

Enhancing Academic Writing Through Critical Thinking Learning Logs among Indonesian EFL University Students

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ABSTRACT

Integrating critical thinking (CT) into English as a Foreign Language (EFL) writing instruction presents ongoing challenges, particularly in non-Western academic settings such as Indonesia. Therefore, this study investigates using CT-oriented learning logs to improve academic writing performance among EFL university students at STKIP PGRI Lampung. The research aimed to enhance students' ability to develop coherent arguments and express reasoned perspectives in writing. Employing a mixed-methods design, the study involved 35 second-semester students who participated in a 14-week intervention that combined opinion writing, summary tasks, and reflective responses. Quantitative data were collected through pre- and post-tests assessed using holistic and analytical rubrics, while qualitative data were derived from thematic analysis of students' reflective logs. Results indicated significant improvements in writing fluency, argumentative structure, and quality of reasoning. However, aspects such as the clarity of topic sentences and paragraph cohesion remained areas for development. The findings contribute to the growing literature on CT in EFL contexts and demonstrate that structured reflective practices can effectively support the development of academic writing. This study offers practical implications for EFL educators

aiming to integrate critical thinking into writing pedagogy through accessible and contextualized strategies.

Key words: Critical Thinking; Academic Writing; EFL Learners; Learning Logs; Indonesian University Students

INTRODUCTION

Integrating critical thinking (CT) into English language education has become a key priority in global higher education. As students increasingly operate in multilingual and multicultural contexts, thinking critically, reflecting, evaluating, and making reasoned decisions has emerged as a fundamental academic and professional skill. In particular, teaching English as a Foreign Language (EFL) instruction, especially in non-Western educational settings, promoting CT involves not only the development of cognitive skills but also a pedagogical shift toward deeper and more analytical engagement with texts, ideas, and arguments. CT encompasses skills such as analyzing information, evaluating claims, synthesizing perspectives, and articulating viewpoints logically and persuasively, essential skills for academic writing and communication.

Nevertheless, despite its growing importance, developing CT in EFL settings remains a complex pedagogical challenge. This is due not only to students' limited language proficiency but also to the influence of educational cultures that prioritize memorization, teacher-centered instruction, and passive learning. In many Indonesian classrooms, including those at STKIP PGRI Lampung, these practices limit opportunities for dialogic interaction, open-ended inquiry, and reflective writing (Sugianto, 2020). These conditions contrast with Western rhetorical traditions that emphasize argumentation, independent reasoning, and critical literacy. Scholars such as Vygotsky (1978) emphasize the social nature of learning, whereas Byram (1997) underscores the need for intercultural competence in language teaching, both perspectives reinforcing the need to situate CT in authentic communicative tasks.

Furthermore, academic writing provides a key platform for promoting CT skills, as it requires learners to go beyond superficial language use toward coherent organization, evidence-based argumentation, and critical engagement with content. However, many Indonesian university students struggle to generate and substantiate ideas, structure paragraphs logically, and articulate their positions clearly. This difficulty is often due to a lack of structured instruction on the conventions of academic writing and insufficient exposure to critical-thinking-oriented writing tasks (Fajaryani et al., 2021; Maharani, Hakiki, & Safitri, 2023). While language instruction typically focuses on grammar and vocabulary, it often places less emphasis on higher-order thinking, resulting in writing that may be linguistically accurate but lacking in depth or critical insight.

To respond to these challenges, this study examines the use of critical thinking-oriented learning logs, structured journals in which students reflect on their

learning, evaluate ideas, and respond to guided prompts. Learning logs have been shown to promote metacognitive awareness and autonomy, particularly when combined with CT tasks such as opinion writing, summarizing, and reflective commentary (Dam, 2011; Mehta & Al-Mahrooqi, 2015). In EFL classrooms, they can function as scaffolding that not only improves language skills but also support the development of analytical reasoning. International research in contexts such as Japan (Kodama, 2023), Oman (Mehta & Al-Mahrooqi, 2015), and Taiwan (Yeh, Yang, Fu, & Shih, 2023) has demonstrated the effectiveness of learning logs in improving both written fluency and critical engagement.

At the institutional level, at STKIP PGRI Lampung, CT-oriented learning logs were introduced into the Academic Writing course as a means to help students move from descriptive to analytical and persuasive writing. Weekly tasks encouraged students to express opinions on current issues, summarize texts, and reflect on classroom discussions. These tasks were integrated into a broader instructional design that included peer collaboration, feedback sessions, and writing workshops, components consistent with process-based writing approaches known to support both CT and language development (Tsui, 2003). The learning logs thus served not only as writing practice but also as tools to engage students in higher-order thinking through language.

Although previous studies have examined CT and academic writing in EFL contexts, few have explored the impact of reflective learning logs in Indonesian university settings. Moreover, even fewer have investigated how these tools affect coherence, fluency, and reasoning in students' writing performance. This study seeks to fill that gap by exploring the role of CT-based learning logs in enhancing the academic writing skills of EFL students. Specifically, it aims to assess how the intervention affects students' ability to produce coherent, fluent, and well-reasoned texts and to consider the educational implications of integrating reflective CT strategies into writing instruction in Indonesian higher education.

LITERATURE REVIEW

Critical Thinking in EFL Contexts

Critical thinking is broadly defined by Facione (1990) as “purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference.” Ennis (2011) describes it as “reasonable, reflective thinking focused on deciding what to believe or do.” These definitions frame CT as a higher-order skill essential for independent learning and decision-making. However, in EFL learning environments, especially in non-Western settings, CT must be interpreted within linguistic and cultural constraints. Atkinson (1997) argues that CT is not a universal cognitive practice but is shaped by Western educational traditions, which emphasize debate and individual reasoning. In contrast, many Asian contexts, including Indonesia, place greater emphasis on memorization and teacher authority. Widiastuti, Murtini, and Anto (2022) point out that while CT is present in

Indonesian curriculum policy, it is rarely translated into classroom practice, especially in language teaching. As a result, EFL learners are often unprepared to critically evaluate information or effectively express arguments in academic writing.

CT and Written Communication

Concerning this, academic writing is a primary domain in which CT is both exercised and demonstrated. Paul and Elder (2019) assert that writing helps students “translate thought into structure,” which enhances their ability to think clearly and communicate effectively. Writing tasks that involve analysis, evaluation, and argumentation engage students in complex reasoning and encourage them to support claims with evidence. Tsui (2003) highlights the role of process-oriented writing instruction in fostering CT. Iterative writing, through drafting, peer review, and revision, has been shown to improve not only the organization of ideas but also the quality of reasoning. In the Indonesian context, Maharani et al. (2023) reported that many EFL students struggle to articulate thesis statements, connect ideas coherently, and justify their opinions. Fajaryani et al. (2021) similarly found that students lack exposure to writing tasks that demand critical engagement, suggesting the need for CT-based pedagogical models. From an international perspective, Mehta and Al-Mahrooqi (2015) found that integrating CT activities into academic writing classes in Oman significantly improved students’ argumentative clarity and analytical skills. These findings support the use of CT to enrich EFL writing instruction.

Learning Logs as a Tool for CT Development

Given these challenges, learning logs, structured journals that encourage students to reflect on their understanding, experiences, and beliefs, have emerged as effective tools for developing CT. Dam (2011) suggests that such reflective writing promotes learner autonomy and metacognitive awareness. McCrindle and Christensen (1995) also found that students using learning logs showed improved reasoning abilities and self-monitoring skills. More recent studies continue to affirm these findings. Yeh et al. (2023) showed that Taiwanese EFL students improved their critical reflection skills through regular log entries, while Kodama (2023) reported that Japanese learners using CT-based logs developed clearer written structures and more reasoned arguments. These studies suggest that guided reflective writing can cultivate higher-order thinking along with language proficiency. Nevertheless, despite these promising results, the pedagogical use of learning logs remains limited in Indonesia. Reflective writing tools such as portfolios or journals are occasionally used, but primarily for tracking progress rather than developing CT. There is limited research on their impact as cognitive scaffolds for writing, especially in academic contexts. Therefore, integrating CT into learning logs could offer Indonesian EFL learners opportunities to simultaneously improve both critical reasoning and communicative competence.

CT-Focused Writing Instruction

To provide a theoretical basis, a variety of frameworks can be employed to effectively integrate CT into writing instruction. Anderson and Krathwohl's (2001) revision of Bloom's Taxonomy is one of the most influential, organizing cognitive processes from lower-order skills (remembering, understanding) to higher-order skills (analyzing, evaluating, creating). Writing tasks that focus on the upper levels of this taxonomy help learners move beyond superficial comprehension toward analytical and evaluative thinking. Paul and Elder's (2019) framework for CT, which emphasizes elements such as purpose, assumptions, implications, and point of view, provides a foundation for developing reflective prompts that enhance written reasoning. Nosich (2022) applies these elements in classroom practice, encouraging learners to constantly interrogate the quality of their arguments and reasoning.

In the Indonesian context, Hasnunidah, Susilo, Irawati, and Sutomo (2015) adapted these models into a five-paragraph essay structure to assist lower-intermediate university students. Their model emphasized thesis clarity, logical coherence, and the use of supporting evidence. Although originally designed for formal essays, the framework aligns well with the structure of CT-oriented learning logs, providing a scaffolding for expressing reasoned viewpoints in shorter, more reflective formats. Despite these theoretical contributions, few studies have investigated their combined application in Indonesian higher education. Much of the existing research focuses on full-length essays or reading comprehension, leaving a gap in understanding how shorter writing tasks, such as opinion paragraphs, summaries, and reflective entries, can foster CT and academic fluency among learners with emerging English proficiency.

Furthermore, there is limited empirical evidence from Indonesian institutions regarding how CT-oriented learning logs influence coherence, fluency, and reasoning in EFL writing. Therefore, this study seeks to address that gap by implementing a CT-based learning log system within an Academic Writing course at STKIP PGRI Lampung. It aims to assess the extent to which reflective log writing can enhance students' written expression and reasoning, and to explore its pedagogical implications for writing instruction in the English as a Foreign Language (EFL) context in Indonesia. Ultimately, by mapping the intervention onto established theoretical models and adapting them to local needs, this research contributes to a more contextualized approach to integrating CT into writing pedagogy. It offers empirical insights into how structured reflective practices can foster critical and communicative competencies in EFL university learners.

METHOD

Design and Samples

This study adopted a convergent mixed-methods design (Creswell & Plano Clark, 2023) using a pre-test/post-test structure to investigate the impact of critical thinking (CT)-oriented learning logs on students' academic writing. The participants were 35 second-semester undergraduate students enrolled in an Academic Writing course at STKIP PGRI Lampung during the even semester of the 2024–2025 academic year. The students were purposively selected, and their English proficiency levels ranged from A2 to B1 on the CEFR. Most participants were from rural and suburban areas and had completed the previous semester of General English. To ensure ethical compliance, participation was voluntary and supported by informed consent. The research received ethical approval from the Research Ethics Committee (Approval No. 24-STKIP/2024), and all data were anonymized to protect student identities.

Instrument and Procedure

As the main intervention, the study employed CT-oriented learning logs, which are reflective journals designed to promote metacognition and analytical reasoning (Dam, 2011; McCrindle & Christensen, 1995). To support the development of academic writing and critical thinking, students participated in structured weekly writing activities throughout the 14-week intervention. These activities consisted of three recurring task types designed to foster reflection, argumentation, and summarization skills. The details of the task structure are presented in Table 1.

Table 1. Weekly Writing Tasks during the 14-Week Intervention

Task Type	Description	Word Count	Submission Format
Today's Argument	Opinion paragraph responding to current or topical issues	100–120 words	Google Classroom / Print
Today's Summary	Paraphrased summary of assigned readings, videos, or lectures	80–100 words	Google Classroom / Print
Today's Reflection	Personal reflection on peer feedback, classroom discussions, or learning	50–70 words	Google Classroom / Print

Additionally, instructional support included weekly lessons on CT principles, guided peer review, and structured writing workshops, which were consistent with process-based pedagogy (Tsui, 2003). Peer assessments were formative only and did not contribute to the final grade. Throughout the intervention, students were encouraged to revise their work based on feedback, promoting iterative learning

and reflection. To evaluate learning outcomes, writing development was measured through pre- and post-tests in which students answered the same feedback-based writing question. Responses were scored using two rubrics: a holistic rubric adapted from the TOEFL iBT Independent Writing Task (ETS, 2020), and an analytical rubric focusing on five writing features: coherence, thesis clarity, support and elaboration, reasoning, and fluency. Each was scored on a 3-point scale, yielding a total score of 15.

Two hundred and one learning log entries (six per student, selected between Weeks 3 to 13) were analyzed to observe changes in reasoning and critical engagement. The content validity of the instruments was established through expert review by two EFL specialists, and the rubrics were pretested with non-sample students to ensure clarity. To establish scoring consistency, inter-rater reliability was ensured through independent scoring by two trained raters, with a Cohen's Kappa coefficient greater than 0.80, indicating substantial agreement (McHugh, 2012).

Data Analysis

To examine the quantitative results, data were analyzed using SPSS version 27. Descriptive statistics (means, standard deviations, and frequencies) were used to summarize overall writing performance. To evaluate changes from pre- to post-test, paired-sample t-tests were applied for normally distributed data, while Wilcoxon Signed-Rank Tests were used for non-parametric comparisons. In addition, Chi-square tests were conducted to determine significant differences between the categorical dimensions of the analytical rubric. Simultaneously, qualitative data from student learning logs were analyzed using Braun and Clarke's (2021) six-phase model of thematic analysis. Codes were generated inductively and grouped into themes reflecting CT indicators such as logical argumentation, perspective-taking, and problem solving. This qualitative approach allowed the researchers to contextualize and deepen the interpretation of the quantitative findings, supporting methodological triangulation and improving the overall reliability of the results (Lincoln & Guba, 1985).

RESULT AND DISCUSSION

This section presents and analyzes the findings from both quantitative and qualitative data collected through pre- and post-intervention writing tests, as well as analysis of learning logs. The results are organized into three integrated themes that holistically represent the impact of Critical Thinking (CT)-oriented learning logs on students' academic writing performance.

Holistic Writing Performance and Student Reflections

Initially, the results showed that students' writing scores significantly improved using a 6-point scale adapted from the TOEFL iBT academic discussion rubric, from an average of 2.43 (SD = 0.76) in the pre-test to 3.31 (SD = 0.68) in the post-

test. A Wilcoxon Signed-Rank Test confirmed the significance of this increase ($z = 4.31$, $p < .001$, $r = .58$). These findings suggest that the intervention successfully enhanced students' ability to articulate structured and persuasive arguments.

Alongside these findings, qualitative reflections further substantiate this improvement. A thematic analysis of 210 student logs (6 entries per student) revealed increasing clarity and control over argument structure. Students began using thesis-evidence-commentary structures, improved their logical sequencing, and expressed more academic tones. For example, a student reflected, "I feel nervous to speak, but using AI, I feel more confident. Therefore, AI is a tool for equitable participation."

Moreover, survey results corroborated these perceptions, where 89% of students reported that the logs helped them organize ideas more clearly. One commented, "Before, I just wrote what the teacher wanted. Now I think about what I want to say." These reflections underscore an internalization of CT principles, as advocated by Mehta and Al-Mahrooqi (2015), and reinforce that reflective writing can promote higher-order thinking.

Analytical Writing Features and Argument Development

To further examine the development of critical reasoning, five analytical components were assessed across students' writing samples: logical consistency, main idea clarity, support quality, coherence, and conclusion effectiveness. Table 1 below outlines the comparative pre- and post-intervention results:

Table 1. Improvement in Analytical Writing Features

Feature	Pre-Intervention (%)	Post-Intervention (%)	χ^2	p-value
Logical Consistency	71	91	5.29	0.021
Main Idea Clarity	14	31	4.83	0.028
Support Quality	22	68	12.17	< .001
Coherence	9	26	3.87	0.049
Conclusion Effectiveness	17	40	6.02	0.014

Additionally, student logs revealed increased understanding of audience and purpose. Entries shifted from informal personal reflections to structured persuasive writing aimed at academic readers. In one case, a student wrote, "Some students say cheating in exams is okay because everyone does it. But I disagree. If we all cheat, we learn nothing." This shift supports Paul and Elder's (2019) assertion that writing facilitates critical reasoning.

For instance, writing samples demonstrated this progression. A student's pre-test opinion, "The translation is not perfect", was transformed into: "Even though AI

translation is improving, it cannot replace human communication. For example, when I chat with foreign friends, I need to show my emotions and make jokes. AI is too formal.” This evolution highlights the role of writing logs in enhancing both structural clarity and argumentative depth.

Writing Fluency, Methodological Rigor, and Learning Impact

The intervention markedly enhanced students' writing fluency. The average word count enhanced from 108.6 (SD = 21.4) to 142.3 (SD = 33.1), and a paired t-test confirmed statistical significance ($t = -5.66$, $p < .001$, $d = 0.89$). This aligns with Bean and Melzer (2021) and McCrindle & Christensen (1995), who argue that metacognitive writing enhances elaborative thinking and production. Importantly, the logs also demonstrated deeper reflective engagement. Many students began to question assumptions and critically analyze ideas. One commented, “At first, I thought social media was just bad. But after today’s discussion, I see that it has both positive and negative effects.” This pattern supports findings by Yeh et al. (2023) and Kodama (2023), who highlighted the potential of learning logs for self-regulated learning.

Furthermore, post-intervention survey responses confirmed cognitive growth and motivation. Seventy-six percent of students reported “thinking more deeply” before writing. One student commented, “I see my improvement every week,” indicating the logs’ role in enhancing writing confidence and autonomy. These results are consistent with the study’s methodology. The use of peer-reviewed rubrics, Cohen’s Kappa ($> .80$) for inter-rater reliability, and thematic coding triangulation ensured validity and reliability. The integration of student voice, performance data, and cognitive insight demonstrates that CT-oriented learning logs are a powerful pedagogical tool for developing both linguistic and critical thinking skills. In summary, the intervention enhanced students’ reasoning, coherence, fluency, and reflective awareness. These findings affirm the dual cognitive-linguistic benefits of structured, CT-based academic writing instruction and support its broader implementation in Indonesian higher education.

CONCLUSION

This study provides compelling evidence that Critical Thinking (CT)-oriented learning logs significantly enhance the academic writing performance of Indonesian EFL learners. The integration of structured, reflective tasks led to measurable improvements in holistic writing quality, argument development, coherence, and fluency. Beyond linguistic improvements, the intervention fostered greater cognitive engagement, as students showed heightened awareness of audience, purpose, and their learning processes. By systematically engaging learners in weekly reflection, the learning logs served as metacognitive tools, encouraging students to question assumptions, evaluate feedback, and monitor their progress. These findings align with previous studies (e.g., Bean & Melzer, 2021; Yeh et al., 2023; Kodama, 2023), reinforcing the view that metacognitive writing strategies not only enhance academic performance but also promote lifelong learning habits.

Furthermore, the study affirms the pedagogical value of embedding CT-based writing practices within EFL curricula, especially in contexts where students are traditionally unfamiliar with critical inquiry. The success of this intervention suggests that writing instruction in higher education should go beyond grammatical accuracy to include opportunities for structured reflection, reasoning, and self-regulation. In conclusion, CT-oriented learning logs represent a low-cost, scalable, and pedagogically rich approach to fostering both communicative competence and critical literacy. As educational institutions in Indonesia and other countries strive to prepare students for complex, knowledge-based societies, integrating reflective practices into writing instruction is not only beneficial but it is essential.

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