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The Effectiveness Of Cognitive And Metacognitive Reading Strategies On Narrative Reading Literacy

Agustina Dwi Fahruddiningsih,[1] Nurul Chojimah,[2] Susanto,[3] Erna Iftanti[4]
[1234]UIN Sayyid Ali Rahmatullah, Tulungagung
[1]agustina.manega@gmail.com, [2]nurulchoy2@yahoo.com,
[3]damarsusanto53@gmail.com , [4]Ernataufic72@gmail.com,

ABSTRACT :
This study was motivated by the academic anxiety experienced by senior high school students who struggle to comprehend narrative texts deeply and critically. Despite the importance of reading literacy in the twenty-first century, many students still engage in passive reading, focusing only on word recognition rather than higher-order comprehension. This research aimed to examine the effectiveness of integrating cognitive and metacognitive reading strategies in improving students' narrative reading literacy. A quantitative quasi-experimental design was employed, involving two groups of eleventh-grade students at MAN 1 Trenggalek: an experimental group (n = 30) taught using cognitive and metacognitive strategies, and a control group (n = 30) taught through conventional methods. Data were collected through pre-tests and post-tests and analyzed using SPSS 25.0, including normality, homogeneity, and Mann-Whitney U tests. The results showed that the experimental group's mean score increased from 45.00 to 80.17, while the control group improved from 46.33 to 61.33. The Mann-Whitney U test revealed a significant difference between the two groups (Sig. = 0.000 < 0.05). These findings indicate that the integration of cognitive and metacognitive strategies significantly enhances students' narrative reading literacy and helps reduce academic anxiety by fostering active, reflective, and self-regulated reading.

Key words: *cognitive, metacognitive, reading strategies, narrative reading literacy*

INTRODUCTION

Reading literacy in the 21st-century educational landscape has undergone a significant evolution in meaning, moving beyond its traditional definition as a mechanical ability to decode text. The OECD within the framework of the Programme for International Student Assessment (PISA), defines reading literacy as the ability to understand, use, evaluate, reflect on, and engage critically with written texts (Koyuncu and Firat 2020). This competency is aimed at achieving personal goals, developing one's knowledge base and potential, and participating fully in society. For senior high school students, particularly in the context of learning English as a Foreign Language (EFL), strong reading literacy is no longer merely an academic support tool but an essential global citizenship competency (Hasni 2025). It serves as the main gateway to accessing the treasure trove of global knowledge, understanding diverse cross-cultural perspectives, and building a solid foundation for learning.

Aligning with these global demands, the Indonesian curriculum positions narrative texts as a primary genre in the eleventh grade to develop students' literacy competence (Listiyanto and

Maureen 2025). Narrative texts with their rich characteristics, such as complex plots, dynamic character development, and implicit layers of meaning, offer an ideal medium for training deep comprehension (Boyd, Blackburn, and Pennebaker 2020). However, a significant gap exists between curricular expectations and on-the-ground reality. Based on preliminary observations and learning evaluation reports, many students at the senior high school level continue to face substantial difficulties in understanding narrative texts comprehensively and critically.

Difficulties in comprehensively and critically understanding narrative texts are not limited to literal comprehension, but rather to higher-order thinking skills. Students often fail to make logical inferences, interpret character motivations and embedded values, and perform critical analyses of a story's structure and moral message (Aziz and Rawian 2022). This indicates that the root of the problem is not solely the text's complexity but rather the passive reading approach adopted by students. Many learners are trapped in a linear reading routine is reading word-by-word and then answering factual comprehension questions, without any strategic cognitive and metacognitive engagement. Consequently reading literacy scores remain low, both in national exams and daily assessments, reflecting the students' inability to construct a coherent mental model of the text they have read.

In response to this challenge, the fields of cognitive and educational psychology offer solutions through the application of cognitive and metacognitive reading strategies (Ali and Razali 2019). Cognitive reading strategies, as explained by (Semtin and Maniam 2015) with "specific learning tasks and employed in the learning process, such as relating the new words in mind and writing down the main idea." Acording Maria Cognitive reading strategies include making predictions, skimming, visualizing, and questioning (Avgeri 2022). These strategies function as "tools" that directly deconstruct and build understanding from the text.

Metacognitive strategies, a concept fundamentally introduced by Flavell, refer to "thinking about thinking." This is the ability to regulate and monitor one's own cognitive processes. Metacognitive strategies encompasses three main phases: (1) Planning (setting a purpose for reading and selecting strategies to use), (2) Monitoring (checking one's understanding continuously while reading), and (3) Evaluation (assessing the extent to which the reading purpose has been achieved after finishing) (Flavell 1979; Zhang and Seepho 2013).

Metacognitive strategies act as the "executive manager" that consciously controls and allocates cognitive "tools" efficiently (Livingston 2003). The synergy between the two is considered ideal. Cognitive strategies without metacognition can lack direction, while metacognition without cognitive strategies lacks the tools for execution. This integration creates readers who are not only skillful but also independent and strategic.

Although the effectiveness of each strategy has been supported by a number of studies, such as Pammu on metacognitive strategies for providing alternative models of reading instruction that are more effective (Pammu, Amir, and Maasum 2014). Pertiwi and Erna, cognitive reading strategies through think-aloud exercises and give explicit instruction on them, including summarizing, questioning, predicting, and clarifying (Pertiwi and Iftanti 2024).

A literature review reveals several critical gaps. First, there is still limited research investigating the integrative and simultaneous application of both strategies as a cohesive intervention package. Second, the context of Madrasah Aliyah (MA) as a unique learning environment with distinct socio-cultural and religious characteristics is rarely the locus of similar research. Third, there has not been much quasi-experimental research that rigorously measures the impact of integrating these strategies on narrative reading literacy encompassing the dimensions of evaluation and reflection.

This research is designed to address these gaps. The selection of MAN I Trenggalek as the research location is based on strategic considerations. This madrasah has a reputation as a progressive institution that is open to pedagogical innovation. Based on preliminary observations, MAN I Trenggalek actively implements various modern teaching methods and demonstrates a strong commitment to improving education quality, including in the subject of English.[1] These characteristics make it a fertile ground and receptive environment for testing the effectiveness of a complex learning intervention such as an integrated cognitive-metacognitive strategy.

Based on the above exposition, this study aims to examine the effectiveness of teaching integrated cognitive and metacognitive reading strategies on the narrative text reading literacy of eleventh-grade students at MAN I Trenggalek. The problem formulation of this study can be stated as follows: Is there any significant difference in students' narrative reading literacy scores between the class taught using cognitive reading strategies and the class taught using non-cognitive reading strategies? Is there any significant difference in students' narrative reading literacy scores between the class taught using metacognitive reading strategies and the class taught using non-metacognitive reading strategies? Furthermore, is there any significant influence of using cognitive and metacognitive reading strategies on improving narrative reading literacy among eleventh-grade students at MAN I Trenggalek?. This research is expected not only to provide a practical pedagogical model for teachers but also to enrich the empirical evidence on strategy-based instruction in an underexplored educational context.

[1] Results of preliminary observations in class 11 at MAN 1 Trenggalek, on October 11, 2025

Methods

This study employed a quantitative approach with a quasi-experimental design using pre-test and post-test. The design was chosen to examine the effectiveness of cognitive and metacognitive reading strategies in improving students' narrative reading literacy (Creswell 2021). Two groups were involved in the study: an experimental group that received treatment through cognitive and metacognitive reading strategies, and a control group that was taught using conventional methods. This design allowed the researcher to measure students' performance before and after treatment to identify any significant differences between the groups.

The research was conducted at MAN 1 Trenggalek, with the population consisting of eleventh-grade students in the 2024/2025 academic year. The sample consists of 30 students of eleventh grade C and 30 students of eleventh grade G from MAN I Trenggalek. The instruments used for data collection were tests, observation, and documentation. The main instrument was a narrative reading literacy test consisting of 20 multiple-choice questions developed and validated by experts to ensure content and construct validity.

Instrument reliability was tested using Cronbach's Alpha to ensure consistency and accuracy of the test items (Harley Agustian et al. 2024). The collected data were analyzed using SPSS 25.0 software. The analysis procedures included normality and homogeneity tests, followed by independent sample t-tests to determine whether there were significant differences between the two groups (Sugiyono 2013). In addition, the N-Gain test was applied to measure the level of improvement in students' narrative reading literacy after being taught using cognitive and metacognitive reading strategies.

Result

The research data were collected through tests consisting of a Pre-test and a Post-test administered to two groups of students: an Experimental group and a Control group. Each group consisted of 30 eleventh-grade students from MAN 1 Trenggalek, making a total of 60 participants. The Experimental group was taught using cognitive and metacognitive reading strategies, while the Control group received instruction through conventional methods without these strategies. Both groups were given the same Pre-test to measure their initial narrative reading literacy ability before treatment and the same Post-test after the treatment to evaluate their improvement. The test consisted of 20 multiple-choice items focusing on students' comprehension, inference, and evaluation skills in narrative texts.

Table 1. The Pre-test and Post-test Scores of The Experimental Group

No	Experimental Group		
	Name	Pre-Test	Post-Test
1	AID	55	75
2	AKA	45	70
3	ARG	45	65
4	ABKDN	35	60
5	AMH	60	70
6	ADS	60	75
7	ALU	50	75
8	FCC	45	65
9	HAF	35	70

No	Experimental Group		
	Name	Pre-Test	Post-Test
10	IAF	40	75
11	IAS	50	80
12	JRP	45	60
13	KAJ	60	65
14	KAP	35	90
15	KCJ	60	100
16	KINI	40	100
17	KCA	35	100
18	MAS	55	100
19	MAZ	50	90
20	MN	40	80
21	MFAA	45	80
22	NBS	30	90
23	NAES	45	80
24	NCDK	45	75
25	RNA	45	85
26	SKS	55	80
27	SSM	40	90
28	UKN	50	95
29	WHR	25	90
30	ZMAE	30	75

Table 2. The Pre-test and Post-test Scores of The Control Group

No	Experimental Group		
	Name	Pre-Test	Post-Test
1	AZJM	45	60
2	APA	40	70
3	AEAD	35	70
4	AZIR	40	60
5	AFZ	30	70
6	BSM	35	50
7	BFN	45	50
8	CF	30	60
9	DAF	50	80
10	F	60	60
11	FALR	55	60
12	GNNW	55	80
13	HFI	70	70
14	HWF	40	40
15	IZ	35	80

No	Experimental Group		
	Name	Pre-Test	Post-Test
16	LAI	50	60
17	MLFI	55	60
18	MA	45	50
19	NSR	60	65
20	NNM	60	65
21	NHA	60	60
22	NAP	40	60
23	RRM	50	60
24	RBS	30	60
25	RMP	35	70
26	SZ	45	60
27	SSM	30	30
28	TRN	50	60
29	TY	60	60
30	WFR	55	60

Descriptive Statistics of Pretest and Posttest

The descriptive analysis was conducted to determine the students' reading literacy performance before and after the treatment. The results are presented in the following table.

Table 3. Descriptive Statistics of Pretest and Posttest

Group	N	Pretest Mean	Posttest Mean	Mean Gain	Std. Deviation (Posttest)	Min	Max	Range
Experimental	30	45.00	80.17	35.17	12.14	60	100	40
Control	30	46.33	61.33	15.00	10.66	30	80	50

The data in Table 3 show that the pretest mean scores of both groups were almost equal (45.00 for the experimental group and 46.33 for the control group), indicating that the students had similar initial abilities in narrative reading literacy. However, after the treatment, the posttest mean score of the experimental group increased to 80.17, while the control group reached only 61.33. The mean gain difference of 20.17 points shows a substantial improvement among students taught using cognitive and metacognitive reading strategies.

Normality Test

The normality test was conducted using the Kolmogorov-Smirnov and Shapiro-Wilk tests to determine whether the data were normally distributed.

Table 4. Descriptive Statistics of Pretest and Posttest

Variable	Class	Kolmogorov-Smirnov Sig.	Shapiro-Wilk Sig.	Interpretation
Pretest	Experimental	0.183	0.219	Normal
	Control	0.200	0.113	Normal
Posttest	Experimental	0.145	0.101	Normal
	Control	0.000	0.002	Not Normal

The normality test results indicated that the pretest data for both groups were normally distributed (Sig. > 0.05), but the posttest data from the control group were not normally distributed (Sig. < 0.05). Therefore, a nonparametric test (Mann-Whitney U) was conducted in the hypothesis testing.

Homogeneity Test

The homogeneity test was carried out using Levene's Test to ensure that both groups had equal variance.

Table 5. Test of Homogeneity of Variances

Variable	Levene Statistic	Sig.	Interpretation
Pretest	1.927	0.170	Homogeneous
Posttest	2.130	0.150	Homogeneous

The results show that all variables have Sig. values greater than 0.05, indicating that the data between the experimental and control groups are homogeneous, and thus the assumption of equal variance is met.

Independent Sample t-Test (Mann-Whitney U Test)

The independent sample t-test was used to identify whether there was a significant difference in students' reading literacy between the two groups. Since the posttest data of the control group were not normally distributed, the Mann-Whitney U test was used for posttest and gain score comparison.

Table 6. Mann-Whitney U Test

Variable	Test Type	Sig. (2-tailed)	Interpretation
Posttest	Mann-Whitney U	0.000 (< 0.05)	Significant difference
Improvement	Mann-Whitney U	0.000 (< 0.05)	Significant difference

The results in Table 6 indicate that there is a significant difference in students' posttest and improvement scores between the experimental and control groups ($p < 0.05$). Hence, the use of cognitive and metacognitive reading strategies has a significant impact on improving students' narrative reading literacy.

Discussion

The Difference in Narrative Reading Literacy between Students Taught Using Cognitive Reading Strategies and Those Taught Using Non-Cognitive Reading Strategies

Cognitive strategies are defined as mental processes involving specific actions and directed thinking steps that learners use to understand texts. According to Williams and Burden, these strategies are mental processes that require specific actions and structured thinking steps to aid reading comprehension (Williams and Burden 1997). Cognitive strategies are closely related to specific learning contexts and tasks and involve direct manipulation of learning materials (Luke and Hardy 2012).

The results of the study revealed that students who were taught using cognitive reading strategies demonstrated better narrative reading literacy than those taught using conventional methods. The improvement in students' comprehension performance was evident from their ability to identify main ideas, infer meaning, and summarize narrative texts more effectively. The statistical analysis confirmed that there was a significant difference between the experimental and control groups after the implementation of cognitive strategies, while no significant difference was found before the treatment.

This finding supports the theoretical framework proposed by Anderson and Grabe & Stoller, who emphasize that cognitive strategies, such as predicting, summarizing, and identifying key information enable readers to process textual information more deeply (Anderson 2012; Grabe and Stoller 2019). These strategies help students become active readers who connect ideas within the text and construct meaning efficiently. Similarly, Pressley and Joel that cognitive strategies, once considered accessible only to high-achieving students, can be effectively taught to all learners to enhance their learning outcomes and strategic thinking capabilities. Objectives of cognitive strategies (Pressley and Levin 2012). Systematic application of cognitive strategies enhances

reading comprehension because they train learners to actively engage with text content and internalize the information being read.

The Difference in Narrative Reading Literacy between Students Taught Using Metacognitive Reading Strategies and Those Taught Using Non-Metacognitive Reading Strategies

Metacognitive strategies are defined as a set of higher-order thinking processes that enable individuals to regulate, monitor, and evaluate their own cognitive activities in learning, particularly in reading comprehension. Flavell et aldescribe metacognition as an active process of monitoring and controlling one's cognitive activities toward specific goals (Fitri 2017). According to Anderson, metacognitive strategies involve three main activities are planning, monitoring, and evaluating during the reading process. These three stages form the core of metacognitive awareness that helps readers become more strategic and reflective in understanding texts (Muthmainnah, Ariya, and Adnan 2024).

The findings also showed that the use of metacognitive reading strategies had a positive and significant impact on students' narrative reading literacy. Students who were guided to plan, monitor, and evaluate their comprehension performed better than those who were not exposed to such strategies. The results confirmed that students who practiced metacognitive awareness were more capable of identifying their comprehension problems and applying the appropriate strategies to overcome them.

These results are consistent with Flavell's concept of metacognition, which emphasizes the importance of awareness and control over one's own thinking processes. Such as, Pammu on metacognitive strategies for providing alternative models of reading instruction that are more effective (Pammu, Amir, and Maasum 2014). Metacognitive readers consciously regulate their understanding by setting goals, monitoring comprehension, and reflecting on the effectiveness of the strategies they use. Mokhtari and Reichard, further assert that metacognitively aware learners tend to have higher reading literacy because they engage in self-questioning and reflective evaluation while reading (Mokhtari and Reichard 2002). Therefore, teaching metacognitive strategies not only enhances comprehension but also cultivates independent and strategic readers.

The Influence of Cognitive and Metacognitive Reading Strategies on Improving Narrative Reading Literacy

The integration of cognitive and metacognitive reading strategies was found to significantly enhance students' narrative reading literacy by promoting a more comprehensive and reflective engagement with texts. When applied simultaneously, these strategies cultivate active, analytical, and self-regulated reading behaviors. Students become more aware of their own thought processes, more deliberate in identifying key ideas, and more capable of evaluating their comprehension and adjusting strategies when difficulties arise. Such learners tend to take greater responsibility for their understanding, demonstrating autonomy and confidence in approaching complex narrative materials.

This finding is in line with Ali and Ahghar, who explain that the combination of cognitive and metacognitive strategies produces optimal learning outcomes because both types of strategies complement each other: while cognitive strategies assist students in processing and organizing textual information, metacognitive strategies enable them to monitor, control, and evaluate that cognitive activity (Mehrdad, Ahghar, and Ahghar 2012). emphasize that reading comprehension should be viewed not merely as a linguistic process but as a strategic and reflective act that engages learners in critical thinking and self-awareness. This reflective dimension allows students to connect ideas across the text, make inferences, and interpret meanings beyond the literal level (Hasani and Pahamzah 2022).

The integration of cognitive and metacognitive strategies contributes to the development of self-regulated learning, where students consciously plan, monitor, and evaluate their progress in reading tasks. Learners trained in these strategies are more likely to employ higher-order thinking skills, such as synthesis and evaluation, which are essential for narrative comprehension and interpretation. By internalizing these strategies, students not only enhance their reading achievement but also cultivate lifelong learning habits characterized by strategic awareness, independence, and critical reflection.

Conclusion

This study confirm that cognitive and metacognitive reading strategies, whether implemented separately or integratively, significantly enhance the narrative reading literacy of eleventh-grade students at MAN 1 Trenggalek. Cognitive strategies effectively improve students' abilities to identify main ideas, draw inferences, and summarize narrative texts, while metacognitive strategies strengthen their capacity to plan, monitor, and evaluate their comprehension reflectively. When both strategies are integrated, the impact becomes substantially greater, fully addressing all research questions. Theoretically, this study offers an elaborative contribution by clarifying the synergistic interaction between cognitive processing and metacognitive regulation, a proliferative contribution by expanding the application of strategy-based narrative literacy instruction within the context of Islamic senior high schools, and a cumulative contribution by reinforcing empirical evidence that combines cognitive and metacognitive strategies yield stronger outcomes than applying them independently. These findings have significant implications for teachers, schools, and policymakers, especially in curriculum development, teacher professional training, and the implementation of more strategic, reflective, and self-regulated literacy instruction; therefore, it is recommended that schools adopt this integrative model, teachers apply the strategies consistently, and future researchers explore its effectiveness across different text genres and educational settings.

Bibliography

Ali, Aziza M, and Abu Bakar Razali. 2019. "A Review of Studies on Cognitive and Metacognitive Reading Strategies in Teaching Reading Comprehension for ESL/EFL Learners." *English Language Teaching* 12 (6): 94–111.

Anderson, Neil J. 2012. "Metacognition: Awareness of Language Learning." In *Psychology for Language Learning: Insights from Research, Theory and Practice*, 169–87. Springer.

Avgeri, Maria. 2022. "Developing Strategic Readers in the EFL Class." *Research Papers in Language Teaching and Learning* 12 (1): 56–74.

Aziz, Musharraf, and Rafizah Rawian. 2022. "Modeling Higher Order Thinking Skills and Metacognitive Awareness in English Reading Comprehension among University Learners." In *Frontiers in Education*, 7:991015. Frontiers Media SA.

Boyd, Ryan L, Kate G Blackburn, and James W Pennebaker. 2020. "The Narrative Arc: Revealing Core Narrative Structures through Text Analysis." *Science Advances* 6 (32): eaba2196.

Creswell, John W. 2021. *A Concise Introduction to Mixed Methods Research*. SAGE publications.

Fitri, Ruqoyyah. 2017. "Metakognitif Pada Proses Belajar Anak Dalam Kajian Neurosains." *JP (Jurnal Pendidikan): Teori Dan Praktik* 2 (1): 56–64.

Flavell, John H. 1979. "Metacognition and Cognitive Monitoring: A New Area of Cognitive–Developmental Inquiry." *American Psychologist* 34 (10): 906.

Grabe, William, and Fredricka L Stoller. 2019. *Teaching and Researching Reading*. Routledge.

Harley Agustian, S M, Khairul Aswadi, Sutoyo, Chairul Bariah, and Rahmat. 2024. *Ilmu Metodologi Penelitian Kuantitatif & Kualitatif*. Pamekasan: Alifba Media.

Hasani, Aceng, and John Pahamzah. 2022. "Relationship Approach to Cognitive and Metacognitive Strategies on EFL Students' Reading Comprehension." *Eurasian Journal of Applied Linguistics* 8 (2): 16–23.

Hasni, Jusnaini. 2025. "Perencanaan Kurikulum Dan Program Pembelajaran Bahasa Inggris Yang Adaptif." *TEACHING ENGLISH IN THE DIGITAL AGE*, 31.

Koyuncu, Ilhan, and Tahsin Firat. 2020. "Investigating Reading Literacy in PISA 2018 Assessment." *International Electronic Journal of Elementary Education* 13 (2): 263–75.

Listiyanto, Sabrina Putri, and Irene Yolanita Maureen. 2025. "Penerapan Metode Pembelajaran Digital Storytelling Dalam Meningkatkan Literasi Digital Pada Materi Teks Naratif Mata Pelajaran Bahasa Inggris Siswa Kelas VIII SMP Labschool Unesa 3." *Jurnal Mahasiswa Teknologi Pendidikan* 14 (11).

Livingston, Jennifer A. 2003. "Metacognition: An Overview."

Luke, Ian, and Colin A Hardy. 2012. "Cognitive Strategies." In *Learning and Teaching in Physical Education*, 59–79. Routledge.

Mehrdad, Ali Gholami, Mohammad Reza Ahghar, and Manuchehr Ahghar. 2012. "The Effect of Teaching Cognitive and Metacognitive Strategies on EFL Students' Reading Comprehension across Proficiency Levels." *Procedia-Social and Behavioral Sciences* 46:3757–63.

Mokhtari, Kouider, and Carla A Reichard. 2002. "Assessing Students' Metacognitive Awareness of Reading Strategies." *Journal of Educational Psychology* 94 (2): 249.

Muthmainnah, Thiara Adzkia, A Aida Ariya, and Adnan Adnan. 2024. "Konsep Dasar Metakognisi Dalam Proses Pembelajaran." *JIIP-Jurnal Ilmiah Ilmu Pendidikan* 7 (12): 13549–56.

Pammu, Abidin, Zaini Amir, and Tengku Nor Rizan Tengku Mohd Maasum. 2014. "Metacognitive Reading Strategies of Less Proficient Tertiary Learners: A Case Study of EFL Learners at a Public University in Makassar, Indonesia." *Procedia-Social and Behavioral Sciences* 118:357–64.

Pertiwi, N, and Erna Iftanti. 2024. "A Conceptual Article: The Teachers' Role in Implementing Cognitive Reading Strategies to Enhance Students' Reading Comprehension." *Journal of English Language Teaching and Learning (JETLE)* 6 (1): 34–43.

Pressley, Michael, and Joel R Levin. 2012. *Cognitive Strategy Research: Educational Applications*. Springer Science & Business Media.

Semtin, Semry Anak, and Mahendran Maniam. 2015. "Reading Strategies among ESL Malaysian Secondary School Students." *International Journal of Evaluation and Research in Education* 4 (2): 54–61.

Sugiyono, S. 2013. "Educational Research Methods: Quantitative, Qualitative, and R & D Approaches." *Bandung: Alfabeta*.

Williams, Marion, and Robert Burden. 1997. *Psychology for Language Teachers*. Vol. 88. Cambridge: Cambridge university press.

Zhang, Lian, and Sirinthorn Seepho. 2013. "Metacognitive Strategy Use and Academic Reading Achievement: Insights from a Chinese Context." *Electronic Journal of Foreign Language Teaching* 10 (1).