

Integrating Metacognitive Scaffolding in Qiro'ah Mukatsafah: A Mixed-Methods Exploration of Arabic Intensive Reading Comprehension in Indonesian Higher Education

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Abstract

This study investigates the integration of metacognitive scaffolding strategies within Qiro'ah Mukatsafah (intensive reading) instruction to enhance Arabic reading comprehension among Indonesian university students. While intensive reading has long been recognized as a foundational approach in Arabic language pedagogy, existing scholarship has insufficiently addressed the cognitive and metacognitive dimensions that mediate reading comprehension outcomes. Employing a sequential explanatory mixed-methods design, this research collected quantitative data from 186 undergraduate students across four Indonesian Islamic higher education institutions through pre-test and post-test instruments measuring reading comprehension and metacognitive awareness, complemented by semi-structured interviews with 24 purposively selected participants. The quantitative findings demonstrated statistically significant improvements in reading comprehension scores ($t = 7.842$, $p < .001$, Cohen's $d = 0.94$) following the metacognitive scaffolding intervention embedded within Qiro'ah Mukatsafah instruction. Qualitative data revealed three emergent themes: cognitive restructuring through textual deconstruction, self-regulated monitoring during intensive reading tasks, and socially mediated comprehension through collaborative annotation. The study contributes a theoretically grounded pedagogical framework termed Metacognitive Intensive Reading Architecture (MIRA) that reconceptualizes Qiro'ah Mukatsafah beyond mechanical decoding toward strategic, self-regulated reading engagement. Implications for Arabic language curriculum design in higher education contexts and directions for future research are discussed.

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Introduction

Reading comprehension constitutes a fundamental competence in foreign language learning because it enables learners to construct meaning, access disciplinary knowledge, and participate in academic discourse. Within the context of Arabic as a foreign language (AFL), reading ability has received increasing scholarly attention, particularly in higher education institutions where Arabic is positioned not only as a linguistic subject but also as a medium for accessing classical, religious, and contemporary academic resources. In Indonesia, Arabic language education has been historically embedded within Islamic higher education institutions, where developing students' reading proficiency remains a central pedagogical objective (Madkur, 2018; Albantani & Madkur, 2019; Ritonga et al., 2020). Among various instructional approaches, Qiro'ah Mukatsafah (intensive reading) continues to represent one of the most dominant pedagogical models because it emphasizes detailed engagement with texts through vocabulary analysis, grammatical interpretation, morphological examination, and comprehension exercises (Wahab, 2016; Al-Fauzan, 2017; Madkur, 2018).

Nevertheless, despite its longstanding implementation, intensive reading instruction has not consistently produced learners with strong independent reading comprehension abilities. Previous studies have indicated that many Indonesian university students of Arabic continue to experience difficulties in interpreting texts, identifying implicit meanings, and applying strategic reading processes, even after years of formal instruction (Muradi, 2015; Nuha, 2016; Zulhannan, 2014). This phenomenon reflects a broader challenge in foreign language education, where instructional practices often emphasize linguistic knowledge while insufficiently addressing the cognitive processes required for meaningful comprehension. As highlighted in recent reading research, successful comprehension is not merely determined by vocabulary size and grammatical competence; rather, it depends on readers' ability to actively regulate cognitive processes through strategic planning, comprehension monitoring, and reflective evaluation (Zhang, 2010; Phakiti, 2003).

The theoretical foundation of this study is derived from metacognitive theory, which conceptualizes learning as an active process involving awareness and regulation of one's own cognitive activities. Initially introduced by Flavell (1979), metacognition refers to individuals' knowledge about their cognitive processes and their ability to regulate these processes to achieve specific goals. In reading contexts, metacognitive regulation is commonly operationalized through three interconnected strategies: planning before reading, monitoring comprehension during reading, and evaluating reading outcomes after completing a task (Baker & Brown, 1984; Mokhtari & Reichard, 2002; Anderson, 2002). These strategies enable learners to recognize comprehension difficulties, select appropriate problem-solving approaches, and become more autonomous readers.

The relevance of metacognitive instruction in reading development has been demonstrated across diverse language-learning contexts. Research in English as a Foreign Language (EFL) contexts has consistently shown that learners with stronger metacognitive awareness tend to demonstrate higher reading performance because they actively employ strategies to manage comprehension processes (Sheorey & Mokhtari, 2001; Phakiti, 2003; Zhang & Wu, 2009). Furthermore, recent perspectives on self-regulated learning emphasize that effective readers are not passive recipients of textual information but active participants who continuously construct, evaluate, and revise their understanding. These findings suggest that metacognitive strategies represent a teachable dimension of reading competence rather than an innate ability.

However, the application of metacognitive principles within Arabic intensive reading pedagogy remains insufficiently explored. Existing studies on Qiro'ah Mukatsafah have primarily concentrated on instructional procedures, textbook development, vocabulary acquisition, or comparisons between different reading techniques (Effendy, 2012; Taufiqurrochman, 2015; Hanifah, 2016). Although these studies provide valuable insights into Arabic reading instruction, they tend to conceptualize reading difficulties primarily from linguistic perspectives rather than examining the cognitive mechanisms underlying comprehension. Consequently, the relationship between intensive reading practices and learners' metacognitive regulation remains theoretically and empirically underdeveloped.

This research gap becomes more significant when considering the distinctive characteristics of Arabic reading. Unlike alphabetic languages such as English, Arabic involves complex morphological structures, root-and-pattern word formation systems, contextual dependency, and a right-to-left writing orientation, which may generate unique cognitive demands for learners (Abu-

Rabia, 2001; Koda & Zehler, 2008). Therefore, findings derived predominantly from English reading contexts cannot be directly transferred to Arabic learning environments without considering linguistic and pedagogical differences. A context-sensitive investigation is required to understand how metacognitive scaffolding can support learners in navigating the specific challenges associated with Arabic texts.

Moreover, previous investigations have frequently relied on quantitative approaches that measure reading achievement outcomes while providing limited explanations regarding learners' experiences, strategic awareness, and engagement during reading activities. Mixed-methods research integrating achievement data with qualitative exploration of learner experiences remains relatively limited in Arabic language education (Wahab, 2016; Ritonga et al., 2020). Such integration is necessary because improvements in reading comprehension should not only be evaluated through test scores but also through understanding how learners develop awareness, confidence, and independence in managing reading processes.

Therefore, the present study introduces a novel perspective by integrating metacognitive scaffolding into Qiro'ah Mukatsafah instruction. Rather than positioning intensive reading merely as a teacher-controlled process of linguistic analysis, this study reconceptualizes it as a strategic learning environment that encourages learners to plan, monitor, and evaluate their comprehension activities. This integrated framework contributes theoretically by bridging Arabic reading pedagogy with cognitive and metacognitive learning theories, while also contributing practically by offering an evidence-based instructional approach for improving Arabic reading comprehension among university learners.

Accordingly, this study aims to investigate the effectiveness of integrating metacognitive scaffolding within Qiro'ah Mukatsafah instruction for improving Arabic reading comprehension among Indonesian university students. Specifically, the study seeks to (1) examine the effect of metacognitive scaffolding on learners' Arabic reading comprehension achievement, (2) explore learners' experiences and perceptions regarding the implementation of metacognitive strategies during intensive reading activities, and (3) develop a theoretical understanding of how metacognitive processes interact with intensive reading pedagogy in Arabic language learning contexts.

Method

Research Design

This study employed a sequential explanatory mixed-methods design (Creswell & Plano Clark, 2018), wherein quantitative data collection and analysis preceded qualitative data collection, with the qualitative phase designed to explain, elaborate, and contextualize quantitative findings. This design was selected for its capacity to provide both generalizable outcome data and rich interpretive understanding of the processes underlying those outcomes.

Participants and Setting

The quantitative phase involved 186 undergraduate students (127 female, 59 male; mean age = 20.4 years, SD = 1.2) enrolled in Arabic reading courses across four Indonesian Islamic higher education institutions in Java and Sumatra. Participants were distributed across experimental (n = 94) and control (n = 92) groups through cluster randomization at the class level. All participants had completed at least two semesters of Arabic language study and demonstrated intermediate reading

proficiency as measured by the standardized Arabic reading placement instrument developed by Thu'aimah (2004).

For the qualitative phase, 24 participants were purposively selected from the experimental group based on maximum variation sampling (Patton, 2015), representing diverse achievement levels (high, medium, low based on post-test performance), institutional contexts, and prior Arabic learning backgrounds.

Intervention Design: The MIRA Framework

The experimental group received 14 weeks of Qiro'ah Mukatsafah instruction embedded with metacognitive scaffolding, structured according to the MIRA framework developed for this study. The framework operationalizes metacognitive scaffolding across three phases of intensive reading:

Pre-reading metacognitive activation: Students engage in explicit goal-setting, prior knowledge inventory, text structure prediction, and reading plan articulation before engaging with the Arabic text.

During-reading metacognitive monitoring: Students employ think-aloud protocols, comprehension checkpoints, strategic annotation (including marking points of confusion, connection, and inference), and collaborative monitoring through structured peer discussion.

Post-reading metacognitive evaluation: Students complete reflective comprehension assessments, strategy effectiveness evaluations, and metacognitive journals documenting their reading processes and comprehension development.

The control group received conventional Qiro'ah Mukatsafah instruction following standard institutional practices without explicit metacognitive scaffolding components.

Instruments

Arabic Reading Comprehension Test (ARCT): A researcher-developed instrument comprising 40 items measuring literal comprehension (10 items), inferential comprehension (15 items), critical comprehension (10 items), and evaluative comprehension (5 items), validated by expert panel (CVI = 0.92) with established reliability (Cronbach's $\alpha = 0.87$).

Metacognitive Awareness of Reading Strategies Inventory—Arabic Adaptation (MARSII-AA): An adapted version of Mokhtari and Reichard's (2002) MARSII instrument, translated and culturally adapted for Arabic reading contexts, validated through confirmatory factor analysis (CFI = 0.94, RMSEA = 0.05) with established reliability (Cronbach's $\alpha = 0.91$).

Semi-structured interview protocol: Developed based on preliminary quantitative findings, comprising 12 open-ended questions exploring participants' experiences with metacognitive scaffolding during intensive reading, perceived changes in reading processes, challenges encountered, and meaning-making strategies employed.

Data Analysis

Quantitative data were analyzed using independent samples t-tests, paired samples t-tests, and ANCOVA (controlling for pre-test scores) through SPSS version 28. Effect sizes were calculated using Cohen's d. Qualitative data from interviews were analyzed through reflexive thematic analysis (Braun & Clarke, 2022), following the six-phase process of familiarization, coding, theme generation, theme review, theme definition, and report writing. Integration of quantitative and qualitative findings followed the joint display approach recommended by Creswell and Plano Clark (2018).

Ethical Considerations

Ethical approval was obtained from the institutional review boards of all participating institutions. Informed consent was secured from all participants, with assurances of confidentiality, voluntary participation, and the right to withdraw without consequence. Pseudonyms are used throughout the reporting of qualitative findings.

Results and Discussion

Results

This section presents the findings of the study in direct alignment with the three research objectives. The first part reports the effect of metacognitive scaffolding on students' Arabic reading comprehension achievement. The second part presents learners' experiences and perceptions of metacognitive strategies during intensive reading activities. The third part reports the emergent pattern showing how metacognitive processes interacted with intensive reading pedagogy in the Arabic language learning context. Quantitative findings are presented through descriptive statistics, inferential statistics, and effect sizes, whereas qualitative findings are presented through themes and illustrative excerpts from interview data.

The Effect of Metacognitive Scaffolding on Arabic Reading Comprehension Achievement

Before examining the post-intervention outcomes, baseline equivalence between the experimental and control groups was tested. Independent samples t-tests showed no statistically significant difference between the two groups in pre-test reading comprehension scores, $t(184) = 0.673$, $p = .502$, or baseline metacognitive awareness, $t(184) = 1.024$, $p = .307$. As presented in Table 1, both baseline comparisons produced non-significant results, indicating that the groups were comparable before the implementation of the intervention.

Table 1. Baseline equivalence between the experimental and control groups

Variable	Test	df	t	p	Result
Pre-test reading comprehension	Independent samples t-test	184	0.673	.502	Not significant
Baseline metacognitive awareness	Independent samples t-test	184	1.024	.307	Not significant

Note. A non-significant result indicates the absence of a statistically meaningful baseline difference between groups.

The primary analysis examined post-test reading comprehension scores while controlling for pre-test performance. The ANCOVA result indicated a statistically significant effect of the MIRA intervention on post-test reading comprehension, $F(1, 183) = 61.47$, $p < .001$, partial eta squared = .252. The experimental group obtained a higher post-test mean score ($M = 74.82$, $SD = 8.93$) than the control group ($M = 62.15$, $SD = 10.47$). These results are summarized in Table 2.

Table 2. Post-test reading comprehension outcomes by group

Group	N	Post-test M	SD	ANCOVA result	p	Partial eta squared
Experimental group	94	74.82	8.93	$F(1, 183) = 61.47$	$< .001$	.252
Control group	92	62.15	10.47			

Note. The ANCOVA controlled for pre-test reading comprehension scores. Higher scores indicate stronger reading comprehension performance.

The difference between the two post-test means was 12.67 points in favor of the experimental group. The standard deviation was slightly smaller in the experimental group than in the control group, indicating that the experimental group scores were more closely distributed around the group mean. The control group mean remained below the experimental group mean after the pre-test score was statistically controlled. Thus, the post-test comparison provides the main quantitative result for the first research objective, which focused on reading comprehension achievement.

Within-group comparisons were conducted to identify changes from pre-test to post-test in each group. The experimental group showed a statistically significant improvement in reading comprehension, $t(93) = 7.842$, $p < .001$, Cohen's $d = 0.94$. The control group also showed a statistically significant improvement, $t(91) = 2.341$, $p = .021$, Cohen's $d = 0.28$. As shown in Table 3, the magnitude of change was larger in the experimental group than in the control group.

Table 3. Within-group changes in reading comprehension

Group	df	t	p	Cohen's d	Effect magnitude
Experimental group	93	7.842	< .001	0.94	Large
Control group	91	2.341	.021	0.28	Small

Note. Paired samples t -tests were used to examine pre-to-post changes within each group.

The reading comprehension outcome was further disaggregated into literal, inferential, and critical comprehension levels. The largest gain was observed in inferential comprehension, with Cohen's $d = 1.12$. Critical comprehension also showed a large gain, with Cohen's $d = 0.98$. Literal comprehension showed a moderate gain, with Cohen's $d = 0.54$. The comparative pattern of effect sizes is displayed in Figure 1.

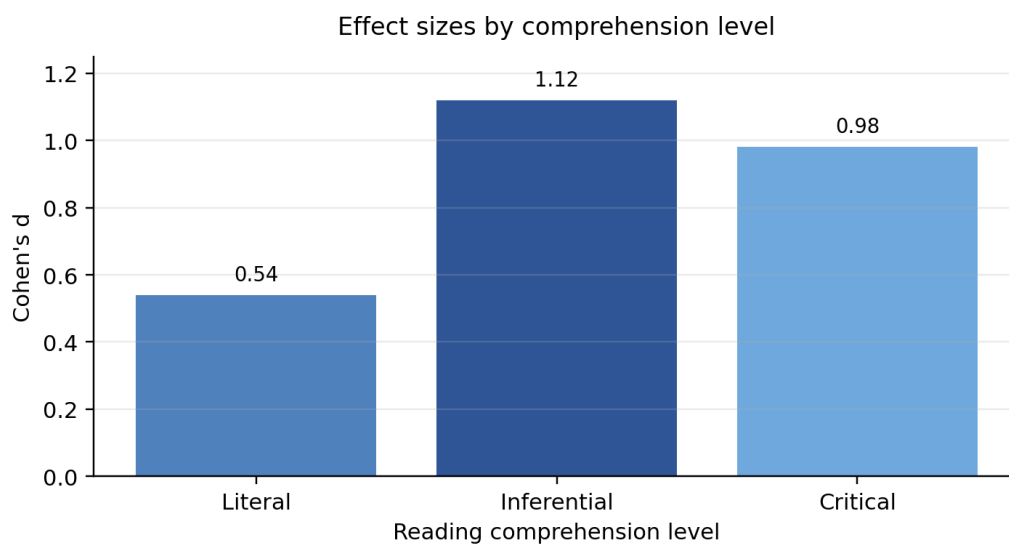


Figure 1. Effect sizes across reading comprehension levels

The second quantitative outcome concerned students' metacognitive awareness as measured by the MARSII-AA. The experimental group demonstrated a statistically significant increase in metacognitive awareness after the intervention, $t(93) = 9.216$, $p < .001$, Cohen's $d = 1.08$. The control group did not show a statistically significant change in metacognitive awareness, $t(91) = 1.187$, $p = .238$. Subscale-level findings indicated that the most notable gains in the experimental group occurred in monitoring and problem-solving strategy use.

Table 4. Within-group changes in metacognitive awareness

Group	df	t	p	Cohen's d	Result
Experimental group	93	9.216	< .001	1.08	Significant increase
Control group	91	1.187	.238	Not reported	Not significant

The metacognitive awareness result is reported as an additional learning outcome because the intervention was designed around planning, monitoring, and regulation during intensive reading. Although complete subscale means were not available in the dataset, the reported subscale pattern indicated stronger gains in monitoring and problem-solving strategy use than in other areas of metacognitive awareness. The control group result, by contrast, did not reach statistical significance. This pattern is presented here as a descriptive result of the intervention period.

Learners' Experiences and Perceptions of Metacognitive Strategies During Intensive Reading

The qualitative strand examined learners' experiences and perceptions of metacognitive strategies during Arabic reading activities. Reflexive thematic analysis generated three overarching themes: cognitive restructuring through textual deconstruction, self-regulated monitoring during intensive reading, and socially mediated comprehension through collaborative annotation. These themes were derived from repeated patterns in participants' accounts of how they approached, monitored, and discussed Arabic texts during the intervention.

Theme 1: Cognitive restructuring through textual deconstruction

The first theme concerned changes in how participants approached Arabic texts before and during reading. Participants described a shift from reading Arabic texts word by word toward a more structured approach involving previewing, prediction, topic activation, and recognition of textual organization. High- and medium-achieving participants provided particularly detailed accounts of using pre-reading metacognitive questions to organize their expectations before engaging with the text.

The theme appeared in accounts from participants who described their earlier reading practice as linear, vocabulary-centered, and dependent on immediate translation. After the intervention, these participants reported using the beginning of the reading session to identify the topic, anticipate the structure of the text, and prepare a tentative pathway for comprehension. Several participants also reported that this preparation made the reading task feel more manageable because they entered the text with a clearer sense of purpose.

"Before, I would read Arabic texts like climbing a wall, brick by brick, word by word, and often I would reach the end without seeing the whole building. Now I step back first, look at the structure, predict what kind of building it might be, and then I enter it with a map in my mind."

- Fatimah, high-achieving participant, Institution B

A similar pattern was reported by Muhammad, who described the text as becoming more familiar when he used questions about prior knowledge and text type. His account indicated that pre-reading questioning helped him establish expectations before reading.

"The metacognitive questions before reading changed everything. When I ask myself 'what do I already know about this topic?' and 'what kind of text is this?', suddenly the text is not a stranger anymore. I have expectations, and reading becomes a conversation between what I expect and what the text actually says."

- Muhammad, medium-achieving participant, Institution A

Theme 2: Self-regulated monitoring during intensive reading

The second theme concerned participants' reported development of real-time comprehension monitoring. Participants described becoming more aware of comprehension breakdowns while reading. Rather than continuing to read without identifying the source of difficulty, they reported marking confusing sections, pausing after paragraphs, asking diagnostic questions, and revisiting difficult textual segments.

"I used to just keep reading even when I did not understand. I thought that was normal, that Arabic is just difficult and you accept what you can get. But the monitoring strategies taught me that not understanding is a signal, not a permanent condition. When I mark a point of confusion and ask myself 'what exactly is confusing here?' sometimes that question alone clarifies things."

- Ahmad, low-achieving participant, Institution C

Across interviews, monitoring was reported in several forms. Some participants underlined unclear phrases, some paused to check whether they could summarize a paragraph, and others identified whether difficulty came from vocabulary, grammar, sentence structure, or limited background knowledge. These recurring accounts were grouped under self-regulated monitoring because they involved active observation of comprehension during reading.

The monitoring theme was also visible in participants' descriptions of reading pace. Several students stated that they no longer treated speed as the only indicator of successful reading. Instead, they reported stopping at selected points in the text to check whether the meaning was coherent. This reported practice included rereading a sentence, comparing a sentence with the previous paragraph, writing a short note in the margin, or asking a peer to explain a difficult construction during collaborative activities.

Theme 3: Socially mediated comprehension through collaborative annotation

The third theme concerned the role of collaborative annotation and peer interaction. Participants reported that peer annotation allowed them to compare interpretations, explain their comprehension process, and identify alternative ways of approaching Arabic textual structures. High-achieving participants tended to emphasize explaining strategies to peers, while lower-achieving participants more often emphasized receiving clarification from peers.

"When my partner marks a sentence as confusing and I found it clear, I have to explain my comprehension process, and in explaining, I understand my own strategies better. When I mark something as confusing and my partner explains their understanding, I learn not just the meaning but a new way of approaching similar structures."

- Khadijah, high-achieving participant, Institution D

Table 5 summarizes the three qualitative themes, their main categories, and shortened illustrative evidence from participant interviews. The table preserves the connection between themes and participant excerpts.

Across the qualitative dataset, students did not describe collaboration only as answer sharing. Instead, they frequently referred to the process of making reading decisions visible to peers. For example, participants described explaining why a phrase was confusing, why a paragraph was interpreted in a certain way, or why a particular textual clue helped them infer meaning. These descriptions were coded as collaborative annotation when they involved shared marks, peer explanation, or comparison of comprehension strategies.

Table 5. Qualitative themes, categories, and illustrative evidence

Theme		Main category	Illustrative evidence
Cognitive through deconstruction	restructuring textual	Previewing, predicting, and recognizing text structure	Now I step back first, look at the structure, predict what kind of building it might be...
Self-regulated during intensive reading	monitoring	Identifying confusion and using self-questioning	Not understanding is a signal, not a permanent condition.
Socially mediated comprehension through collaborative annotation		Explaining and comparing comprehension strategies with peers	I learn not just the meaning but a new way of approaching similar structures.

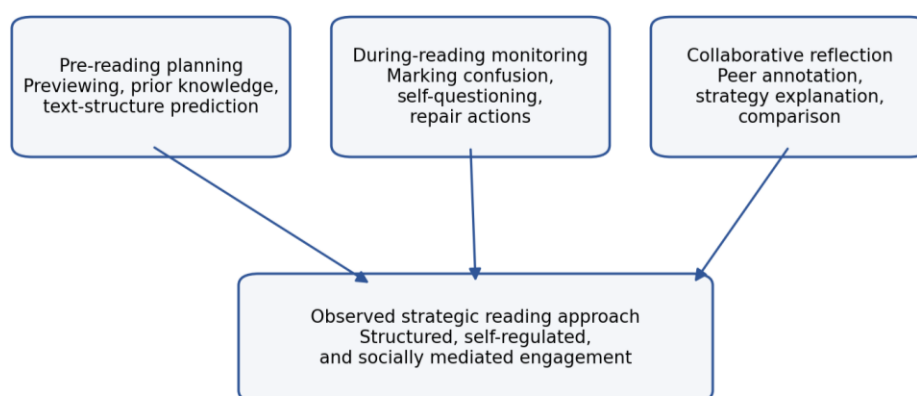
Note. Illustrative evidence is shortened for table presentation; full excerpts are provided in the narrative text.

The Emergent Interaction Between Metacognitive Processes and Qiro'ah Mukatsafah Pedagogy

The third objective concerned the development of a theoretical understanding of how metacognitive processes interacted with intensive reading pedagogy in Arabic language learning contexts. The findings showed an emergent pattern consisting of three recurring components: pre-reading planning, during-reading monitoring, and collaborative post-reading reflection. These components appeared across the quantitative and qualitative strands as connected elements of the MIRA implementation.

The first component, pre-reading planning, was reflected in students' reports of previewing the text, activating prior knowledge, asking metacognitive questions, and predicting text structure. The second component, during-reading monitoring, was reflected in participants' descriptions of identifying comprehension breakdowns and using repair actions. The third component, collaborative reflection, was reflected in peer annotation practices through which students explained, compared, and revised their comprehension strategies. Figure 2 displays this emergent pattern as a descriptive model of the findings.

The emergent pattern was constructed from the convergence of reported learning behaviors and measured outcomes. Planning was most visible in participants' descriptions of how they entered the text. Monitoring was most visible in accounts of how students responded to confusion during reading. Collaborative reflection was most visible in accounts of how learners discussed marked segments and compared comprehension strategies. These components were retained as the descriptive structure for the third research objective.

**Figure 2.** Emergent interaction between metacognitive processes and Qiro'ah Mukatsafah pedagogy

A joint display was prepared to align the quantitative and qualitative findings with the three research objectives. As shown in Table 6, the quantitative strand reported higher post-test reading comprehension scores in the experimental group, significant within-group improvement in reading comprehension, and significant growth in metacognitive awareness. The qualitative strand reported learners' experiences of textual deconstruction, self-regulated monitoring, and collaborative annotation. The integrated display shows how the findings correspond to the study objectives.

Table 6. Joint display of findings aligned with the research objectives

Research objective	Quantitative finding	Qualitative finding	Result alignment
Objective 1: Effect on Arabic reading comprehension achievement	Experimental group: $M = 74.82$, $SD = 8.93$; control group: $M = 62.15$, $SD = 10.47$; $F(1, 183) = 61.47$, $p < .001$	Participants described movement from word-by-word reading toward structured engagement with texts.	The findings report improved achievement and describe the reading behaviors associated with the intervention.
Objective 2: Learners' experiences and perceptions	Metacognitive awareness increased in the experimental group, $t(93) = 9.216$, $p < .001$, $d = 1.08$.	Three themes were generated: textual deconstruction, self-regulated monitoring, and collaborative annotation.	The findings report how students experienced and perceived metacognitive strategies during intensive reading.
Objective 3: Interaction between metacognition and intensive reading pedagogy	The strongest comprehension-level effects appeared in inferential comprehension ($d = 1.12$) and critical comprehension ($d = 0.98$).	The emergent pattern consisted of planning, monitoring, and collaborative reflection.	The findings identify a descriptive pattern of interaction between metacognitive processes and Qiro'ah Mukatsafah pedagogy.

Taken together, the results indicate that the experimental group achieved higher post-test reading comprehension scores than the control group after controlling for pre-test scores. The experimental group also demonstrated larger within-group gains in reading comprehension and metacognitive awareness. Qualitative findings showed that learners experienced metacognitive strategies through textual deconstruction, self-regulated monitoring, and collaborative annotation. The emergent pattern across the data identified planning, monitoring, and collaborative reflection as the principal components through which metacognitive processes interacted with Qiro'ah Mukatsafah instruction.

Discussion

The findings of this study demonstrate that integrating metacognitive scaffolding into Qiro'ah Mukatsafah substantially improved students' Arabic reading comprehension and metacognitive awareness. The experimental group outperformed the control group after controlling for pre-test scores, with particularly strong gains in inferential and critical comprehension. This pattern suggests that the MIRA framework did not merely support students in decoding vocabulary and grammatical structures, but also helped them engage in higher-order meaning construction. The qualitative findings further illuminate this quantitative improvement: students shifted from linear, word-by-

word translation toward more strategic practices involving pre-reading planning, during-reading monitoring, and post-reading reflection. In this sense, the intervention strengthened both the cognitive and regulatory dimensions of Arabic reading, confirming that comprehension in Qiro'ah Mukatsafah depends not only on linguistic competence but also on learners' ability to regulate how they approach, monitor, and evaluate textual meaning.

These findings are consistent with recent global research showing that metacognitive reading strategy instruction enhances reading comprehension, strategic awareness, and learner autonomy in second and foreign language contexts. For instance, Yapp et al. (2021) found through meta-analysis that reading strategy interventions have a positive effect on L2 reading comprehension, especially when strategy instruction is explicit and sustained. Similarly, Berenji (2021) reported that metacognitive scaffolding embedded in problem-based learning improved EFL learners' comprehension ability, while Khurram (2023) showed that university students became more aware of how to use reading strategies after metacognitive instruction. More recently, Asfaw et al. (2025) found that metacognitive reading strategy instruction improved reading comprehension, strategy awareness, and motivation in second language learning. The present study extends these findings to Arabic intensive reading, a domain that remains less frequently examined than English-based reading contexts. Notably, the stronger effects on inferential and critical comprehension indicate that metacognitive scaffolding may be especially valuable when learners must move beyond literal extraction toward interpretation, evaluation, and synthesis.

The results also resonate with studies on Arabic and multilingual reading. Razkane et al. (2023), for example, found that learners' metacognitive strategy use differs across Arabic and English reading contexts, suggesting that language-specific textual features shape how students plan and monitor comprehension. In the present study, Arabic morphology, syntactic density, and contextual dependency appeared to make monitoring strategies particularly important. This may explain why students reported that marking confusion, rereading selected segments, and identifying the source of comprehension breakdown helped them manage difficult Arabic texts more effectively. In contrast to studies that treat reading strategy use as a general transferable skill, this study shows that metacognitive scaffolding must be adapted to the linguistic and pedagogical demands of Arabic intensive reading. Thus, the MIRA framework strengthens metacognitive theory by demonstrating how planning, monitoring, and evaluation operate within a language-specific instructional culture.

In the Indonesian context, the findings align with recent scholarship emphasizing the need to move Arabic instruction beyond grammar-translation routines and teacher-dominated textual analysis. Kamal (2025) argues that Arabic teaching in Indonesian Islamic higher education is often constrained by conventional curricula and limited communicative engagement. Similarly, Machmudah et al. (2025) found that smart learning environments can make Arabic reading instruction more active, competitive, and meaningful for prospective teachers. The present study supports these local findings by showing that Qiro'ah Mukatsafah can become more learner-centered when students are guided to regulate their own comprehension. Research by Muhammad Sufian and colleagues further reinforces the importance of contextual, culturally responsive, and media-supported Arabic pedagogy. Koderi, Sufian, and Erlina (2023) demonstrated the effectiveness of Lampung local wisdom film in Arabic communication learning, while Sufian et al. (2023) showed that Arabic song media can improve listening and vocabulary outcomes. Although these studies focus on different language skills, they share a similar pedagogical principle: Arabic learning becomes more

effective when instructional design connects linguistic input with meaningful, engaging, and culturally familiar learning experiences.

The present findings also correspond with Erlina, Koderi, and Sufian's (2025) work on gender-responsive Qira'ah learning modules, which emphasizes inclusivity and equality in Islamic higher education. This connection is important because metacognitive scaffolding can reduce dependence on teacher authority and provide all learners with clearer procedures for entering difficult texts. In the present study, collaborative annotation allowed students to externalize confusion, compare interpretations, and learn from peers' reasoning processes. This finding is consistent with Strauß and Rummel's (2021) argument that structured prompts can regulate participation in collaborative learning, and with Uçak and Kartal's (2023) evidence that online strategy training can scaffold reading comprehension. It also connects with emerging work on digital language learning across life stages, which suggests that learners increasingly develop language practices through flexible, self-directed, and socially mediated digital environments. Therefore, although this study was not designed as a digital learning intervention, its emphasis on annotation, reflection, and peer-supported monitoring offers a strong foundation for future digitally mediated Qira'ah instruction.

Theoretically, pedagogically, and in terms of policy, the findings offer several implications. Theoretically, the study extends metacognitive reading theory by situating planning, monitoring, and evaluation within Qira'ah Mukatsafah, thereby showing that intensive reading can be reconceptualized as a self-regulated and socially mediated process rather than a purely linguistic decoding activity. Pedagogically, Arabic lecturers should incorporate explicit metacognitive prompts, guided annotation, reflective journals, peer explanation, and comprehension checkpoints to improve student engagement, confidence, emotional security, and independent reading habits. These strategies may also support media literacy when transferred to digital reading environments, because students learn to question meaning, verify interpretation, and monitor their own responses to texts. From a policy perspective, Islamic higher education institutions should integrate metacognitive reading pedagogy into Arabic curriculum standards, lecturer training, and digital learning policies. Given the growing influence of online interaction on learning behavior, identity formation, and psychological well-being, institutions should promote responsible digital reading practices, inclusive learning environments, and mental-health-sensitive academic support, especially for students who experience anxiety, low confidence, or repeated failure in foreign language reading.

The novelty of this study lies in its integration of metacognitive scaffolding with Qira'ah Mukatsafah through the MIRA framework. While previous studies have examined Arabic reading instruction, media-based Arabic learning, or metacognitive strategies in EFL contexts, few have empirically combined achievement data, metacognitive awareness measurement, and qualitative learner experience within Arabic intensive reading in Indonesian Islamic higher education. Methodologically, the mixed-methods design provides stronger explanatory value because the qualitative themes clarify how and why the quantitative gains occurred. Conceptually, the study contributes a more nuanced model of Arabic reading pedagogy in which textual deconstruction, self-regulated monitoring, and collaborative annotation function as interconnected mechanisms for developing inferential and critical comprehension.

Nevertheless, several limitations should be acknowledged. The study was conducted over a 14-week intervention period and involved students from selected Islamic higher education institutions in Java and Sumatra; therefore, the findings may not fully represent Arabic learners in

other regions, institutional types, or proficiency levels. The study also relied on a researcher-developed Arabic Reading Comprehension Test and an adapted MARS instrument, which, although validated, may still require further cross-contextual validation. In addition, the study did not directly examine mediating variables such as motivation, reading anxiety, gender, digital literacy, prior pesantren experience, or first-language literacy competence. Future research should employ longitudinal designs, include more diverse Arabic learning populations, test the MIRA framework in digital annotation platforms, and examine how metacognitive scaffolding interacts with gender-responsive pedagogy, emotional well-being, and online reading behavior. Further studies may also compare printed, digital, and AI-assisted Qiro'ah environments to determine how metacognitive regulation develops across different reading ecologies.

Conclusion

This study examined the effectiveness of integrating metacognitive scaffolding into Qiro'ah Mukatsafah instruction to enhance Arabic reading comprehension among Indonesian university students. Specifically, it investigated the intervention's effect on reading comprehension achievement, explored learners' experiences in using metacognitive strategies, and developed an interpretive understanding of how metacognitive processes interact with intensive Arabic reading pedagogy. The findings demonstrate that students who participated in the MIRA-based intervention achieved higher post-test reading comprehension scores than those in the control group, with particularly strong gains in inferential and critical comprehension. The experimental group also showed substantial improvement in metacognitive awareness, indicating that explicit planning, monitoring, and evaluative strategies supported more strategic engagement with Arabic texts. Qualitative findings further revealed that learners experienced meaningful shifts from word-by-word decoding toward textual deconstruction, self-regulated monitoring, and collaborative annotation. Together, these results confirm that metacognitive scaffolding can strengthen both the cognitive and strategic dimensions of Arabic intensive reading.

Theoretically, this study contributes to Arabic language pedagogy by reconceptualizing Qiro'ah Mukatsafah not merely as a linguistic decoding practice, but as a structured environment for cultivating strategic, reflective, and self-regulated readers. Practically, the findings suggest that Arabic reading instruction in higher education should incorporate explicit metacognitive prompts, guided annotation, comprehension monitoring, and peer-supported reflection to help learners manage complex Arabic texts more independently. Nevertheless, the study is limited by its 14-week intervention period, its focus on Indonesian Islamic higher education institutions, and its lack of investigation into possible mediating variables such as motivation, prior reading habits, and first-language literacy competence. Future studies should employ longitudinal designs, involve more diverse Arabic learning populations, examine transfer effects across broader language skills, and explore technology-enhanced applications of the MIRA framework through digital annotation and adaptive scaffolding tools. By foregrounding the interaction between metacognitive regulation and intensive reading pedagogy, this study offers a promising foundation for advancing more reflective, learner-centered, and cognitively responsive models of Arabic reading instruction.

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