

Correlational Analysis of Critical Creative Literacy Domains in Argumentative Essays: Insights from Third-Semester Students at the University of Mataram

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Abstract: This study investigates the relationship between Critical Creative Literacy (CCL) domains and students' argumentative writing performance, with particular attention to identifying the domain with the strongest correlation. In higher education, students are expected to demonstrate critical and creative thinking in writing; however, empirical evidence concerning the relationship between specific CCL domains and writing performance remains limited. A correlational research design was employed involving third-semester students at the University of Mataram. Data were collected using a Likert-scale questionnaire to measure CCL domains and a writing test to assess argumentative writing performance. The data were analyzed using Pearson Product-Moment Correlation using JASP statistical software. The findings indicate that there is no statistically significant relationship between any of the CCL domains and students' argumentative writing performance, as all p-values exceeded the significance level ($\alpha = 0.05$). Among the seven domains, focusing skill showed the strongest correlation with writing performance ($r = -0.263$, $p = 0.065$), although the relationship remained weak and statistically non-significant. These findings suggest that the relationship between CCL domains and students' argumentative writing performance may be more complex than theoretically expected within this context.

Keywords: *Critical Creative Literacy, argumentative writing, correlational study, EFL students, higher education.*

INTRODUCTION

The ability to think critically and creatively has become increasingly essential for students in higher education, particularly in academic writing (Clifton, 2021). These skills enable students to construct meaningful and well-supported arguments aside from organizing ideas (Indah, 2017). However, many students may still face challenges in applying critical and creative thinking in writing, especially in English as a Foreign Language (EFL) contexts (Zamzam et al., 2024). Challenges such as language barriers, limited engagement, and the growing reliance on AI tools to write for them may hinder students' ability to actively process and develop their own ideas (Kasneci et al., 2023).

In response to these challenges, the concept of critical literacy has gained attention as an approach that encourages students to go beyond surface-level understanding, which involves analyzing and questioning texts (Clifton, 2021; Sevinc et al., 2018). More recently, this concept has been expanded into Critical Creative Literacy (CCL), which integrates critical analysis with creative thinking processes (Zamzam et al., 2024). In CCL, there is a set of cognitive skills that are emphasized in the form of 7 domains, such as Focusing, Analyzing, Reasoning, Making Inferences, Evaluating, Drawing Implications, and Elaborating, all of which are considered important in constructing effective arguments.

Argumentative writing, as a key component of academic literacy, requires students to present claims, support them with evidence, and consider alternative perspectives

(Hillocks, 2011; Rapanta & Macagno, 2020). In this context, CCL skills are theoretically relevant, as they support students in organizing ideas, evaluating information and developing logical reasoning. However, despite the relevance of CCL in argumentative writing, empirical evidence examining how specific CCL domains relate to students' actual writing performance remains limited.

In the context of the University of Mataram, third-semester students are expected to develop advanced argumentative writing skills. Previous findings indicate that students still experience gaps in their Critical Creative Literacy skills, suggesting they may not be fully equipped to meet the requirements of academic writing (Zamzam et al., 2024). These challenges highlight the need to further investigate how CCL skills are reflected in students' argumentative writing performance.

Therefore, this study aims to examine the relationship between the seven CCL domains and the argumentative writing performance of third-semester students at the University of Mataram. It addresses two research questions: (1) Is there a significant relationship between each of the seven CCL domains and students' argumentative writing performance? (2) Which CCL domain has the strongest relationship with students' argumentative writing performance?

RESEARCH METHOD

This study employed a correlational research methodology, which was intended to investigate the

association between two or more variables without assuming causality (Singarimbun & Effendi, 1989). This study especially aimed to investigate the relationship between Critical Creative Literacy (CCL) skills as the independent variable and students' argumentative writing performance as the dependent variable. This design was appropriate because it enabled the researcher to determine the degree of correlation between each of the seven CCL areas and writing performance without assuming a cause-and-effect relationship. The analysis concentrated on seven CCL domains (Focusing, Analyzing, Reasoning, Making Inferences, Evaluating, Drawing Implications, and Elaborating) to investigate which domain could reveal the strongest association with students' argumentative writing performance.

The population consisted of 245 students enrolled in the Argumentative Writing course, from which three classes were selected through cluster random sampling, yielding an initial sample of 89 students. These 89 students formed the accessible sample for this study. After data cleaning, the final valid sample consisted of 50 students.

Data collection was conducted over a three-week period. First, students' argumentative essays were obtained from the course lecturer with permission and organized for scoring purposes. The essays were produced as part of the midterm examination in the Argumentative Writing course and required students to compose a complete argumentative essay following a standardized structure consisting of an introduction, supporting arguments, counterargument and rebuttal, and conclusion. Second, a CCL questionnaire adapted from Zamzam et al. (2024) was administered to students through the selected classes' official communication channels. Prior to participation, students were informed about the purpose and procedures of the study and were given the opportunity to participate voluntarily. The questionnaire consisted of 35 Likert-scale items measuring seven CCL domains: focusing, analyzing, reasoning, making inferences, evaluating, drawing implications, and elaborating. Finally, the collected essays were assessed using a standardized analytic rubric covering clarity, coherence, argument strength, use of evidence, and grammar mechanics. Questionnaire responses and writing scores were then matched, screened for completeness, and prepared for statistical analysis.

Data analysis was conducted using descriptive and inferential statistical procedures with the assistance of JASP software. Following data collection, questionnaire responses and writing scores were screened, matched, and organized to ensure completeness and accuracy. Scores for the seven Critical Creative Literacy (CCL) domains were obtained by summing participants' responses to Likert-scale items within each domain, while argumentative writing performance was assessed through a standardized analytic rubric covering clarity, coherence, argument strength, use of evidence, and grammar mechanics. Descriptive statistics, including the mean, standard deviation, minimum score, and maximum score, were calculated to summarize students' CCL skills and writing performance. Subsequently, Pearson Product-Moment Correlation analysis was employed to examine the relationship between each CCL domain and students' argumentative writing performance, as well as the relationship between the overall CCL score and writing performance. Following

common practices in educational research, the aggregated Likert-scale scores were treated as approximately interval data to satisfy the assumptions of Pearson correlation analysis (Boone & Boone, 2012; Carifio & Perla, 2008). The significance level was set at $\alpha = .05$, and correlation strength was interpreted using Cohen's (1988) effect size guidelines to determine the magnitude of the observed relationships.

RESULT AND DISCUSSION

Result

Students' Perceived CCL Skills

Students' perceived Critical Creative Literacy (CCL) skills varied across participants. To obtain the final data set, a questionnaire was distributed to third-semester students who had completed the argumentative writing midterm examination. Initially, 89 students were identified as the target sample; however, only 53 students voluntarily completed the questionnaire. Following data cleaning, three responses were excluded due to a number of reasons: two students had filled out the questionnaire without having submitted the midterm test, and one student didn't provide their full name and only their first name, which shared the same first name as other students in the class. As a result, three participants were excluded, and the data set was reduced to 50 participants.

Students' Writing Score

The argumentative writing scores analyzed in this study were obtained from students' midterm argumentative essays and reassessed using the analytical writing rubric. Based on the writing scores, students' argumentative writing performance ranged from 2.12 to 4.92. The highest writing score was obtained by participant 3F-P2 ($M = 4.92$), while the lowest writing score was obtained by participant 3H-P1 ($M = 2.12$).

Descriptive Statistics

Descriptive statistics were calculated to summarize students' CCL domain scores and argumentative writing performance, including the mean, standard deviation (SD), minimum, and maximum values for each domain and the writing score. Domain scores for each CCL component were calculated by summing the available responses across five Likert-scale items within each domain. The Overall CCL is then obtained by summing the seven domain scores. Students' argumentative writing performance was assessed using an analytic rubric with five criteria (clarity, coherence, argument strength, use of evidence, and grammar mechanics), and a mean writing score was calculated by dividing the total rubric score by 5. The descriptive statistics for each variable were then calculated and are presented in Table 1.

Table 1. Descriptive statistics of CCL domains and argumentative writing performance

Variable	Mean	SD	Min	Max	%	Category
Focusing	15.62	2.97	8	20	78.1	Often
Analyzing	17.78	3.53	10	25	71.12	Often
Reasoning	17.44	2.98	9	24	69.76	Often
Making Inferences	14.3	2.75	6	20	71.5	Often
Evaluating	14.18	2.78	8	20	70.9	Often
Drawing Implications	13.94	2.63	9	20	69.7	Often

Variable	Mean	SD	Min	Max	%	Category
Elaborating	21.7	4.66	9	30	72.33	Often
Overall CCL	114.96	19.54	59	156	71.85	Often
Writing Score (out of 5)	4.27	.61	2.12	4.92	–	High

Table 1 presents the descriptive statistics of the Critical Creative Literacy (CCL) domains and students' argumentative writing performance. To interpret the mean scores, each domain was converted into percentages and categorized based on the predefined criteria. Based on the CEFR-aligned scoring categories, the students' argumentative writing performance generally falls within the intermediate to upper-intermediate levels (B1–B2).

The descriptive results also indicate that all CCL domains fall within the "Often" category, suggesting that students frequently demonstrate proficiency in these skills with minor inconsistencies. Specifically, focusing (78.1%), analyzing (71.12%), reasoning (69.76%), making inferences (71.5%), evaluating (70.9%), drawing implications (69.7%), and elaborating (72.33%) all reflect a relatively consistent level of performance across domains.

The Overall CCL score (71.85%) also falls within the "Often" category, indicating that students generally possess an adequate level of Critical Creative Literacy, although their proficiency has not yet reached a fully consistent or advanced level ("Always"). Meanwhile, the mean writing score ($M = 4.27$, $SD = 0.61$) suggests that students demonstrate relatively high argumentative writing performance.

Correlation Results

Pearson Product-Moment Correlation analysis was performed using JASP statistical software to examine the relationship between each CCL domain score and students' argumentative writing performance. Before analysis, all CCL domain scores and writing performance scores were transferred into JASP as continuous variables. Pearson correlation coefficients (r) were computed for each CCL domain and the overall CCL against the writing score. The results are presented in Table 2.

Table 2. Pearson correlations between CCL domains and argumentative writing performance

CCL Domain	r (Correlation Coefficient)	p (Significance Value)
Focusing	-.263	.065
Analyzing	-.141	.327
Reasoning	-.174	.226
Making Inferences	-.050	.728
Evaluating	-.244	.088
Drawing Implications	-.240	.093
Elaborating	-.176	.221
Overall CCL	-.208	.148

Based on Table 2, none of the CCL domains demonstrated a statistically significant correlation with students' argumentative writing performance, as all p -values exceeded the significance level of .05. In general, they fell within the small effect size range.

Among the seven domains, Focusing Skills produced the highest correlation coefficient ($r = -.263$, $p = .065$), although the relationship remained statistically insignificant. Similarly, the Evaluating domain ($r = -.244$, $p = .088$) and

Drawing Implications domain ($r = -.240$, $p = .093$) showed relatively higher correlation coefficients compared to the other domains, although both remained statistically insignificant. In contrast, the Making Inferences domain produced the weakest relationship ($r = -.050$, $p = .728$). The Overall CCL score also demonstrated a weak negative and statistically insignificant relationship with argumentative writing performance ($r = -.208$, $p = .148$).

All observed correlations fall within the small effect size range. Since none of the correlations reached the significance threshold, the findings indicate that variations in students' CCL domain scores were not significantly associated with variations in their argumentative writing performance.

Therefore, the null hypothesis (H_0), which states that there is no statistically significant correlation between CCL domains and students' argumentative writing performance, is accepted, while the alternative hypothesis (H_1) is rejected.

Discussion

The findings of this study answered two research questions: (1) whether significant relationships exist between the seven Critical Creative Literacy (CCL) domains and students' argumentative writing performance, and (2) which CCL domain demonstrates the strongest relationship with writing performance. Taken together, the results indicate that none of the seven CCL domains were significantly correlated with students' argumentative writing performance. Although all domains produced negative correlation coefficients, the relationships were weak and statistically non-significant. These findings suggest that the relationship between students' perceived CCL competencies and their argumentative writing performance may be more complex than theoretically expected.

Regarding the first research question, the results revealed no statistically significant relationship between any of the CCL domains and students' argumentative writing performance. This finding contrasts with theoretical perspectives that position critical and creative literacy as important components of argumentative writing (Clifton, 2021; Zamzam et al., 2024). However, the absence of significant correlations does not necessarily indicate that CCL skills are irrelevant to writing. Argumentative writing is a multifactorial construct influenced by numerous interacting variables, including language proficiency, grammatical accuracy, vocabulary range, genre familiarity, and prior knowledge (Hyland, 2003; Weigle, 2002). While CCL supports higher-order cognitive processes such as analysis, reasoning, and evaluation, these processes represent only one dimension of effective writing performance. Consequently, the contribution of CCL skills may not be directly observable when writing is assessed through rubrics that simultaneously evaluate linguistic and rhetorical aspects. Another possible explanation concerns the measurement instruments used in this study. CCL skills were assessed through a self-reported questionnaire, whereas writing performance was measured through rubric-based evaluation of students' essays. Previous research suggests that self-perceived competencies do not always correspond to demonstrated performance, which may have contributed to the non-significant findings.

The descriptive findings further support this interpretation. Students generally reported frequent perceived use of Critical Creative Literacy skills across all seven domains, while their argumentative writing performance was also relatively high. Despite these positive descriptive results, the correlation analysis revealed no statistically significant relationships between the variables. This pattern suggests that students' perceived Critical Creative Literacy competencies and their demonstrated writing performance may represent related but distinct dimensions of literacy development, indicating that self-perceptions do not always correspond directly to observable writing performance.

Regarding the second research question, focusing demonstrated the strongest relationship with argumentative writing performance ($r = -.263$, $p = .065$), although the correlation remained weak and statistically non-significant. The focusing domain refers to the ability to identify central issues, establish clear positions, and maintain coherence throughout an argument (Brookfield, 2012; Zamzam et al., 2024). Compared to other domains, focusing is more directly reflected in the organizational features of argumentative essays, particularly the development and maintenance of a clear thesis statement. This may explain why focusing produced the strongest correlation coefficient among the seven domains. However, the negative direction of the relationship and the lack of statistical significance suggest that students' perceived focusing abilities were not consistently reflected in their actual writing performance. Furthermore, the relatively high mean writing score and limited variability among participants may have reduced the sensitivity of the correlation analysis, making it more difficult to detect statistically significant relationships even when conceptual connections exist (Cohen, 1988).

Overall, these findings suggest that Critical Creative Literacy may function as a supporting cognitive framework rather than a direct predictor of argumentative writing performance. While CCL domains are theoretically relevant to the construction of arguments, their contribution may not be immediately observable through correlational analysis alone. The findings highlight the need for further investigation using alternative research designs and assessment approaches to better understand how Critical Creative Literacy is developed and manifested in students' argumentative writing practices.

CONCLUSION

This study examined two aspects of Critical Creative Literacy (CCL) in argumentative writing: the relationship between the seven CCL domains and students' argumentative writing performance, and the identification of the domain with the strongest relationship to writing performance. Using a correlational research design involving third-semester students at the University of Mataram, the study found that none of the seven CCL domains demonstrated a statistically significant relationship with students' argumentative writing performance. Although students generally reported frequent use of CCL skills and achieved relatively high writing scores, these variables were not significantly associated in the correlation analysis.

Regarding the second research question, focusing demonstrated the strongest relationship with argumentative

writing performance among the seven domains. However, the relationship was weak and statistically non-significant. This finding suggests that while focusing skills may be more visibly reflected in the organization and development of argumentative texts than other CCL domains, their contribution was not sufficient to establish a significant relationship with writing performance in the present study.

These findings indicate that the relationship between Critical Creative Literacy and argumentative writing performance may be more complex than theoretically expected. While CCL domains remain conceptually relevant to argumentative writing, their influence may be intertwined with other factors such as language proficiency, writing experience, topic familiarity, and assessment conditions. Accordingly, students' perceived CCL competencies and their demonstrated writing performance should be viewed as related but distinct dimensions of literacy development.

REFERENCES

- Boone, H. N., Jr., & Boone, D. A. (2012). Analyzing Likert data. *Journal of Extension*, 50(2), Article 2TOT2. <https://commons.joe.org/joe/vol50/iss2/48/>
- Brookfield, S. D. (2012). *Teaching for critical thinking: Tools and techniques to help students question their assumptions*. Jossey-Bass.
- Carifio, J., & Perla, R. J. (2008). Resolving the 50-year debate around using and misusing Likert scales. *Medical Education*, 42(12), 1150–1152. <https://doi.org/10.1111/j.1365-2923.2008.03172.x>
- Clifton, G. (2021). Critical-creative literacy and creative writing pedagogy. *University of Toronto Quarterly*, 91(1), 51–66. <https://doi.org/10.3138/utq.91.1.04>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
- Hillocks, G., Jr. (2011). *Teaching argument writing, grades 6–12: Supporting claims with relevant evidence and clear reasoning*. Heinemann.
- Hyland, K. (2003). *Second language writing*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511667251>
- Indah, R. N. (2017). Critical thinking, writing performance and topic familiarity of Indonesian EFL learners. *Journal of Language Teaching and Research*, 8(2), 229–236. <https://doi.org/10.17507/jltr.0802.04>
- Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günnemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., . . . Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274. <https://doi.org/10.1016/j.lindif.2023.102274>
- Rapanta, C., & Macagno, F. (2020). Evaluation and promotion of argumentative reasoning among university students: The case of academic writing. *Revista Lusófona de Educação*, 45, 125–142. <https://doi.org/10.24140/issn.1645-7250.rle45.09>

- Sevinc, Y., Erözcan, İ., & Güler, G. D. (2018). *Critical literacy & critical literacy pedagogy: From theory to practice* [Unpublished manuscript]. Institute of Educational Science.
https://www.academia.edu/43850191/Critical_Literacy_and_Critical_Literacy_Pedagogy_From_Theory_to_Practice
- Singarimbun, M., & Effendi, S. (Eds.). (1989). *Metode penelitian survai* (Rev. ed.). LP3ES.
- Weigle, S. C. (2002). *Assessing writing*. Cambridge University Press.
<https://doi.org/10.1017/CBO9780511732997>
- Zamzam, A., Padmadewi, N. N., Artini, L. P., & Putra, I. N. A. J. (2024). Critical and creative literacy in argumentative writing course: Students' needs. *International Journal of Religion*, 5(10), 1841–1851.
<https://doi.org/10.61707/5svbt350>