

Integrating Structured Reflection into Process Writing: Enhancing Metacognitive Engagement and Writing Performance in Collaborative and Individual ESL Contexts

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This study investigates how structured reflection embedded within process-oriented writing improves ESL learners' writing quality and metacognitive engagement in both collaborative and individual contexts. Drawing upon Murray's Process Writing Model and Moon's Reflective Thinking Model, a mixed-methods study involving 60 Malaysian undergraduates revealed that collaborative learners consistently outperformed their individual peers in writing traits and reflective depth. CEFR-aligned assessments and thematic analysis of journals and surveys underscored that structured reflection heightened writing awareness, purposeful revision, and metacognitive growth. Collaborative settings further amplified dialogic reflection through peer interaction. The findings support embedding structured reflection within the process writing cycle to enhance ESL writing outcomes and recommend its pedagogical adoption.

Keywords: Structured reflection, process writing, metacognitive engagement, collaborative writing, ESL pedagogy

INTRODUCTION

Writing proficiency is widely recognized as fundamental to academic achievement, functioning not only as a tool for assessment but also as a means for developing critical thinking, constructing knowledge, and engaging in scholarly discourse. However, conventional writing instruction in many ESL contexts has often emphasized the final written product, with insufficient attention given to the cognitive and metacognitive processes that underlie effective writing (Murray, 1980). Simultaneously, reflective practice has emerged as a valuable pedagogical approach that fosters self-regulation and deeper learning. It encourages learners to actively evaluate their thought processes, decisions, and strategies during learning tasks (Moon, 2004). Despite their individual pedagogical merit, there remains limited research on the combined application of process-oriented writing and structured reflection.

This study addresses that gap by integrating Murray's Process Writing Model, which supports recursive writing development through drafting and revising, with Moon's Reflective Thinking Framework, which scaffolds reflective depth through progressive levels of metacognitive engagement. The study investigates how this integrated approach influences ESL learners' writing quality and reflective awareness in two instructional modes—collaborative and individual writing. By examining these dual contexts, the study seeks to offer practical insights into how structured reflection can be used to enhance both writing performance and learner autonomy in diverse ESL settings.

Theoretical Framework

Murray's Process Writing model (1980)

Murray's Process Writing model, as illustrated below in Figure, is considered an ideal writing framework for this particular study.

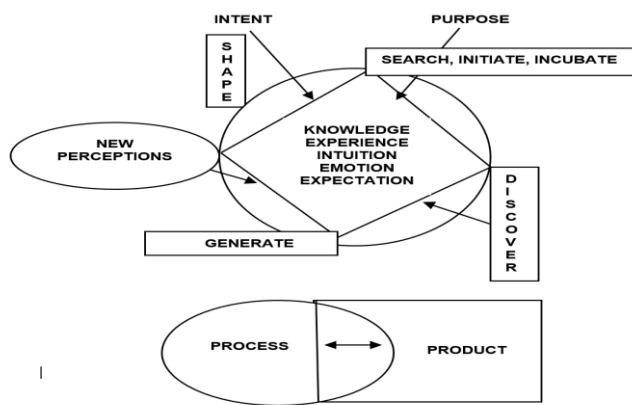


Figure 1: Murray's (1980) Process Writing Model

Murray (1980) conceptualizes writing as a recursive, non-linear process involving discovery, shaping, and continuous revision. Central to his model is the idea that writers cycle through stages—such as goal-setting, idea generation, drafting, and revising—while engaging in ongoing inner reflection. A distinctive element is the “incubation period,” during which writers pause to process and refine their ideas, becoming receptive to new insights.

This reflective component is integral to the model, as it encourages writers to assess their evolving thoughts and align their writing with communicative goals. Such metacognitive engagement not only fosters deeper learning but also supports more coherent and purposeful writing. The model's flexibility allows for entry at different stages, accommodating learners' varied backgrounds and experiences. In the present study, Murray's model is paired with Moon's Reflective Thinking Framework to operationalize and scaffold this reflective dimension more explicitly, prompting writers to become metacognitively aware and actively engaged at each stage of the writing process.

Moon's (2004) Reflective Practice Model

As shown in Table 1, Moon's (2004) model offers a developmental continuum that guides learners from basic descriptive accounts to critical, self-aware reflection. Rather than presenting rigid stages, it describes reflection as a progression in depth and complexity—moving from surface-level recounting to dialogic and critical engagement with one's experiences and learning processes.

Table 1: Moon's Reflective Thinking Model (2004) and its key levels

Level	Description	Example
1. Descriptive Writing	Non-reflective. A factual recount of events or tasks with no analysis or self-awareness.	“I wrote an essay on climate change. I included three paragraphs and a conclusion.”
2. Descriptive Reflection	Some personal insight. Basic interpretation of experience or feelings, but minimal critical engagement or broader connections.	“I felt more confident writing this essay than the last one. I tried to use more connectors.”
3. Dialogic Reflection	Reflective dialogue with self or others. Exploration of multiple perspectives, questioning, and interpretation of meaning.	“I considered using more evidence, but I wasn't sure if it would distract from my main point.”
4. Critical Reflection	Deep analysis. Challenges assumptions, considers wider implications, and connects learning to future actions or broader contexts.	“I now realize I often write from a personal bias. I need to rethink how I structure arguments for clarity.”

This model supports metacognitive growth by encouraging learners to evaluate their thoughts, emotions, and decisions, thereby fostering self-regulation. It is particularly effective in writing pedagogy, where structured prompts and reflective journals can scaffold learners' awareness of their writing strengths, challenges, and strategies.

Its adaptability makes it suitable across various educational contexts, and when combined with process-oriented writing, it provides a practical framework for cultivating deeper reflective engagement. In this study, Moon's model is used to structure reflection at each stage of the writing process, thereby enhancing learners' metacognitive involvement and facilitating more purposeful revision.

While prior studies have independently validated the benefits of process writing and reflective practice, few have examined how these models function in tandem—particularly across different instructional contexts such as collaborative versus individual writing. Collaborative writing fosters shared cognition and dialogic interaction, while individual writing supports introspection and learner autonomy. Understanding how structured reflection operates within these modes can reveal critical pedagogical mechanisms influencing metacognitive engagement and writing development.

This study addresses that gap by integrating Murray's Process Writing Model with Moon's Reflective Thinking Framework to systematically scaffold reflection across prewriting, drafting, and revising stages. By comparing collaborative and individual applications, the study aims to uncover how reflective scaffolding interacts with learning mode to shape ESL learners' writing quality and metacognitive growth. The findings will inform instructional strategies that embed reflection meaningfully within writing pedagogy to support deeper learning and more effective revision practices.

Related Studies on Process Writing and Writing Development

Existing research consistently supports the value of process-oriented writing, collaborative composition, and reflective practices in ESL contexts. Murray's (1980) emphasis on recursive writing stages has been reaffirmed in recent studies (e.g., Zhang, 2024; Harshalatha & Sreenivasulu, 2024), which highlight how process writing enhances coherence, idea development, and revision awareness. These studies also stress the importance of moving learners beyond a linear view of writing and fostering metacognitive strategies like reflection to support deeper engagement with text.

Similarly, collaborative writing has gained recognition for its cognitive and motivational benefits. Syamdianita & Hati (2025) and Aldossar (2025) showed that peer interaction boosts content development and cohesion, though limitations such as uneven participation or short-lived grammatical gains persist. Özdemir (2024) and Pham (2023) further reveal that collaborative writing improves fluency and audience awareness but does not consistently develop higher-order thinking unless supported by explicit reflection or feedback mechanisms.

From a metacognitive perspective, Sun et al. (2024) found that learners with stronger reflective engagement exhibited greater writing improvements, reinforcing calls for embedding reflection into writing instruction. Yet, while studies like Harshalatha & Sreenivasulu (2024) and Pham (2023) acknowledge reflection's potential, they often rely on informal or unstructured approaches, missing opportunities to scaffold reflection systematically through established frameworks.

Critically, most of these studies treat process writing and reflection as separate strands, or explore collaboration without structured metacognitive scaffolds. Moreover, the interaction between writing mode (collaborative vs. individual) and reflection depth remains underexplored. This study addresses these gaps by integrating Moon's Reflective Thinking Model into Murray's Process Writing cycle and systematically embedding reflective prompts at key writing stages. It also compares collaborative and individual settings, offering novel insights into how social and individual cognitive processes shape reflective engagement and writing outcomes in ESL learning environments.

Related Studies on Reflective Practice in Writing

Recent scholarship has emphasized the critical role of **structured reflection** in enhancing metacognitive engagement and writing development. Moon's (2004) Reflective Thinking Model—central to this study—outlines a continuum from descriptive to critical reflection, encouraging learners to evaluate their thinking, writing choices, and learning outcomes more deeply.

However, implementing reflection effectively remains a challenge. Chan and Lee (2021) identified systemic barriers across learners, educators, and institutions that often reduce reflective practices to superficial exercises. They argued for explicit scaffolding, structured prompts, and reflection literacy training—calls echoed in Sudirman et al.'s (2024) review, which confirmed that structured reflection supports metacognition, self-regulation, and academic achievement when properly embedded in disciplinary writing tasks.

Empirical studies reinforce this. Syaadia (2021) found that skilled writers used reflection for deep revision, while less proficient learners required more guidance to move beyond surface editing. Similarly, Al-Rashidi and Aberash (2024) and Maziahtusima (2023) linked reflection to broader learner outcomes, including resilience, motivation, and self-efficacy—highlighting its cognitive and affective value in language education.

Wang & Taylor (2025) further showed that structured reflection across writing stages improves content development and critical language awareness. Yet, like others, they did not explore how reflection functions differently across collaborative and individual contexts—a key gap addressed by this study.

Collectively, these studies affirm the value of structured reflection but underscore the need for more systematic, context-sensitive integration. This research responds by combining Moon's Reflective Thinking Model with Murray's Process Writing Model to scaffold staged, reflective engagement across the writing cycle. It uniquely examines how this integration operates within collaborative and individual ESL learning environments, contributing important pedagogical insights into how reflective practices can be optimized to support both writing performance and metacognitive growth.

Research Purpose

Despite robust evidence supporting both process writing and reflective practice independently, limited research has examined their combined application across varied instructional contexts. Few studies have explored how structured reflective prompts, embedded at key stages of the writing process, impact writing development differently in collaborative versus individual learning environments. Recent scholarship (e.g., Sudirman et al., 2024; Zhang, 2024; Wang & Taylor, 2025) has called for investigations into how these pedagogical strategies intersect to foster metacognitive growth and learner engagement.

This study addresses that gap by examining how the integration of Moon's Reflective Thinking Model within Murray's Process Writing framework affects writing quality and reflective depth among ESL learners. Specifically, it compares outcomes between collaborative and individual writing settings to identify context-specific mechanisms that support metacognitive engagement and meaningful revision.

Research Objectives

This study is guided by the following objectives:

1. To examine the impact of integrating Murray's Process Writing Model and Moon's Reflective Thinking Framework on ESL students' writing quality in collaborative and individual writing contexts.
2. To compare the depth and progression of reflective engagement between students writing collaboratively and those writing individually.
3. To explore students' perceptions of structured reflection and how it influences their writing process in both collaborative and individual settings.

Research Questions

The study seeks to address the following research questions:

1. How does the integration of Moon's Reflective Thinking Model into Murray's Process Writing approach influence writing development in collaborative versus individual writing contexts?
2. In what ways does reflective depth (based on Moon's levels) evolve across prewriting, drafting, and revising stages within each group?
3. What are the perceived benefits and challenges of structured reflection from the perspectives of collaborative and individual ESL writers?

RESEARCH METHODOLOGY

Participants

The study involved 60 undergraduate ESL students enrolled in a writing course at a Malaysian university. Participants were randomly assigned to either a collaborative writing group ($n = 30$) or an individual writing group ($n = 30$). To ensure baseline equivalence, all students completed a prewriting task assessed using CEFR-aligned criteria. Results showed comparable mean scores between the groups (Collaborative: $M = 64.06$, $SD = 4.50$; Individual: $M = 64.40$, $SD = 4.66$), supporting valid comparisons in subsequent stages.

To ensure baseline equivalence, all students completed a prewriting task assessed using CEFR-aligned criteria. Results showed comparable mean scores between the groups, indicating similar initial writing ability prior to the intervention as shown in Table 2 below.

Table 2. Prewriting Scores of Collaborative and Individual Groups

Group	Number of Participants	Structure	Mean Score	SD
Collaborative	30	10 groups of 3 students	64.06	4.50
Individual	30	Individual participants	64.40	4.66

Procedure and Instruments

Writing Tasks and Reflective Structure

The study design was based on Murray's Process Writing Model, which guided learners through three iterative stages: prewriting, drafting, and revising. At each stage, students were provided with structured reflection prompts grounded in Moon's Reflective Thinking Model. These prompts encouraged engagement across multiple levels of reflection — descriptive, dialogic, and critical.

- The collaborative group worked in triads, jointly composing texts and submitting group reflections at each stage.
- The individual group completed all writing and reflections independently.

Instruments and Data Sources

Three primary instruments were used to collect data:

1. Writing Quality was assessed using CEFR-aligned rubrics covering five traits: content, coherence, range, accuracy, and mechanics. These rubrics ensured objective and standardized evaluation of learners' writing performance.

2. Reflection Depth was evaluated using a 5-point rubric adapted from Moon's Reflective Thinking Model. Scores ranged from 1 (descriptive recall) to 5 (critical reflection), with criteria based on indicators such as self-awareness, reasoning, and goal-setting.
3. Qualitative Data Sources included reflective journal entries and responses to open-ended items in a post-intervention survey.

Two trained raters, both experienced English language educators, independently scored all reflections. Inter-rater reliability was confirmed using Cohen's Kappa ($\kappa = 0.87$), indicating high consistency.

Data Analysis

Quantitative data, including writing quality scores and reflection depth ratings, were analyzed using independent-samples t-tests and repeated measures ANOVA to compare group performance across writing stages. These tests examined both between-group differences and within-group changes over time.

Qualitative data from reflective journals and survey responses were subjected to thematic analysis. An inductive coding approach was used to extract key patterns and themes related to students' metacognitive engagement, awareness of revision strategies, and perceived benefits or challenges of the reflection process.

Post-Intervention Survey

To complement the reflective journal data, a post-intervention survey was administered to all participants. The instrument included 15 Likert-scale items and three open-ended questions, designed to capture students' perceptions of structured reflection in terms of writing awareness, revision strategies, and overall learning experience. Likert data were analyzed using descriptive statistics and t-tests, while open-ended responses were coded thematically for deeper interpretive insights.

RESULTS

Writing Quality Comparison

Table 3 presents the post-intervention writing quality scores for both collaborative and individual groups.

Table 3. Post-Intervention Writing Quality Scores by Group (Mean and SD)

Trait	Collaborative Group Mean	Collaborative Group SD	Individual Group Mean	Individual Group SD
Content	4.20	0.25	3.70	0.34
Coherence	4.14	0.38	3.87	0.26
Range	4.26	0.35	3.74	0.30
Accuracy	4.30	0.33	3.69	0.24
Mechanics	4.18	0.32	3.83	0.26

Based on CEFR-aligned criteria across five traits: content, coherence, range, accuracy, and mechanics, the results showed that the collaborative group consistently outperformed the individual group in all dimensions. Notably, their scores in accuracy ($M = 4.30$ compared to 3.69) and content development ($M = 4.20$ compared to 3.70) showed the greatest improvements, indicating stronger control over language use and more elaborate idea development. The collaborative group also achieved higher scores in coherence, range, and mechanics, suggesting that structured peer interaction and joint reflection may have contributed to more organized and refined writing. These results highlight the potential benefits of embedding structured reflection within a collaborative writing context to support both linguistic and rhetorical aspects of academic writing.

Reflection Depth Across Writing Stages

As shown in Table 4, independent-samples t-tests revealed that the collaborative group demonstrated significantly higher reflection scores than the individual group at each stage of the writing process.

Table 4. Summary of T-Test and ANOVA Results for Reflection Scores

Stage	t-value	p-value	ANOVA Effect	F-value	p-value
Prewriting	4.53	< .001	Group	61.34	< .001
Drafting	5.78	< .001	Stage	0.22	.800
Revising	3.50	.001	Group × Stage	0.51	.603

In the prewriting stage, the collaborative group's scores were significantly higher ($t(58) = 4.53$, $p < .001$), with similar patterns observed during drafting ($t(58) = 5.78$, $p < .001$) and revising ($t(58) = 3.50$, $p = .001$). A repeated measures ANOVA confirmed a significant main effect of group ($F(1,174) = 61.34$, $p < .001$), indicating that collaborative learners consistently engaged in deeper levels of reflection throughout the writing cycle. However, there were no significant differences across stages or in the interaction between group and stage, suggesting that the collaborative group's reflective advantage was stable regardless of when in the writing process reflection occurred.

Qualitative Insights from Reflective Journals

Thematic analysis of students' reflective journals revealed three overarching patterns that reinforced the quantitative findings. First, many students—both collaborative and individual—reported enhanced awareness of their writing strengths and weaknesses as a result of engaging with the structured prompts. Collaborative learners, in particular, noted that reflection made them more aware of issues such as paragraph coherence, argument development, and sentence variety. Second, collaborative learners described the dialogic aspect of peer reflection as highly beneficial. Reflecting with peers prompted them to reevaluate their assumptions and consider alternative strategies, often leading to more purposeful revisions. Third, students across both groups expressed appreciation for the structure and clarity provided by the prompts. While collaborative students emphasized the value of group discussion, individual learners appreciated the opportunity to reflect independently, with some indicating that they preferred the autonomy this offered. While both collaborative and individual learners found value in the reflection process, further qualitative coding revealed more nuanced themes, as described below.

Enhanced Awareness of Writing Strengths and Areas for Improvement

Students across both groups reported that reflection helped them become more aware of what was effective in their writing and where they needed to improve. One collaborative student noted, "I realised that I always had strong ideas but sometimes my paragraphs were not connected clearly. Reflection really helped me notice this so I think I write more coherently now." Similarly, an individual student commented, "After writing my first draft, I used the reflection questions to check if my introduction was clear enough. Before, I would not have thought about it. With the reflective tool, I tend to pause and reflect more on what I have written to ensure I am making my point clear." Another student explained that reflection helped them identify repetitive content and inspired more focused revisions.

Value of Collaborative Dialogue in Reflection

Collaborative group students frequently highlighted the benefits of peer interaction during reflection. Many noted that discussing responses with group members enabled them to discover new perspectives and refine their arguments more effectively. As one student put it, "Talking about my reflection with my partner helped me see new ways to explain my points better." Another reflected, "Sometimes I thought my writing was okay, but after hearing my friend's comments during reflection, I noticed what could be improved... we became more critical

about writing it right." These insights underscore the role of dialogic reflection in enhancing critical thinking and awareness.

Appreciation for Structured Prompts and Reflective Scaffolding

Across both groups, students expressed strong appreciation for the clarity provided by the structured reflection prompts. One student shared, "The reflection questions were very helpful — without them, I would not know what to think about." Another noted that the prompts helped them consider stylistic elements such as word choice and sentence variation, which they might have otherwise overlooked. A collaborative student summed up the value of the prompts by stating, "In the past I just edited grammar. The reflection prompts helped me look at my writing as a whole."

Learner Perceptions: Survey Data

In addition to reflective journals, survey results presented in Appendix 3 offer important insights into students' perceptions of structured reflection. The 15-item Likert-scale questionnaire revealed notable differences between collaborative and individual groups in how they experienced the reflection process.

Overall, the collaborative group reported stronger agreement on the usefulness of structured reflection across a range of domains. They found it particularly helpful for organizing ideas ($M = 4.84$), generating new content ($M = 4.62$), and increasing writing confidence ($M = 4.43$). These trends suggest that structured reflection, when combined with collaborative dialogue, helped students better manage the writing process and approach revision with more intention and clarity.

By contrast, the individual group reported slightly lower agreement across most items but demonstrated a higher mean score in their enjoyment of reflection activities ($M = 4.46$ compared to 3.88 in the collaborative group). This suggests that individual learners may have appreciated the autonomy and personal space afforded by solo reflection, even if the metacognitive gains were somewhat less pronounced.

Open-ended responses echoed these trends. Collaborative learners highlighted the cognitive benefits of peer discussion, noting that hearing alternative viewpoints helped them reconsider their structure and argumentation. Meanwhile, individual learners valued the structured prompts for guiding their thinking but also expressed a preference for working independently, citing less pressure and more personal control.

Together, these findings indicate that while collaborative reflection enhances metacognitive depth and writing performance, individual reflection may better support learner comfort and autonomy. This balance underscores the pedagogical value of offering flexible reflection formats that accommodate diverse preferences and learning styles.

In sum, these qualitative findings reinforce both the reflective scoring data and the survey results, suggesting that structured reflection fosters greater metacognitive awareness and more intentional revision strategies. The added dimension of **collaborative reflection** appeared to deepen students' engagement through dialogic exchange and shared meaning-making, highlighting the pedagogical value of peer-supported metacognitive dialogue in ESL writing contexts.

DISCUSSION

This study explored how structured reflection, when embedded within process-oriented writing instruction, affects ESL learners' writing quality, reflective engagement, and perceptions in both collaborative and individual settings. By integrating Murray's Process Writing Model with Moon's Reflective Thinking Framework, the findings offer a nuanced understanding of how reflection supports metacognitive development and academic writing in diverse learner contexts.

The quantitative results demonstrated that learners in the collaborative group consistently outperformed those in the individual group across writing quality dimensions—particularly in content, accuracy, and coherence. These gains can be attributed to the dialogic nature of collaborative reflection, which allowed students to articulate and

critique their ideas through peer discussion. Such peer interaction appears to scaffold metacognitive engagement, as supported by the significantly higher reflection scores at all stages among collaborative learners. These findings align with previous studies (e.g., Wang & Taylor, 2025; Syamdianita & Hati, 2025) that suggest collaborative dialogue enhances writing development through shared cognitive effort and perspective-taking.

Importantly, the socio-cognitive mechanisms underlying these improvements warrant attention. In collaborative settings, reflection became a space for negotiation of meaning and joint problem-solving, leading to more purposeful revisions. This is particularly relevant in the Malaysian ESL context, where educational culture often values collective effort and peer-based learning. The tendency toward group interdependence may have amplified the benefits of collaborative reflection, making it both culturally congruent and cognitively beneficial.

In contrast, learners in the individual condition showed more varied reflection scores, with some demonstrating depth and others remaining at descriptive levels. Although individual reflection fostered a sense of autonomy and was rated as more enjoyable by some participants, it may lack the external stimulus provided by peer dialogue. This suggests that while individual reflection supports independent thinking, it may require stronger scaffolding or modeling to stimulate deeper metacognitive engagement. Thematic analysis confirmed that both groups appreciated the structured prompts, but collaborative learners reported that peer discussion added insight and motivation.

Additionally, the post-intervention survey revealed that while collaborative learners reported higher gains in writing awareness and revision strategy development, individual learners valued the control and privacy of solo reflection. These findings imply that effective reflective pedagogy should be flexible—balancing structured scaffolds with optional peer collaboration—to cater to varied learner preferences and cognitive styles.

Despite the robust findings, this study has several limitations. The relatively small sample size and the short intervention period limit the generalizability of the results. Moreover, potential differences in facilitator support across groups may have influenced the depth of reflection. Future studies could adopt a longitudinal design and expand to different ESL populations to validate these outcomes over time. Further exploration of how teacher feedback, reflection training, or digital tools can enhance structured reflection is also warranted.

Overall, the study confirms that structured, staged reflection—particularly when dialogically mediated—can significantly enhance writing quality and metacognitive engagement in ESL learners. It also underscores the pedagogical importance of integrating reflective tools into each stage of the writing process and considering the socio-cultural context in which learners operate.

CONCLUSION

This study investigated the impact of integrating structured reflection into process-oriented writing instruction on ESL learners' writing quality and metacognitive engagement in both collaborative and individual contexts. By combining Murray's Process Writing Model with Moon's Reflective Thinking Framework, the findings offer compelling evidence that such integration not only improves textual outcomes but also fosters critical self-awareness and deeper engagement with the writing process.

Quantitative results showed that learners in the collaborative condition consistently produced higher-quality writing and demonstrated deeper levels of reflection across all stages. These gains appear to stem from the dialogic nature of peer reflection, which enhanced critical thinking and revision purpose. Individual learners also benefited from structured reflection, particularly in terms of personal insight and autonomy, though their depth of engagement was more variable.

Qualitative data further illustrated that structured prompts helped students identify weaknesses, articulate strategies, and revise meaningfully. The collaborative setting amplified these effects through social interaction, mutual feedback, and shared accountability.

In sum, structured reflection—when embedded within a recursive writing model—serves as a powerful pedagogical tool that enriches both cognitive and affective dimensions of writing development. The study

underscores the value of reflective scaffolds and peer dialogue in shaping more self-regulated, confident, and competent ESL writers.

IMPLICATIONS AND RECOMMENDATIONS

The findings of this study offer several important pedagogical implications for ESL educators and curriculum designers seeking to enhance students' writing performance and metacognitive skills.

First, instructors should consider embedding structured reflection at each stage of the writing process, not merely at the end. Reflection prompts aligned with cognitive and metacognitive goals—such as evaluating idea development, reasoning, and revision strategies—can scaffold deeper engagement and help learners internalize effective writing practices.

Second, the study underscores the benefits of collaborative reflection. Peer interaction not only enhances awareness through dialogic exchange but also provides a supportive space for learners to co-construct meaning and identify areas for improvement. Educators can leverage this by incorporating structured group writing and reflection activities, especially in cultures where collaborative learning is pedagogically and culturally resonant.

Third, while collaborative reflection showed the strongest outcomes, it is equally important to accommodate learners who prefer individual reflection, often valuing autonomy and focused concentration. A flexible instructional model that offers both collaborative and individual options—with tailored scaffolds—can cater to diverse learner preferences and cognitive styles.

Fourth, educators must receive professional development in reflection facilitation. Teachers play a pivotal role in modeling reflective thinking, designing effective prompts, and providing feedback that extends learners' metacognitive depth. Institutional support for building reflection literacy is therefore essential.

From a research standpoint, future studies should explore longitudinal impacts of structured reflection to determine its sustainability and transferability across writing tasks and genres. Investigating how digital platforms and AI-supported tools can facilitate structured reflection—especially in asynchronous or hybrid ESL classrooms—also represents a promising direction.

In sum, structured, staged reflection—especially in collaborative environments—has demonstrated significant potential to advance ESL writing pedagogy. Thoughtfully implemented, it can transform writing instruction from a product-focused endeavor into a metacognitively rich, process-oriented practice that empowers learners as autonomous, reflective writers.

Ethical Approval

This study was conducted in accordance with institutional ethical guidelines. Ethical approval was obtained from the Research Ethics Committee of the Academy of Language Studies, Universiti Teknologi MARA, Melaka, Malaysia. All participants provided informed consent prior to participation.

Conflict of Interest

The authors declare no conflict of interest.

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REFERENCES

1. Aldossary, K. S. (2021). The impact of collaborative writing on EFL learners' writing development: A longitudinal classroom-based study in Saudi Arabia. *Arab World English Journal*, 12(3), 174–185. <https://dx.doi.org/10.24093/awej/vol12no3.12>
2. Brown, L., & Davis, K. (2022). Reflective writing and learner autonomy in higher education. *Journal of Educational Psychology*, 114(2), 345–360. <https://doi.org/10.1037/edu0000523>
3. Chan, C. K. Y., & Lee, K. K. W. (2021). Reflection literacy: A multilevel perspective on the challenges of using reflections in higher education through a comprehensive literature review. *Educational Research Review*, 34, 100411. <https://doi.org/10.1016/j.edurev.2021.100411>
4. Chen, Y., Wang, J., & Liu, S. (2024). Integrating reflection in process writing: Effects on metacognition and writing outcomes. *Language Teaching Research*, 28(1), 87–106. <https://doi.org/10.1177/13621688221087654>
5. Garcia, M., Smith, A., & Lee, J. (2023). Collaborative writing and reflective practices: Enhancing student engagement. *Journal of Writing Research*, 15(1), 56–74. <https://doi.org/10.17239/jowr-2023.15.01.04>
6. Harshalatha, M., & Sreenivasulu, B. (2024). Academic writing challenges of EFL learners at the tertiary level: A pedagogical perspective. *Journal of Language and Linguistic Studies*, 20(1), 245–260.
7. Kim, H., & Lee, S. (2023). The effectiveness of process writing instruction on academic writing skills. *English Teaching & Learning*, 47(3), 223–239. <https://doi.org/10.1007/s42321-023-00129-7>
8. Maziahtusima, I., Oderinde, I., & Ahmad, S. (2025). Empowering learners' reflective thinking through collaborative reflective learning. *International Journal of Academic Research in Business and Social Sciences*, 15(4), Article e-ISSN: 2222-6990.
9. Moon, J. (2004). *A handbook of reflective and experiential learning: Theory and practice*. Routledge.
10. Murray, D. M. (1980). Writing as process: How writing finds its own meaning. In T. R. Donovan & B. W. McClelland (Eds.), *Eight approaches to teaching composition* (pp. 3–20). National Council of Teachers of English.
11. Pham, V. P. H. (2023). The impacts of collaborative writing on individual writing skills. *Journal of Psycholinguistic Research*, 52, 1–16. <https://doi.org/10.1007/s10936-023-09948-9>
12. Smith, J., & Nguyen, T. (2022). The role of reflective practice in academic writing development. *Studies in Higher Education*, 47(8), 1653–1667. <https://doi.org/10.1080/03075079.2021.1905243>

13. Sudirman, S., Kuswandono, P., & Rochsantiningih, D. (2024). Reinforcing reflective practice through reflective writing in higher education: A systematic review. *Reflective Practice*, 25(1), 23–41. <https://doi.org/10.1080/14623943.2023.2251802>
14. Sudirman, A., Gemilang, A. V., & Kristanto, T. M. A. (2021). The power of reflective journal writing for university students from the EFL perspective. *Studies in English Language and Education*, 8(3), 1061–1079. <https://doi.org/10.24815/siele.v8i3.20368>
15. Syaadiyah. (2021). Reflective journal writing: Writing processes applied by skilful and less skilful EFL graduate students. *English Review: Journal of English Education*, 9(2), 207–218. <https://doi.org/10.25134/erjee.v9i2.4515>
16. Syamdianita, S., & Hati, G. M. (2025). Collaborative online writing: Students' perspectives and their actual writing performance. *Script Journal: Journal of Linguistics and English Teaching*, 10(1), 45–65.
17. Teng, L. S. (2023). Metacognitive process-based writing instruction: Promoting L2 learners' self-regulated writing and critical thinking. *System*, 114, 102988. <https://doi.org/10.1016/j.system.2023.102988>
18. Wang, X., & Taylor, R. (2025). Reflection and process writing in second language contexts: A comparative study. *Journal of Second Language Writing*, 55, 101120. <https://doi.org/10.1016/j.jslw.2024.101101>
19. Winarti, D. Y., & Cahyono, B. Y. (2020). Fostering EFL students' reflective thinking through process writing and reflective journal writing. *Indonesian Journal of Applied Linguistics*, 10(3), 686–697. <https://doi.org/10.17509/ijal.v10i3.31797>
20. Zhang, L. (2024). Recursive drafting and revision in process writing pedagogy. *Language Learning Journal*, 52(1), 78–93. <https://doi.org/10.1080/09571736.2023.2184761>

APPENDICES

Appendix 1: Structured Reflection Toolkit for Process Writing

Writing Stage	Process Writing Focus (Murray)	Moon's Reflection Level	Structured Reflective Prompt	Example Response (Collaborative)	Example Response (Individual)
1. Prewriting	Discovering and generating ideas	Descriptive	"What are your initial thoughts or knowledge about the topic? What points do you plan to include?"	"We thought about the causes of climate change and decided to include pollution and deforestation."	"I know climate change is caused by pollution. I want to write about how it affects the weather."
2. Drafting	Shaping and composing content	Dialogic	"How did your ideas change while writing? Did discussing or researching lead you to rethink anything?"	"At first we wanted to blame factories only, but then after reading an article, we added agriculture as a factor too."	"When I started writing, I realised I didn't have enough examples. I went back to search for more evidence."
3. Revising	Rewriting, refining, reorganising	Critical	"What assumptions did you challenge during revision? How did feedback affect your writing choices?"	"Our peer group said our intro was weak. We realised we assumed readers knew too much. We rewrote it more clearly."	"I assumed the reader understood my point, but feedback showed I was vague. I added more explanation."

Appendix 2. Coding Framework Based on Moon's (2004) Levels of Reflection

Level	Reflection Type	Criteria	Score	Descriptors	Example Indicators
1	Descriptive	Recounts events without interpretation or purpose.	1	Reflection is surface-level and task-focused. No evidence of analysis, reasoning, or awareness.	"I wrote the introduction." "We checked grammar."
2	Descriptive with Commentary	Adds brief personal reaction or feeling, but not explored.	2	Includes reactions (e.g., "I was confused") but lacks explanation or deeper insight.	"I found it hard to start the essay." "We were unsure about the structure."
3	Dialogic	Describes decision-making or links between ideas/actions.	3	Shows awareness of why something was done. Reflection explores connections or changes in understanding.	"I revised the paragraph after noticing my argument wasn't clear." "We decided to reorder ideas after discussing clarity."
4	Analytical	Considers alternatives,	4	Reflects on strengths, weaknesses, and uses	"I realised I needed more examples after the peer review." "We noticed our

		feedback, or implications.		evidence or feedback to justify changes.	examples were repetitive, so we added diversity.”
5	Critical	Questions assumptions, generalises learning, or plans future improvements.	5	Shows metacognitive insight and self-awareness. Reflection connects past learning to future applications.	“I learned I rely too much on passive voice. Next time, I’ll use more active structures.” “We understood that prewriting together improved flow, so we’ll do it earlier in future tasks.”

Appendix 3: Post-Intervention Survey Questionnaire Results (Mean and SD)

Survey Item	Collaborative Group Mean	Collaborative Group SD	Individual Group Mean	Individual Group SD
Reflection increased writing awareness	4.17	0.22	3.34	0.66
Identified strengths as a writer	4.42	0.51	3.20	0.62
Identified areas for improvement	3.77	0.40	3.72	0.59
Motivated careful revision	4.00	0.38	3.31	0.43
Led to meaningful draft changes	4.17	0.37	4.00	0.61
Helped organise writing	4.84	0.56	3.81	0.49
Generated new ideas	4.62	0.38	3.58	0.36
Improved critical thinking	4.14	0.38	3.44	0.43
Increased writing confidence	4.43	0.47	3.67	0.37
Clarified writing strategies	4.26	0.40	3.94	0.59
Connected learning to future writing	3.89	0.48	4.04	0.62
Increased process management awareness	3.95	0.41	3.22	0.40
Enjoyed reflection activities	3.88	0.41	4.46	0.48
Would use reflection in future courses	4.17	0.52	3.44	0.54
Improved overall learning experience	4.25	0.39	3.23	0.38