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INTEGRATING COGNITIVE AND METACOGNITIVE READING STRATEGIES: A QUASI-EXPERIMENTAL STUDY OF THEIR COMPLEMENTARY ROLES IN NARRATIVE READING LITERACY

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Abstract: This study investigated the effect of integrated cognitive and metacognitive reading strategies on eleventh-grade students' narrative reading literacy at MAN 1 Trenggalek. The research question guiding the study was: Is there a significant difference in narrative reading literacy between students taught with integrated cognitive and metacognitive strategies and those receiving conventional instruction? A quasi-experimental pretest-posttest non-equivalent control group design was employed. Sixty eleventh-grade students were assigned to an experimental group (n = 30) that received strategy-based instruction and a control group (n = 30) that received traditional teaching. Data were collected using a 20-item multiple-choice narrative reading test and analyzed through independent samples t-test and N-Gain. Results revealed a statistically significant difference between the groups ($t = 5.090$, $df = 58$, $p = 0.000 < 0.05$), with the experimental group outperforming the control group. The experimental group's N-Gain score of 62.56% fell into the medium category, indicating meaningful improvement. These findings support the complementary roles of cognitive strategies (e.g., skimming, scanning, inferencing, summarizing) and metacognitive strategies (planning, monitoring, evaluation) in enhancing narrative reading literacy. Pedagogically, the results suggest that English teachers in Islamic senior high schools should systematically integrate both types of strategies to improve students' comprehension of narrative texts.

Keywords: *cognitive strategies; metacognitive strategies; complementary roles; narrative reading literacy; EFL reading*

INTRODUCTION

Reading literacy has emerged as a fundamental competency in the twenty-first century, serving as a gateway for learners to access knowledge, participate in global discourse, and navigate an increasingly information-rich society. Within the Indonesian educational context, the significance of reading literacy is further amplified by national assessments such as the Academic Ability Test (TKA), which extensively features narrative reading passages. As according to Parishani and Ghanbili (2025), the capacity to comprehend narratives effectively is not merely about decoding literal meanings but involves critical engagement, inferential reasoning, and reflective evaluation of textual content. However, despite these curricular expectations, empirical evidence suggests that many senior high school students continue to struggle with narrative text comprehension, particularly when required to perform higher-order reading tasks such as identifying implicit character motivations, interpreting thematic elements, and evaluating narrative structures (Harisah 2024; Salsabila, Kuntarto, & Noviyanti 2024). This process involves a series of higher-order cognitive skills, such as inferential reasoning, structural analysis, and critical evaluation.

One of the root causes of low narrative reading

literacy among Indonesian EFL learners lies in passive reading habits. This habit is formed early on, when reading is often taught as an activity of pronunciation and factual information recall, rather than as an active process of meaning construction (Septy & Utami 2024). As a result, many students are accustomed to reading texts linearly, from the first word to the last without ever pausing to question, predict, connect, or evaluate what they are reading. This approach may be sufficiently effective for short and simple texts but becomes highly inadequate when students are faced with long, complex narrative texts rich in implicit elements.

Pertiwi & Iftanti (2024) emphasize that students who habitually read passively tend to rely solely on short-term memory to recall factual details, such as character names, settings, or sequences of events without genuinely understanding cause-and-effect relationships, character development, or the moral messages intended by the author. When they are asked to answer higher-order questions such as inferences or evaluations, they often experience confusion because they do not have a complete mental map of the text. This problem is further exacerbated in examination contexts such as the TKA, where students are not only required to comprehend texts deeply but also to do so within limited time constraints. Time pressure causes students who are already accustomed to slow, passive reading to become increasingly anxious, which in turn disrupts their concentration and cognitive processing abilities (Jubaeli et al. 2024). Consequently, they tend to take shortcuts by skimming and guessing answers, which is certainly ineffective for questions that demand deep understanding.

These challenges reflect a broader failure of the education system to equip students with effective reading strategies. Students are often not trained to become active readers capable of building coherent mental representations of plot, characters, setting, theme, and point of view. Therefore, pedagogical interventions are urgently needed to shift passive reading habits toward active and strategic reading.

In response to these challenges, educational psychology and applied linguistics have proposed strategy-based instruction as a viable solution. Among the various instructional approaches, cognitive and metacognitive reading strategies have garnered substantial empirical support. Cognitive reading strategies refer to mental operations that learners employ to directly manipulate and process textual information, including techniques such as prediction, skimming, scanning, summarizing, visualizing, and inferencing (Avgeri 2022; López et al. 2023). These strategies function as "tools" that enable readers to deconstruct textual content and construct meaning systematically (Putri, Perdana, & Karani 2025). In contrast, metacognitive strategies, originally conceptualized by Flavell (1979), encompass higher-order thinking processes that regulate, monitor, and evaluate one's cognitive activities during reading. Metacognitive strategies operate through three principal phases: planning (establishing reading purposes and selecting appropriate strategies), monitoring (tracking comprehension and identifying difficulties), and evaluating (assessing the extent to which reading goals have been achieved) (Cromley 2023; El-Henawy 2025; Vaughn, Boardman, and Klingner 2024).

Recent research further underscores the importance of distinguishing text types when teaching reading strategies. Schmitz & Dannecker (2023) demonstrated that students employ different cognitive and metacognitive strategies when reading narrative versus expository texts, with narratives often processed in a more strategic and deeply oriented manner. Mengelkamp, Golke, and Appel (2025) found that reading goals (entertainment versus study) significantly affect comprehension of informative narratives, highlighting the need for strategy instruction that is sensitive to reading purposes. A meta-analysis by Peng et al. (2024) of 52 studies confirmed that no single reading strategy works best; different combinations of strategies produce different effects, strengthening the case for integrated instruction. In addition, Msaddek (2025) showed that EFL learners can transfer cognitive and metacognitive strategies across narrative and expository texts, although the frequency and flexibility of transfer vary by text type.

The theoretical distinction between cognitive and metacognitive strategies suggests that they play fundamentally different yet interconnected roles in reading comprehension. Cognitive strategies without metacognitive regulation may lack direction and adaptability, while metacognitive strategies without cognitive tools lack the operational means for execution (O'malley & Chamot 1990). This complementarity implies that the integration of both strategy types may yield optimal outcomes, particularly for complex text genres such as narratives. Empirical support for this view continues to grow, with recent studies showing that combined cognitive and metacognitive strategy instruction produces

stronger effects than single-strategy approaches (Msaddek 2025; Peng et al. 2024).

Previous studies have demonstrated the effectiveness of cognitive and metacognitive strategies, yet most of them still examined the two types of strategies separately. Pertiwi and Iftanti (2024) reported that explicit instruction of cognitive reading strategies significantly enhanced reading comprehension among Indonesian senior high school students. Msaddek (2025) found that Moroccan EFL learners were able to transfer both cognitive and metacognitive strategies across narrative and expository texts after receiving strategy training. Schmitz & Dannecker (2023) further showed that students applied different combinations of cognitive and metacognitive strategies when reading narrative versus expository texts, with narrative texts generally processed more deeply and strategically. In addition, Peng et al. (2024) concluded from a large meta-analysis that no single reading strategy is superior; rather, specific combinations of strategies produce stronger effects on comprehension.

Despite these recent contributions, several gaps remain in the literature. First, the majority of studies continue to treat cognitive and metacognitive strategies as separate constructs rather than as an integrated instructional package. Second, very few studies have been conducted in the specific context of Islamic senior high schools (Madrasah Aliyah) in Indonesia. Third, rigorous quasi-experimental evidence measuring the combined effect of both strategy types on higher-order narrative reading literacy — particularly evaluation and reflection — remains limited.

These gaps become clearer when recent relevant studies are compared directly. Schmitz and Dannecker (2023) examined both cognitive and metacognitive strategies among university students, but their design was descriptive and correlational rather than an instructional intervention, leaving the causal effect of strategy teaching untested. Pertiwi and Iftanti (2024) employed a quasi-experimental design with senior high school students in Indonesia, yet focused solely on cognitive strategies, without incorporating metacognitive instruction. Peng et al. (2024), in a meta-analysis spanning various strategy combinations among struggling readers, offered broad synthesis but not findings specific to narrative texts or to the EFL Islamic school context. Msaddek (2025) investigated both cognitive and metacognitive strategies across narrative and expository texts in a quasi-experimental design, but the focus was on strategy transfer among university students in Morocco rather than on integrated classroom instruction at the secondary level. The present study addresses these gaps simultaneously by employing a quasi-experimental design that integrates cognitive and metacognitive strategy instruction specifically within an Islamic senior high school (Madrasah Aliyah Negeri) setting, using narrative texts as the instructional focus — a combination of design, context, and instructional integration that has not, to date, been jointly examined in the existing literature.

The present study addresses these gaps by investigating the effectiveness of integrated cognitive and metacognitive reading strategy instruction on narrative reading literacy among eleventh-grade students at MAN 1 Trenggalek, a madrasah selected for its openness to pedagogical innovation. The study asks: (1) Is there a significant difference in narrative reading literacy between students taught with integrated cognitive and metacognitive strategies and those taught conventionally? and (2) To what extent do cognitive and metacognitive strategies complement each other in enhancing literal comprehension, inferential reasoning, and critical evaluation? It was hypothesized that integrated strategy instruction would produce significantly higher narrative reading literacy scores than conventional instruction.

The study contributes theoretically by clarifying how cognitive and metacognitive strategies complement each other in narrative comprehension, practically by offering teachers an empirically validated pedagogical model for Islamic senior high school settings, and methodologically by providing a replicable quasi-experimental framework for future strategy-based research — ultimately bridging the gap between theoretical advocacy for strategy integration and empirical evidence of its effectiveness in an underexplored context.

METHOD

This study used a quasi-experimental, non-equivalent control group pretest-posttest design, appropriate when intact classroom groups preclude random assignment (Cham, Lee, & Migunov, 2024; Creswell & Creswell, 2023). The population comprised 358 eleventh-grade students (12 classes) at MAN 1 Trenggalek (2025/2026). Using purposive sampling based on comparable prior English achievement (Asrulla et al., 2023), two intact classes were selected: Class XI C (n = 30) as the experimental group, receiving integrated cognitive-metacognitive strategy instruction, and Class XI F (n = 30) as the control group, receiving

conventional instruction. Both groups shared the same teacher and instructional time (10 meetings × 2 × 45 minutes).

Table 1. *Study design and instrument summary*

Component	Detail
Design	Quasi-experimental, non-equivalent control group, pretest-posttest
Sample	60 students (2 intact classes), purposive sampling
Instrument	20-item multiple-choice narrative reading literacy test
Validity	Pearson item-total correlations: 0.390–0.745 (critical r = 0.361, df = 28, α = .05)
Reliability	Cronbach's Alpha = 0.866 (strong internal consistency)
Data analysis	Normality (Kolmogorov-Smirnov, Shapiro-Wilk), homogeneity (Levene's test), independent samples *t*-test, N-Gain

The 20-item test, aligned with eleventh-grade core competencies, measured identification of explicit information, inference of implicit meaning, character analysis, evaluation of moral values, and prediction of outcomes. It was validated by two expert reviewers and piloted on a parallel class (n = 30) before use. The experimental group's intervention progressed through four stages over 10 meetings, moving from discrete cognitive strategies toward full cognitive-metacognitive integration.

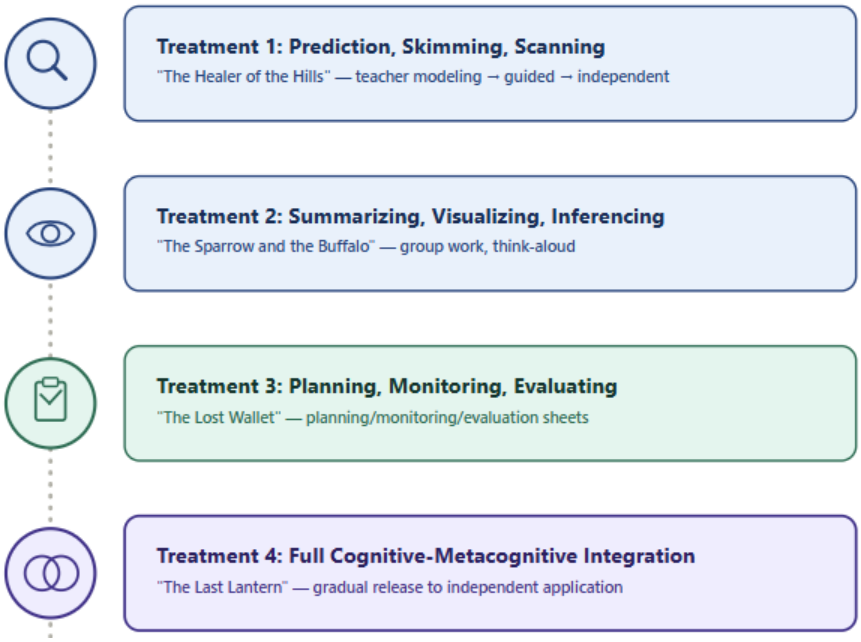


Figure 1. *Four-stage cognitive-metacognitive reading strategy intervention.*

The control group received conventional instruction (text reading, vocabulary explanation, teacher translation, comprehension questions) without explicit strategy training, using identical texts to ensure content equivalence. After confirming normality and homogeneity assumptions, group differences on posttest scores were tested using an independent samples *t*-test (α = 0.05) (Waruwu et al., 2025; Sihotang, 2023), and within-group improvement was quantified using Normalized Gain (N-Gain), interpreted per Widiana et al. (2024) as high (≥ 0.70), medium (0.30–0.69), or low (< 0.30).

RESULTS AND DISCUSSION

Descriptive statistics

These descriptive findings suggest that the complementary roles of cognitive and metacognitive strategies, where cognitive strategies provided direct text processing tools and metacognitive strategies offered regulatory control contributed to more substantial literacy gains compared to conventional instruction. The results are presented in the following Table 2.

Table 2. *Descriptive statistics of pretest and posttest*

Group	N	Minimum	Maximum	Mean	Std. Deviation
Pretest Experimental	30	25	60	45.00	9.56
Posttest Experimental	30	60	100	80.17	12.14
Pretest Control	30	30	70	46.00	10.78
Posttest Control	30	55	80	66.87	7.58

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Table 2 provides an overview of the descriptive statistics regarding pretest and posttest results for both the experimental group and the control group. The pretest results reveal that the initial narrative reading literacy levels of the two groups were quite similar. The experimental group, with 30 participants, recorded an average pretest score of 45.00 (SD = 9.56), while the control group, also comprising 30 participants, recorded an average pretest score of 46.00 (SD = 10.78). This closeness in initial scores indicates that both groups were essentially equivalent before the intervention took place.

After the treatment, both groups showed enhancements in their posttest scores. Nevertheless, the experimental group, which received training that included cognitive and metacognitive reading techniques, exhibited much greater advancement. The average posttest score for the experimental group rose to 80.17 (SD = 12.14), in contrast to the control group's mean posttest score of 66.87 (SD = 7.58). The standard deviation of posttest scores for the experimental group (12.14) was greater than that of the control group (7.58), implying that the instruction on cognitive and metacognitive strategies positively influenced a diverse range of student abilities, benefiting both lower and higher achievers.

Additionally, the lowest score in the experimental group increased from 25 on the pretest to 60 on the posttest, indicating that every student in the experimental group scored at or above the required passing mark. The highest score achieved was 100, suggesting that certain students exhibited complete understanding. On the other hand, the control group experienced a rise in their minimum score from 30 to merely 55, and the highest score they obtained was only 80.

Normality test

Before conducting parametric statistical tests, the standard distribution of the data was evaluated through the Kolmogorov-Smirnov and Shapiro-Wilk assessments. A distribution is deemed normal if the p-value is greater than 0.05 (Balaka, 2022).

Table 2. *Normality Test Results*

Variable	Class	Kolmogorov-Smirnov Sig.	Shapiro-Wilk Sig.	Interpretation
Pretest	Experimental	0.183	0.219	Normal
	Control	0.197	0.139	Normal
Posttest	Experimental	0.145	0.101	Normal
	Control	0.200	0.144	Normal

As illustrated in Table 2, the scores from both the pretest and posttest for each group conformed to the normality assumption. The Shapiro-Wilk test revealed significance values of 0.219 for the pretest of the experimental group, 0.101 for the posttest of the experimental group, 0.139 for the pretest of the control group, and 0.144 for the posttest of the control group. Each of these values surpassed the 0.05 cutoff, demonstrating that the data exhibited a normal distribution and were appropriate for subsequent parametric evaluation.

Homogeneity test

The homogeneity of variances between the experimental and control groups was tested using Levene's test. A distribution is considered homogeneous when the significance value exceeds 0.05 (Sihotang, 2023).

Table 3. *Homogeneity of variances test results*

Variable	Levene Statistic	Sig.	Interpretation
Pretest	1.347	0.251	Homogeneous
Posttest	0.229	0.634	Homogeneous

The outcomes displayed in Table 3 indicated that the Levene's statistic for pretest scores was calculated at 1.347, accompanied by a significance level of 0.251 ($p > 0.05$). Regarding the posttest scores, the Levene's statistic was determined to be 0.229, with a significance level of 0.634 ($p > 0.05$). These results verify that the variability among the two groups showed homogeneity for both the pretest and posttest, meeting the prerequisites necessary for conducting the independent samples t-test.

Independent Sample t-Test

After verifying the assumptions of normal distribution and equal variances, an independent samples t-test was performed to examine the final scores of both the experimental and control groups. The purpose of this analysis was to assess if the difference noted between the two groups was statistically significant, thus demonstrating the success of the cognitive and metacognitive reading strategy intervention.

Table 4. *Independent samples t-test results (posttest scores)*

Variance Assumption	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	5.090	58	.000	13.300	2.613
Equal variances not assumed	5.090	48.621	.000	13.300	2.613

The result showed a statistically significant difference between the experimental and control groups, t (58) = 5.090, p = 0.000 < 0.05. The mean difference of 13.30 points indicated that students who received integrated cognitive and metacognitive strategy instruction outperformed those who received conventional instruction. To determine the magnitude of the effect, Cohen's d was calculated. The effect size was d = 1.31, which is considered a large effect according to Cohen's benchmarks.

Given that the significance value (0.000) is lower than the alpha threshold (0.05), the null hypothesis (H_0) is dismissed, and the alternative hypothesis (H_1) is accepted. This indicates that the use of cognitive and metacognitive reading strategies has a statistically significant positive effect on students' narrative reading literacy compared to conventional instruction.

Normalized gain (N-Gain) analysis

Although the independent samples t-test validated a notable discrepancy between the groups, an N-Gain analysis was performed to evaluate the extent of progress from the pretest to the posttest within each group. The N-Gain score indicates the fraction of potential enhancement that students actually accomplished (Widiana et al. 2024).

Table 5. *N-Gain Score Descriptive Statistics*

Class	Mean N-Gain (%)	Classification
Experimental (PjBL)	62.56	Medium
Control (Conventional)	36.80	Low-Medium

The results showed that the experimental group achieved a mean N-Gain score of 62.56% (medium category). In contrast, the control group achieved a mean N-Gain score of only 36.80% (low to medium category). The substantially higher N-Gain score in the experimental group provides additional evidence that the complementary integration of cognitive and metacognitive reading strategies produced meaningful improvements in narrative reading literacy that were not achieved through conventional instruction alone. These findings provide empirical evidence that integrating cognitive and metacognitive reading strategies is more effective than conventional instruction for enhancing narrative reading literacy.

The significant difference in narrative reading literacy between the experimental and control groups

The first research question asked whether there was a significant difference in narrative reading literacy between students who received integrated cognitive and metacognitive strategy instruction and those who received conventional instruction. The results clearly support an affirmative answer. The independent samples t-test on the posttest scores yielded $t(58) = 5.090$, $p = 0.000$, with a large effect size (Cohen's $d = 1.31$). In addition, the experimental group obtained a higher N-Gain score (62.56%, medium category) than the control group (36.80%, medium category). These statistical findings indicate that the integrated strategy instruction produced a substantially greater improvement in students' overall narrative reading literacy.

These results are consistent with recent research showing that explicit strategy instruction can enhance reading performance. Studies on language learning strategies have repeatedly demonstrated positive associations between strategy use and academic achievement (Nadif 2025). In particular, metacognitive strategies have been found to be among the most frequently and effectively used by successful EFL learners. The present findings extend this body of work by showing that a carefully sequenced combination of cognitive and metacognitive strategies can produce significant gains even in the specific context of narrative reading literacy among Indonesian Madrasah Aliyah students (Peng et al. 2024; Pertiwi & Iftanti 2024).

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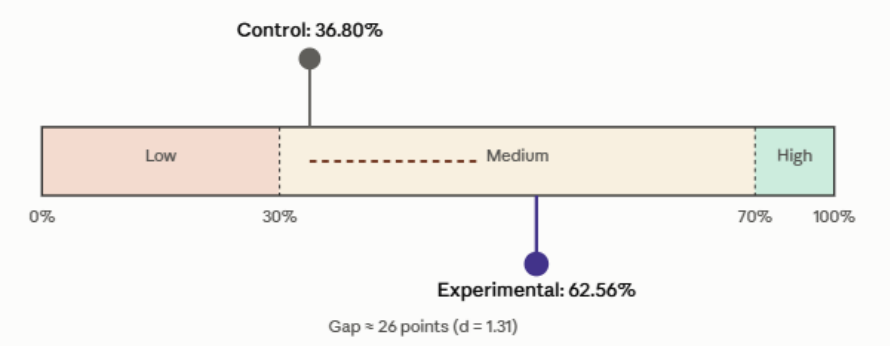


Figure 2. *N-Gain scores plotted against the low/medium/high category zones, showing exactly where each group falls within the 0–100% scale*

It should be noted, however, that alternative explanations cannot be entirely ruled out. The Hawthorne effect may have contributed to the experimental group's higher engagement, as students received a novel and more structured form of instruction. Although the same teacher taught both groups, subtle differences in delivery or enthusiasm remain possible. Moreover, the experimental group engaged in more guided and repeated reading practice, which may have independently supported improvement. These possibilities suggest that the observed difference, while statistically robust, should be interpreted with appropriate caution (Cham et al. 2024).

The complementary roles of cognitive and metacognitive strategies in enhancing dimensions of narrative reading literacy

The second research question examined the extent to which cognitive and metacognitive strategies complement each other in enhancing different dimensions of narrative reading literacy, namely literal comprehension, inferential reasoning, and critical evaluation. Because the study measured overall reading literacy scores rather than separate sub-skill scores, the discussion of complementarity is necessarily inferential and is grounded in the design of the intervention as well as the overall pattern of results.

These results support the theoretical framework that cognitive and metacognitive strategies play complementary rather than competing roles in narrative reading skills (Schmitz & Dannecker 2023). Cognitive strategies; including skimming, scanning, summarizing, visualizing, and inferencing enable readers to directly manipulate textual information and construct meaning from narrative elements such as plot, characters, conflict, and resolution (Avgeri 2022; López et al. 2023). Students who employed cognitive strategies were able to identify main ideas more efficiently, locate specific information without reading entire texts, and draw logical conclusions from implicit textual clues.

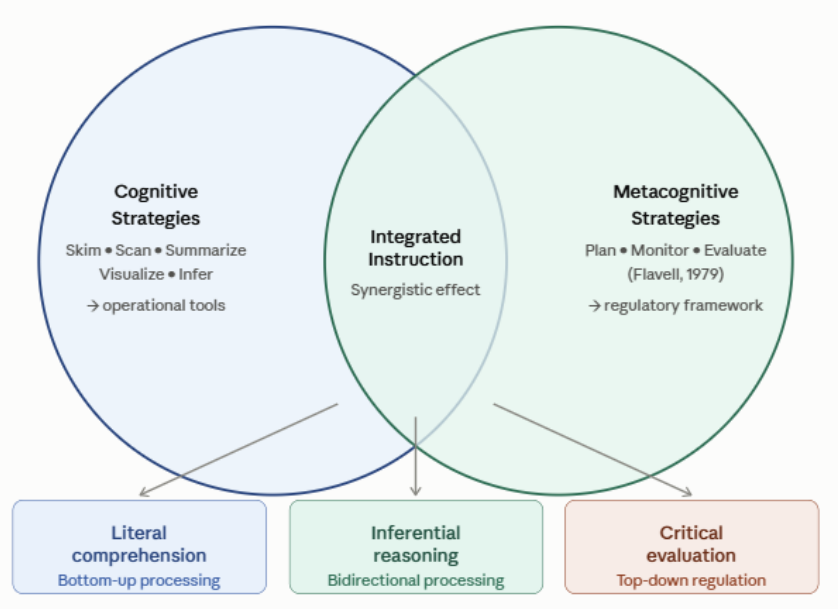


Figure 3. *Complementary roles of cognitive and metacognitive strategies in fostering narrative reading literacy*

Simultaneously, metacognitive strategies; encompassing planning, monitoring, and evaluating provided students with executive control over their reading processes. As originally conceptualized by Flavell (1979), metacognition involves the active monitoring and regulation of cognitive activities to achieve specific goals. Students who engaged in planning set reading purposes and selected appropriate strategies before reading. Those who engaged in monitoring tracked their comprehension during reading, identified difficult passages, and adjusted their approaches when misunderstandings occurred. Those who engaged in evaluating reflected on their reading outcomes, assessed which strategies were most effective, and identified areas for improvement (Mengelkamp et al. 2025).

In the planning phase, students were trained to establish reading purposes before they began reading a text. These purposes could be specific, such as "I am reading to understand the protagonist's motives," or more general, such as "I am reading to get an overall picture of the story." Additionally, students were taught to select the most appropriate strategies for their purposes. For instance, if their goal was to understand the overall plot, skimming might be more appropriate. However, if their goal was to locate specific details about the setting, scanning would be more effective. By having clear purposes and strategies before reading, students did not feel "lost" when faced with long and complex texts. They had a roadmap to guide their steps (Flavell 1979).

In the monitoring phase, students actively tracked their comprehension during the reading process. They were taught to periodically ask themselves questions such as "Do I understand this paragraph?" or "What is actually happening in this section?" When they encountered difficult or confusing passages, they did not ignore them or continue reading in the hope that things would become clearer later. Instead, they were trained to pause, reread the section, or use other strategies such as note-taking or visualizing to aid comprehension. The ability to "sense" when comprehension is breaking down and to take immediate corrective action is a hallmark of proficient readers (Cromley 2023).

In the evaluating phase, students reflected on what they had read after completing the text. They assessed whether the reading purposes they had set at the beginning were achieved or not (Vaughn et al. 2024). They also evaluated the strategies they had used: which were most helpful, which were less effective, and what they would do differently next time. This phase is crucial because it not only enhances comprehension of the current text but also builds long-term metacognitive awareness that will help students become more independent readers in the future (Flavell 1979).

The finding that the experimental group outperformed the control group across all measured outcomes aligns with the theoretical position articulated by O'Malley and Chamot (1990), who argued that cognitive strategies provide the operational tools for learning while metacognitive strategies provide the regulatory framework. Without cognitive strategies, metacognitive strategies lack the means for execution; without metacognitive strategies, cognitive strategies lack direction and adaptability. The integration of both, therefore, produces synergistic effects that exceed the sum of their individual contributions.

Recent research further supports the value of combined strategy instruction. Peng et al. (2024) concluded from a large meta-analysis of 52 studies that no single reading strategy is universally superior; different combinations produce different effects. Schmitz & Dannecker (2023) showed that students process narrative texts in a more strategic and deeply oriented manner than expository texts. Pertiwi and Iftanti (2024) found that cognitive reading strategies, implemented through explicit instruction and think-aloud exercises, significantly enhanced reading comprehension. Similarly, Msaddek (2025) demonstrated that EFL learners can transfer both cognitive and metacognitive strategies across text types when explicitly trained. The integration of both cognitive and metacognitive strategies is even more effective than metacognitive strategies alone, particularly for narrative text at the senior high school level.

The focus of this study on narrative texts warrants special consideration. Narrative texts possess unique characteristics that distinguish them from other text genres, including complex plots, dynamic character development, implicit layers of meaning, and embedded moral values (Saifulloh 2026). These characteristics require readers to engage not only in literal comprehension but also in inferential reasoning, critical evaluation, and reflective interpretation. The findings suggest that cognitive and metacognitive strategies are particularly well-suited to addressing the demands of narrative text reading literacy.

The findings of this study have several theoretical implications. They provide empirical support for the information processing theory of reading comprehension, which posits that effective

reading requires both bottom-up processing (decoding and literal comprehension) and top-down processing (using prior knowledge and strategic regulation) (Todorova 2024). Cognitive strategies primarily facilitate bottom-up processing, while metacognitive strategies facilitate top-down regulation. The integration of both, therefore, enables readers to engage in the bidirectional processing that characterizes expert reading (El-Henawy 2025).

It must be acknowledged that the present study did not obtain separate scores for literal, inferential, and evaluative items, nor did it directly measure students' strategy use during reading. Consequently, claims about the specific contribution of each strategy type to particular dimensions remain tentative. Future research employing item-level analysis or qualitative data on strategy use would strengthen the evidence for complementarity. In practical terms, the findings suggest that English teachers in Islamic senior high schools should introduce cognitive strategies first, followed by metacognitive strategies, and then provide opportunities for integrated application.

CONCLUSION

This study examined the effectiveness of integrated cognitive and metacognitive reading strategy instruction on the narrative reading literacy of eleventh-grade students at MAN 1 Trenggalek. The experimental group significantly outperformed the control group on the posttest ($t(58) = 5.090$, $p = 0.000$, Cohen's $d = 1.31$), with a substantially higher N-Gain (62.56% vs. 36.80%), indicating that the integrated instruction produced meaningful improvement. The findings suggest a complementary relationship between the two strategy types — cognitive strategies appear to support literal comprehension and initial inferential reasoning, while metacognitive strategies appear to strengthen the regulatory processes needed for deeper inference and critical evaluation — likely aided by the intervention's sequential design. However, because overall literacy scores rather than sub-skill scores were measured, and student strategy use was not directly observed, this complementarity remains inferential rather than directly demonstrated.

These conclusions are qualified by several constraints: the use of intact rather than randomly assigned classes limits causal strength; piloting with students who later formed the experimental group raises a small risk of item familiarity, despite different texts being used; validation relied on a single expert rather than a panel; and the absence of sub-skill analysis or qualitative data (e.g., think-aloud protocols) means the specific strategies students actually used cannot be confirmed. The sample was also limited to two classes in one Madrasah, restricting generalizability.

Despite these limitations, the study offers evidence that systematically sequenced cognitive-metacognitive strategy instruction can meaningfully improve narrative reading literacy in an Indonesian Islamic senior high school context. Teachers are encouraged to introduce cognitive strategies first through modeling and guided practice, then metacognitive strategies via planning and reflection tools, before integrating both on complete texts, while students are encouraged to build awareness of their own reading process through goal-setting, monitoring, and reflection. Future research should employ more rigorous assignment and validation procedures, analyze sub-skill-level effects, incorporate qualitative strategy-use data, and replicate findings across broader samples and contexts to strengthen and refine this evidence.

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