoring accuracy is defined as the level of desire to know (Ravand, 2016). Students can be assessed through assignments, tests, or exams as a prospective assessment to predict student performance in the future. Global or holistic measurements are an alternative that can be used to interpret students' metacognitive monitoring abilities. The conformity of an individual's assessment of their own performance with the student's original abilities is known as monitoring accuracy or comprehension accuracy, while the discrepancy between self-assessment and student performance is called metacomprehension bias (Moon & Ryu, 2021; Ravand & Robitzsch, 2018). What causes metacomprehension bias is overconfidence or a lack of confidence. The accuracy of this metacomprehension, which is used to measure cognitive monitoring, is assessed using absolute and relative assessments to obtain detailed assessment results.

Cognitive monitoring is widely used in several domains. However, in this study, researchers focused on reading ability. Reading comprehension skills are adequate mental representation skills produced through text and used to understand reading. Reading comprehension involves various cognitive aspects, including understanding words, relationships between sentences and paragraphs, and the ability to understand the meaning of the text as a whole (Hadianto et al., 2022; Karami, 2021). When students process text, they enter two levels: basic (text-based) understanding and inferential understanding. The success of this stage depends on the ability to connect ideas in the text. Through this process, students elaborate on previous knowledge to understand new meanings in the text. Metacomprehension in reading involves metacognitive processes to optimize the level of understanding of the text (Samiei & Ebadi, 2021). Readers evaluate their level of understanding and adjust it to the level of coherence of mental representations produced through the reading process. Therefore, through this study, researchers studied the absolute accuracy of metacomprehension, self-reported reading strategies, and reading performance outcomes.

An efficient reader is aware of what they already know and what they don't when reading new information. It is then that readers understand specific actions that can optimize the efficiency of their understanding of new information. Awareness of this process is called metacognition, which is the most important aspect in supporting the success of the learning process (Bonifacci et al., 2022; Hautala et al., 2022). The teacher's ability to monitor the learning process is an important point of metacognition so that the teacher can find out the level of students' understanding of the material being studied and whether it meets the criteria or not. When individuals know their shortcomings, they will be better able to regulate their own actions to optimize their understanding. A skilled reader knows when the reader has gained sufficient knowledge from the text. If the reader's ability to

understand a text is inadequate, the reader will be involved in the next process, namely the monitoring stage and the control stage. This stage is the most important in reading metacomprehension. Metacognitive strategies can be said to be effective if readers have an appropriate understanding of their level of understanding of a text (Bayless et al., 2018; Borman et al., 2021). When readers reach this level, they have reached a high level of metacomprehension. However, when readers do not yet have a good level of metacomprehension, they will not be able to organize their efforts appropriately (Dolean et al., 2021; Ebadi & Ashrafabadi, 2022). For example, a student who has poor metacomprehension abilities may spend a lot of time studying, but they are unable to measure their level of understanding or mastery of the topic or material studied, so they are not confident in their abilities. This can also happen to students who are too confident when studying, so that during exams they get bad results because they are unable to measure the adequacy of their learning.

A phenomenon that illustrates the low level of metacomprehension of students in Indonesia is that there are still many students who study hard but have not been able to achieve their targets for example, in passing exams satisfactorily or passing college entrance exams (Hadianto et al., 2021a). This phenomenon occurs because the teacher has not conveyed how to read and, at the same time, measured the students' reading results so that students are aware of their own reading results. This has been studied by several previous studies (Hadianto et al., 2021b; Trudell, 2019). The main goal of learning to read is to achieve a good level of metacomprehension and develop methods or interventions to improve students' reading abilities. There have been several previous studies that examined various methods to improve reading ability. However, in this study, researchers focused on two aspects of readers' metacomprehension. First, researchers study metacognitive components that can predict reading comprehension, which is tested through questions with a basic level of understanding (text-based) and questions that require deeper understanding (inferential reasoning). Next, researchers studied the relationship between reading comprehension skills and the level of accuracy of metacomprehension, both text-based and inferential. Through this research focus, researchers can obtain information about the relationship between metacognition and reading comprehension, for example, the ability to evaluate comprehension and the level of understanding. Although several previous studies provide evidence of the benefits of metacognitive knowledge, the research is still unclear about its relationship with reading comprehension skills (Gutierrez et al., 2021; Jaeger, 2019). Previous research, including research on the role of verbal cues to see the relationship between metacognition and reading strategies, is still unclear and has no impact (Johann et al., 2020; Shadiev & Huang, 2020). Additionally, other studies found that interventions used to improve metacomprehension did not have a significant impact on reading comprehension abilities (Burin et al., 2020; Liu & Gu, 2020).

These studies still do not clearly describe the role of metacomprehension in reading comprehension. Based on this view, reader monitoring can be said to be successful when readers realize that they have not fully realized some parts of the text, so the reader will make serious efforts to improve their understanding, for example by repeating reading. So, there is a difference between the monitoring process (evaluating understanding) and regulation (improving understanding). Researchers adopted this concept to study metacomprehension and its influence on reading comprehension. Based on previous studies that have been conducted, students' current metacomprehension accuracy is still low (Ebadi & Ashrafabadi, 2022; Samiei & Ebadi, 2021). This is caused by teachers not being optimal in delivering reading strategies that can measure the results of their own reading. Several studies involving students making predictions about the results of their own reading prove that these predictions are still weak. Even though predictions are made at a basic level, the results obtained still have a low level of accuracy. Basic predictions include predictions on overall understanding (predicting the level of success on a test) and predicting the results of information obtained that is conceptual in nature, for example, remembering definitions. The relationship between predictions and performance is used as a measurement evaluation. Students can be said to have successfully evaluated their level of understanding when they are quite accurate in predicting their level of understanding.

Specifically, metacomprehension assessments require careful evaluation. Readers with good and poor inferential skills will base reading judgments on different information (Karami, 2021; Song & Bruning, 2016). For example, readers with high inferential skills are likely to encounter interference at the level of situational model representation. Readers with high inference abilities are more intense in drawing conclusions and obtaining information by involving previous knowledge. Readers like this will be better able to gain a deeper understanding. Readers who have low inferential skills tend to produce few conclusions and do not notice disturbances at the situation model representation level, but will have more difficulty at the text-based level or acquiring text-based knowledge. Other research confirms that the quality of mental representation has a positive influence on meta-comprehension accuracy. If the reader can draw appropriate conclusions, the reader has better metacomprehension accuracy because the reader uses signs at the situation model level rather than at the text-based level (Tengberg, 2018; Zou & Ou, 2020).

This concept is supported by several previous studies that state that metacomprehension accuracy can be improved using certain methods during or after reading (Bonifacci et al., 2022; Malakul & Park, 2023). This is done to develop mental representations that are more complete and easier to obtain. This method can include ranking keywords, explaining yourself while reading, and constructing a concept map. This concept can be linked to the Kintsch model, which states that it will be easier for readers to access a more complete model of the text situation if the reader makes a summary after finishing reading. This can also happen to readers who create keywords; the reader's metacomprehension assessment will be more in line with reading comprehension tests (Mawyer & Johnson, 2019; Metsala & Kalindi, 2022). This allows students to carry out valid assessments. In Anderson and Thiede's (2003) study, higher metacomprehension accuracy scores were obtained by the group that made summaries than the group that did not make summaries. This research was retested on long and short texts with the result that the reader's mental representation had an influence on students' metacomprehension. Apart from that, mental representations also encourage readers to engage in inferential processes, which can increase the accuracy of metacomprehension.

Based on the preliminary explanation and theory above, through this research, the researcher focuses on studying the role and relationship of metacognitive knowledge with the reader's level of understanding at various levels, namely the linguistic, textual, and situational levels. By focusing on the research object, the researcher formulated this research in two studies, namely the role of metacognition (planning, monitoring, and evaluating) on reading comprehension skills at the text-based and inferential levels. The second study looked at the role of reading comprehension performance on the absolute level of accuracy. metacomprehension. Based on the research objectives, the researcher formulated several problems, including: 1) investigating the role of metacognition (planning, monitoring, and evaluating) carried out by students on students' level of understanding at the textual and inferential levels; 2) investigating the role of reading comprehension in predicting the absolute accuracy of metacomprehension; and 3) investigating the relationship between metacomprehension accuracy and reading comprehension performance based on inferential and textual question types.

METHOD

The approach used in this research is a quantitative approach, which is a type of quantitative research. The method used in the research was quasi-experimental to investigate the role of inferential abilities and metacognitive abilities in improving reading comprehension abilities. Apart from that, this research also uses correlational methods to study the relationship between these three variables (metacognitive components, inferential abilities, and reading comprehension abilities). Based on the problem formulation proposed, this research divides methods based on two studies. The first study was used to answer the first and second problem formulations, while the second study was used to answer the third problem formulation. The first research study involved 300 junior high school students, with 150 female students and 150 male students, taken from 8 schools in the Ciamis City area. The students' ages were in the range of 11–14 years (M = 13.05, SD = 1.20). The schools involved

in this research were public and private schools. The students selected in the sample are students who have relatively similar or close national exam scores. Students' metacomprehension skills were measured using a reading awareness scale commonly used for students aged 8–13 years. The reading awareness measurement scale consists of 56 multiple-choice questions with three answer choices to assess three dimensions of metacomprehension, namely planning, monitoring, and evaluating.

This measurement scale was adopted to measure students' metacognitive competence by giving students the opportunity to assess themselves. Questions in the planning dimension are used to determine the choice of reading strategy; the monitoring dimension is used to determine the ability to adjust attention and effort while reading; and the evaluation dimension is used to determine whether the student's level of understanding meets the criteria or not. Questions to measure reading awareness are listed in Table 1. The reading awareness measurement dimension is related to the concept of regulation when reading, while the evaluation dimension is related to self-assessment regarding reading comprehension. Reading awareness measurements have been tested for reliability and validity. The reliability test was empirically conducted on students, while the validity test was carried out through expert judgment carried out by six doctor-qualified reading experts. From the test results, it was obtained that Cronbach's internal consistency reliability coefficient met the criteria for use with a value of (α =.70, planning;.75, monitoring;.74, evaluation: 80).

Tabel 1
Measuring Reading Awareness for Each Dimension

PLANNING
What do you do before reading?
a) I do not plan anything before reading. [0 points]
b) I consider the important points of the text before reading. [2 points]
c) I choose a comfortable place and position to read. [1 point]
MONITORING
What do you do while reading a book when you encounter a difficult passage?
a) I pause and think about the passage to understand it [2 points]
b) I stopped reading because there were parts I did not understand. [0 points]
c) I keep reading and delay understanding the passage at the end. [1 point]
EVALUATION
Is evaluation important in carrying out reading activities:
a) I think it is useful to assess the extent of my understanding. [2 points]
b) I think evaluating understanding is good but it should be done by the teacher [1 point]
c) I think that evaluating does not improve my understanding. [0 points]

The level of understanding of students' reading results was evaluated using texts about social phenomena in this research. Discourse is created by collaborating with discourse experts and validated by expert judgment. Questions to measure understanding use the construction-integration model. This model is used to classify questions. The questions consist of 25 questions, composed of 12 basic text-based questions and 13 inferential questions. For text-based (textual) questions, the answers are contained in the text explicitly. However, in inferential questions, the answers require the ability to draw appropriate conclusions because they are not stated explicitly. Researchers use a rubric to assess the correct answers. The score range starts from 0-2, with 0 for a wrong answer, 1 for a correct but incomplete or weak answer, and 2 for a correct and complete answer. The average text length is 500 words. The total score range obtained is 0–40. Each student gets a score according to their reading performance, namely being able to answer textual and inferential questions. Students who are mentally coherent during or after reading will be better able to solve inferential questions. However, students who are only able to answer textual questions have a limited level of understanding.

The Cornbach's reliability coefficient value meets the criteria with values: textual questions: 0.76; inferential questions: 0.90. Research was carried out with permission from the relevant institutions. After obtaining permission, data collection began by first completing a reading awareness

test, which lasted 50 minutes. After that, students receive an expository text about social phenomena. Students get 50 minutes to read. After the reading process is complete, a reading comprehension test is carried out. The results of this test are then processed and presented in the form of descriptive statistics. In the final session, the researcher studied the effects of textual and inferential question types on students' reading comprehension results and students' metacomprehension accuracy in each text. Researchers analyzed the data using MANOVA separately so that the effects of metacomprehension performance and accuracy could be described more clearly. Researchers controlled for decreasing error rates using Bonferroni adjustments. The researcher selected deviant data obtained from the reading awareness scale and reading comprehension test and evaluated them before the analysis was carried out. This deviation analysis found 11 deviations (6 in the planning stage and 5 in the evaluation stage of the reading awareness scale). This deviation is identified through case wise diagnostics in regression by determining standard residuals outside the three standard deviation components. From the number of samples assessed, researchers eliminated deviant data and then carried out data analysis on 186 other results. The data is then tested for normality, homogeneity, and linearity. Descriptive statistics are presented using the reading awareness scale and reading comprehension performance, which are presented in Table 2 in the results section. To answer the first problem formulation, the researcher calculated the zero-order Pearson correlation coefficient, and the results are presented in Table 3. To answer the second problem formulation, a series of simultaneous tests, or standard least squares regression, was carried out. Comprehension performance was recorded on each component of metacomprehension in proportion to variance. This is done to adjust the reasonableness of the p value by adapting to the Bonferroni analysis.

RESULTS AND DISCUSSION

To answer the first problem formulation, descriptive statistics are presented on students' reading comprehension results using the reading awareness scale. Of the three dimensions of metacognition, the one with the highest average is the planning dimension, followed by the monitoring dimension, and finally the evaluation dimension. This indicates that almost every student plan when reading. The role of metacognition (planning, monitoring, and evaluating) in reading comprehension results is shown in Table 2. The reading results tested with textual (M = 9.13) and inferential (M = 12.81) questions illustrate that the role of metacognition in reading comprehension has a very significant impact on improving inferential comprehension reading abilities because, through metacognition, readers can control their reading abilities before, during, and after reading. To answer the second problem formulation, the correlation between variables is explained as shown in Table 3. The correlation between variables shows a positive correlation. It is interesting that the metacognitive component of planning correlates more strongly with questions to test inferential understanding than with textual questions. Based on the results of simultaneous regression, it shows that the metacognitive components (planning, monitoring, and evaluation) are strong predictors of inferential understanding ($F(4,215) = 8.40$, $p = .001$, $R2 = .15$), but not strong predictors of textual questions. $F(4, 215) = 3.24$, $p = 0.05$. Textual questions are influenced by the monitoring dimension. The monitoring dimension has a significant impact on textual reading comprehension results ($p = .08$), as shown in Table 4. Based on the simultaneous regression results, the monitoring and evaluation dimensions are significant predictors of inferential understanding, but the strongest predictor is the evaluation dimension. Questions about students' self-evaluation are effective in predicting students' inferential understanding abilities.

Table 2
Descriptive Statistics of the Reading Awareness Scale and Reading Performance of Textual and Inferential Comprehension

Variable	M	SD	Minimum	Maximum	Skew	Kurtosis
Reading Awareness						
Planning	40.52	6.80	27.00	50.00	−0.22	−0.41
Monitoring	25.90	5.35	17.00	34.00	−0.40	−0.46
Evaluation	20.61	4.82	15.00	30.00	−0.35	−0.30
Read						
Understanding	9.13	5.21	2.00	14.00	−0.52	−1.21
Text Based	12.81	5.42	0.00	19.00	−0.50	−0.60

Table 3
Correlation Matrix Between Question Types and Metacognitive Dimensions

Variable	1	2	3	4	5
1. Text based	–	.65**	.18*	.18*	.20*
2. Inferential		–	.27*	.12	.33**
3. Planning			–	.45**	.36**
4. Monitoring				–	.28*
5. Evaluation					–
Skew	−0.42	−0.40	−0.50	−0.91	−0.52
Kurtosis	−1.10	−0.50	−0.06	0.40	0.50

* p < .05
** p < .01 (one-tailed)

Table 4
Regression of Reading Standards for Textual and Inferential Comprehension Based on the Cognitive Dimensions

Predictor	B+ (CI95%)	β−	T	p
Text-Based Performance				
Planning	0.05 (−0.10, 0.20)	0.08	0.80	0.50 ns
Monitoring	0.15 (−0.06, 0.32)	0.16	1.52	0.20 ns
Evaluation	0.15 (−0.08, 0.40)	0.13	1.30	0.25 ns
Inferential Performance				
Planning	0.17 (0.04, 0.32)	0.18	3.04	0.042*
Monitoring	−0.06 (−0.30, 0.20)	−0.06	−0.45	0.80 ns
Evaluation	0.50 (0.23, 0.72)	0.35	3.60	0.003**

To answer the third problem formulation, the metacomprehension accuracy score of each text is presented. Descriptive statistics for reading comprehension are presented in Table 5. Based on Table 5, it is found that the type of text greatly influences the type of textual (text-based) questions. The metacomprehension accuracy scores for each type of question and type of text are presented in Table 6. Pearson's zero-order correlation coefficient is presented in Table 7. The relationship between reading results and metacomprehension accuracy shows a negative correlation, as stated in Table 7. This shows that the reading comprehension ability is good. both greatly impact the accuracy of metacomprhension. The higher the reading comprehension ability, the lower the calibration error. This is one of the functions of the method used, namely calculating absolute metacomprehension accuracy. The correlation coefficient value in Table 7 explains that metacomprehension accuracy is very closely related to the type of question, both inferential and textual. Text-based (textual) reading performance has a stronger correlation with metacomprehension scores compared to inferential reading performance. Based on standard regression results, inferential questions in social inequality texts were a significant predictor of metacomprehension accuracy, with a value of $F(4,90) = 45.15$, p

=.001, and R2 =.55. Performance on textual questions in social gap texts was able to predict metacomprehension accuracy but was not very significant, with a value of (F = 4,90) = 30.21, p =.001, R2 =.40. This pattern is also shown in natural disaster texts. Inferential question performance can better predict students' metacomprehension accuracy. Performance on inferential questions has a value of F (4,90) = 32.52, p =.001, R2 =.45, while performance on textual questions has a value of F (4,80) = 30.56, p =.001, R2 = 0.43. The results of the standard regression model are listed in Table 8.

Table 5
Performance Descriptive Statistics Based on Question Type and Text

Question type	Natural disasters				Social Inequality			
	M	SD	Skew	Kurtosis	M	SD	Skew	Kurtosis
Inferential	1.80	1.06	0.72	0.34	1.89	1.20	0.4	0.05
Text based	3.61	1.42	0.12	−0.92	4.03	1.60	−0.33	−1.06

Table 6
Descriptive Statistics of Metacomprehension Accuracy Based on Question Type and Text

Question type	Question Type	Natural disasters				Social Inequality			
		M	SD	Skew	Kurtosis	M	SD	Skew	Kurtosis
Inferential	Inferential	2.20	1.18	0.52	0.23	2.15	1.24	0.20	−0.58
Text based	Text-based	1.62	1.18	0.43	−0.51	1.60	1.14	0.90	1.06

Table 7
Correlation Matrix of Reading Comprehension Performance and Metacomprehension Accuracy Based on Text Type and Question

Variable	1	2	3	4
1. Natural Disaster Performance	–	.30*	−.75**	.03
2. Social Inequality Performance	.95**	–	−.12	−.64**
3. Natural Disasters	−.76**	−.60**	–	−.08
4. Social Inequality	−.70**	−.80**	.45**	–

Correlation coefficients above the diagonal are used for text-based level questions, and those below the diagonal are for inferential level questions. Based on Table 7, students' reading comprehension abilities depend on whether their level of understanding is deep or not yet optimal. To answer the fourth problem formulation, from Table 7, we can see that the relationship between the results of reading comprehension and metacomprehension accuracy shows a high correlation on inferential level questions (r value = 0.35-0.95). This pattern does not occur in textual questions. The relationship between reading comprehension results and metacomprehension accuracy on textual questions is lower, with a value of r = 0.08–0.070. Based on the accuracy index, a high value means a larger calibration error, and a negative correlation shows that the higher the comprehension performance, the lower the calibration error. Based on the results of the one-way MANOVA test on the ability to read text comprehension, Natural Disasters and Social Inequalities found that the type of textual or inferential questions had a significant effect on students' reading results, with a value of F (3,150) = 19.40, p < 001, 2 =.182. Increased ability reading based on question type, including 1) the results of reading comprehension in the text Natural Disasters obtained a value of (1,258) = 18.81, p < 001, 2 = 0.089, while the results of reading comprehension in the text and Social Inequality obtained a value of F(1,180) = 35, 32, p < 001, 2 = 0.172. Students' reading comprehension performance on textual questions in both texts (natural disasters (M = 3.48, SD = 1.45) and social inequality (M = 3.12, SD = 1.60)) was superior to students' comprehension performance on the inferential questions (natural disasters, M = 1.80, SD = 1.05; social inequality, M = 1.89, SD = 1.20). To answer the third problem formulation, the following is also presented in Table 8 of the calculation results of the

standard ability regression test: reading students' understanding of each type of question and both types of text.

Table 8
Standardized Regression Results of Textual and Inferential Reading Comprehension Performance on Both Texts

Predictor	B+ (CI95%)	β−	T	p
Absolute Textual Accuracy				
Social inequality performance				
Inferential	0.11 (−0.08, 0.30)	0.10	1.31	0.31 ns
Textual	−0.50 (−0.60, −0.35)	−0.65	−6.89	0.001**
Natural disaster performance				
Inferential	−0.10 (−0.33, 0.13)	−0.10	−0.94	0.44 ns
Textual	−0.60 (−0.70, −0.42)	−0.63	−7.20	0.001**
Inferential Absolute Accuracy				
Social inequality performance				
Inferential	−0.75 (−0.93, −0.62)	−0.80	−9.72	0.001**
Textual	0.01 (−0.13, 0.15)	0.18	0.24	0.91 ns
Natural disaster performance				
Inferential	−0.75 (−0.92, −0.60)	−0.72	−7.70	0.001**
Textual	0.05 (−0.15, 0.23)	0.06	0.45	0.74 ns

Based on the results of the metacomprehension test, question type (textual and inferential) has a significant impact on metacomprehension accuracy in all multivariates, with a value of F (2,182) = 9.60, p <.001, 2 =.104. Based on the results of the univariate test, the type of question also has a significant effect on the text of natural disasters, with a value of F (1,190) = 11.97, p =.001, 2 = 0.071, and the text of social inequality, F (1,191) = 12.13, p =.001, 2 =.071. When compared between the two texts, students' metacomprehension accuracy in the textual type (Natural Disasters, M = 1.80, SD = 1.20; Social Inequality, M = 1.60, SD = 1.15) is higher than in the inferential type. Based on these findings, it can be concluded that students' metacomprehension accuracy on textual question types is consistently better than their metacomprehension accuracy on inferential question types. This pattern is found in both texts.

In the first study, researchers revealed the role of metacognition (planning, monitoring, and evaluating) on reading comprehension levels by looking at students' performance in answering textual and inferential types of questions. Metacognition monitoring is carried out by self-reporting. Next, the researcher carried out an absolute global metacognitive assessment of the students' reading comprehension level after reading the text. The first research findings included the level of knowledge in evaluating students' reading, which was assessed by reading awareness, and there was a significant relationship with students' ability to answer inferential-type questions. These findings show that evaluative understanding of reading, which includes planning, monitoring, and evaluating, is an important aspect of supporting students' levels of reading comprehension, especially in increasing inferential understanding. This finding relates to the knowledge of reading strategies used by students, which greatly influences understanding (Song & Bruning, 2016; Zou & Ou, 2020). This reading strategy can be applied at each phase of metacognition (planning, monitoring, and evaluation) so that students' level of understanding of the text is optimal. Planning is included as a significant predictor of inferential understanding performance (Ciampa & Reisboard, 2020; Lo & Leung, 2022). These findings indicate that students need skills in planning strategies before reading is carried out in order to understand texts more deeply, especially complex texts and texts that require inferential understanding (Child et al., 2019; Watter et al., 2022). So, it can be concluded that readers who have high reading planning skills can produce quality or deeper understanding and conclusions about texts than students who do not plan reading.

Furthermore, it was found that global absolute metacomprehension accuracy showed different performance relationships across textual and inferential question text types. Metacomprehension accuracy on inferential questions shows a higher relationship than on textual questions. Students who are better at answering inferential questions and have absolute global comprehension accuracy tend to have better cognitive abilities. This indicates that students' reading comprehension ability depends on their ability to process the text (Burin et al., 2020; Hadianto et al., 2021c). This finding is in accordance with the level of disturbance theory from Dunlosky (2005). Students gain reading comprehension based on the level of interference they experience. Therefore, students who draw many conclusions from reading the text can estimate their level of understanding based on their ability to draw these conclusions. However, readers who are unable to make many inferences (less skilled reading ability) rate their level of comprehension at different levels (Johann et al., 2020; Liu & Gu, 2020). Metacomprehension is carried out so that students are aware of their own level of understanding. Therefore, adequate inferential abilities are needed for students to be able to predict their own level of reading success. It can be concluded that in the first study, based on monitoring the global absolute assessment, inferential abilities and students' level of distraction had a significant influence on students' metacomprehension.

The differences in performance on metacomprehension accuracy prove that there is a use of different cues in assessing one's own level of reading comprehension. Level of interference theory says that readers can guess how well they understand a text by looking at things like interruptions in the flow of reading, assumptions about what the text means, how well those assumptions are represented, and how accurate those assumptions are. In addition, interference can also occur at the level of text representation (Gutierrez et al., 2021; Higgins et al., 2015). If interference occurs at a certain level, the reader's assessment of metacomprehension accuracy tends to be based on the textual level rather than conclusions that require quality reasoning abilities. So, readers who have better textual comprehension reading skills tend to understand texts based on the explicit information contained in the text and the relationships between adjacent ideas in the text (Inácio et al., 2020; Özbek & Ergül, 2022). However, textual readers also have limitations because explicit information also involves several dimensions, for example, detailed, explicit ideas that require a high level of understanding. Other research that strengthens these findings is that students' internal factors are very strong predictors of students' metacomprehension accuracy (Arrington et al., 2014; Meguro, 2019). Inferential readers understand reading texts using more sophisticated cues such as self-explanation and elaboration. To sum up, a mental representation that leads to good inferential understanding performance needs a text representation that makes sense, so there is harmony between performance assessments and actual student performance (better metacomputational accuracy). Metacognitive abilities greatly influence the reading process and the results of students' reading comprehension. Metacognition plays an important role in selecting information that is relevant or not with appropriate text representation (Chen et al., 2021; Watter et al., 2022). Cohesive text is helpful for less skilled readers but a hindrance for skilled readers. This finding is very interesting because it proves that metacognition greatly influences the results of reading comprehension, and the specific metacognition students use can be different depending on the ability of the reader, as was the finding in this study. The research results prove that inferential readers have less accurate monitoring of explicit information, and this makes it difficult for them to gain access to inferential representations of text.

CONCLUSION

Based on the research results, it can be concluded that students with good inferential skills have better metacognitive abilities, especially regarding reading evaluation abilities. Readers with this profile will try to adapt their mental representation of the text to their understanding. In addition, they have good metacomprehension accuracy at the inertial level of understanding. However, readers with textual skills have good metacomprehension accuracy abilities at the textual level only. So, these two findings show that inferential and metacognitive skills, reading strategies, and learning evaluation play a very important role in facilitating students to achieve an optimal level of reading comprehension. A

reader must have regulatory skills so that they can guide their reading skills and help students continue to excel in the future. The implication of this research is that teachers must emphasize inferential reasoning abilities in the learning process because these reasoning abilities not only help in understanding text or material but also improve metacomprehension abilities. Students who have the ability to monitor their own learning tend to be more independent and successful in the future. Interventions that can train students' inferential and metacognitive abilities are recommended for learning to read.

This research has several limitations, including that the sample was taken from elementary and junior high schools, so it needs to be tested on a sample of upper secondary level students; it does not pay attention to gender; the initial reading ability research was not measured; and the progress of students' reading ability is not visible in detail. In addition, the measurement of metacomprehension accuracy is carried out through self-reporting, which may result in students being dishonest and not assessing metacognition as objectively as possible. Despite several shortcomings of this study, researchers believe that this research contributes to making teaching reading more effective. Based on the limitations of this research, future research must pay attention to the recommended variables, namely gender. Measurement should not only involve self-reporting; it can also be complemented by reporting by parents or friends and deeper qualitative analysis.

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