

NOKEN model: A critical literacy inquiry framework for mapping and building undergraduate academic essays

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Article Info	Abstract
Keywords: academic essay writing; critical literacy; NOKEN model; reading-writing integration; undergraduate writing Article History Received: 2026-07-11 Reviewed: 2026-07-19 Accepted: 2026-09-01  License: CC-BY-SA	Academic essay writing requires undergraduates to transform reading into coherent, evidence-based, and ethical argumentation. Yet higher education often separates reading, inquiry, drafting, feedback, and revision, limiting students' ability to develop arguments from critically evaluated sources. This developmental study designed and evaluated the NOKEN model, a locally resonant critical literacy inquiry framework for integrated academic reading-writing instruction. NOKEN comprises <i>Navigating</i> critical issues, <i>Organizing</i> ideas and evidence, <i>Knowledge</i>-building through inquiry, <i>Evaluating</i> perspectives and argument plans, and <i>Negotiating</i> academic voice. The study involved two expert validators, three prospective lecturer-users, and 30 students in an academic writing course at Universitas Papua. Following analysis, design, development, implementation, and evaluation stages, data were collected through document analysis, validation sheets, practicality questionnaires, and essay tests. Descriptive statistics, normality and homogeneity tests, the Wilcoxon signed-rank test, and normalized gain analysis were applied. The model achieved high validity ($M = 3.74/4.00$) and practicality ($M = 3.73$). Students' mean scores increased from 78.75 to 87.73, with a normalized gain of 0.42 and a significant difference ($p = .001$). NOKEN appears feasible, practical, and promising, although controlled multi-site studies are needed to verify its effectiveness, transferability, and long-term instructional impact fully.
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INTRODUCTION

Academic literacy in higher education can no longer be reduced to the technical ability to read and write. Undergraduate students are expected to evaluate information, construct knowledge, synthesize evidence, and communicate defensible arguments through appropriate academic genres. These expectations have become increasingly urgent as students encounter abundant digital information, heterogeneous sources, and competing knowledge claims. Reading literacy continues to be positioned as a foundation for educational quality and equity, while recent reviews emphasize that academic literacy involves not only language proficiency but also critical engagement with disciplinary knowledge, identity, institutional expectations, and power relations (Klarare et al., 2022; OECD, 2023). Consequently, writing pedagogy must move beyond requiring students to produce grammatically acceptable texts and support them in examining the credibility, relevance, social meaning, and rhetorical functions of the sources from which academic arguments are developed.

Academic essay writing is among the most demanding forms of university literacy. It requires students to identify a relevant problem, formulate a defensible thesis, select credible sources, evaluate evidence, synthesize multiple perspectives, organize reasoning, anticipate readers, and use academic language appropriately. Recent studies have consistently reported undergraduate difficulties in argument development, thesis formulation, evidence selection, text

organization, coherence, language use, and writing confidence (Alexander et al., 2023; Batubara & Fithriani, 2023; Mallahi, 2024; Nurkamto et al., 2024). These difficulties demonstrate that academic writing problems are not merely linguistic. They are also cognitive, rhetorical, affective, social, and epistemic because students must determine what counts as relevant knowledge, how evidence justifies a claim, how alternative positions should be evaluated, and how academic authority can be negotiated ethically.

Contemporary writing research conceptualizes academic writing as a recursive and metacognitively regulated activity. Writers must repeatedly generate and organize ideas, establish rhetorical goals, integrate sources, monitor textual development, review arguments, and revise language and organization. Metacognitive regulation and self-regulated writing strategies are therefore closely related to critical thinking and academic writing performance (Teng & Ying, 2023; Teng & Yue, 2023). Without adequate strategic support, students may produce essays that contain substantial information but lack a focused, coherent, and defensible argument. Recent research on undergraduate argumentation similarly indicates that students require explicit guidance in distinguishing claims from supporting evidence, comparing positions, developing warrants, and addressing counterarguments (Alexander et al., 2023; Mallahi, 2024).

Academic writing is also a socially situated practice. Students need to understand how texts are valued, how sources are used, how authority is negotiated, and how expectations vary across genres, courses, and academic communities. Recent research on academic literacy highlights the importance of embedding literacy development within disciplinary curricula rather than treating writing as a set of generic and context-free skills (Klarare et al., 2022). Studies of academic writing support also show that productive writing development emerges through interactions among students, teachers, peers, texts, institutional expectations, and learning environments (Jusslin & Hilli, 2024). Learning to write an academic essay therefore involves participating in a scholarly conversation rather than merely completing an individual language assignment.

One productive response to these challenges is to reconnect reading and writing instruction. Reading provides the conceptual resources, evidence, disciplinary vocabulary, and rhetorical models required for writing, whereas writing requires students to select, evaluate, transform, and reorganize what they have read into a purposeful and accountable text. Recent empirical research confirms the interdependence of academic reading and writing proficiency and indicates that weaknesses in one area may constrain performance in the other (Phyo et al., 2024). Academic literacy instruction should therefore integrate source reading, information evaluation, argument formation, drafting, and revision instead of teaching essay writing as a final product detached from the processes through which knowledge is acquired and interpreted.

Critical literacy provides an important foundation for strengthening this integration. It positions students not as passive recipients of information but as active readers who examine authorial positions, assumptions, credibility, bias, evidence, power relations, social consequences, and marginalized alternatives. A systematic review of critical reading in higher education demonstrates that critical reading is closely related to critical thinking, source evaluation, reasoned judgment, and the ability to construct responses to complex texts (Van et al., 2022). Recent critical literacy research further shows that guided engagement with socially situated texts can help students question dominant representations, consider alternative perspectives, and develop more critically informed written responses (Balıkcıoğlu Akkuş & Uysal, 2024).

Critical literacy is especially relevant to academic essay writing because weak essays often result from the accumulation of information without adequate evaluation of its quality, relevance, or implications. Students need to assess evidence, distinguish claims from assumptions, recognize limitations, compare competing explanations, and formulate justified conclusions. A recent needs analysis in higher education found that students considered the abilities to acquire, evaluate, and synthesize information essential for critical writing but continued to experience difficulties in critical analysis and conclusion development (Nugroho et al., 2024). Critical literacy can therefore serve as the entry point for academic argument by helping students identify meaningful issues, formulate inquiry questions, assess knowledge claims, and establish a defensible position before drafting.

Inquiry-based learning complements critical literacy by providing an instructional structure through which critical reading can be transformed into academic writing. Inquiry

organizes learning around problem formulation, investigation, evidence evaluation, interpretation, discussion, and reflection. Recent systematic evidence indicates that problem- and inquiry-oriented learning environments can support higher-order and critical-analytic thinking when learning activities are supported by explicit guidance, appropriate tasks, and opportunities for reflection (Loyens et al., 2023). In higher education writing contexts, inquiry-based practices have also been associated with opportunities for students to investigate problems, engage with sources, organize findings, and develop academic texts from evidence rather than unsupported opinion (Tambak et al., 2023).

Scaffolding is essential because students who are still developing academic literacy may not automatically transform inquiry findings into coherent arguments. They need support in formulating researchable questions, identifying appropriate sources, assessing evidence, connecting ideas, planning arguments, and monitoring their writing decisions. Studies of argumentative writing show that modeling, explicit explanation, guided practice, and structured support are particularly important when students are expected to construct claims, evidence, warrants, and counterarguments (Alexander et al., 2023; Mallahi, 2024). An integrated academic reading-writing model should therefore provide a coherent sequence that links questioning, critical reading, source evaluation, knowledge construction, argument planning, drafting, feedback, and revision.

Feedback and revision are equally important in this sequence. Students often require external perspectives to identify weaknesses in argument content, evidence use, organization, coherence, language, and mechanics. A recent meta-analysis confirms that feedback can positively influence writing development across first-, second-, and foreign-language contexts, although its effects depend on feedback focus, delivery, learner characteristics, and opportunities for revision (Scherer et al., 2024). A systematic review of peer-feedback practices in higher education similarly highlights the importance of clear criteria, feedback training, structured interaction, and opportunities to use feedback in subsequent revisions (Gao et al., 2024). Process-genre research also indicates that the integration of teacher feedback, peer feedback, and technology can strengthen students' engagement with drafting and revision (Peungcharoenkun & Waluyo, 2023).

Writing development further depends on reflection and self-regulation. Students need to establish writing goals, select strategies, monitor progress, evaluate the quality of their texts, and determine how feedback should inform revision. Research demonstrates that metacognitive writing strategies and critical thinking jointly contribute to academic writing performance (Teng & Yue, 2023). Self-regulated writing strategies and self-efficacy also influence how students respond to task complexity and manage the demands of academic writing (Teng & Ying, 2023). Reflection should therefore be incorporated into writing instruction to help students examine how their reading choices, evidence evaluation, argument structures, and revision decisions affect the quality of their essays.

Process-genre and technology-supported approaches have made important contributions to academic writing pedagogy by emphasizing genre awareness, modeling, planning, drafting, feedback, revision, and learner engagement. Recent studies indicate that process-genre instruction can enhance both writing performance and student engagement when genre knowledge is integrated with recursive writing processes (Rahimi & Zhang, 2022). The combined use of process-genre pedagogy, feedback, and digital technology can also provide students with more systematic opportunities to analyze models, produce drafts, exchange feedback, and revise their writing (Peungcharoenkun & Waluyo, 2023). Nevertheless, such approaches do not always position critical literacy and inquiry as the initial mechanisms through which students identify problems, interrogate sources, formulate questions, and develop a thesis.

In many academic writing classrooms, reading, critical inquiry, argument planning, drafting, feedback, and revision continue to be treated as separate activities. This fragmentation may limit students' opportunities to transform critically evaluated reading into coherent, evidence-based, and ethically responsible argumentation. Although recent scholarship has examined academic literacy, critical reading, inquiry-based learning, argumentation, process-genre instruction, peer feedback, and self-regulated writing, an operational model that explicitly integrates these components into a single instructional syntax for undergraduate academic essay writing remains necessary.

The NOKEN model was developed to address this need by treating reading, inquiry, argumentation, and writing as a unified academic literacy cycle. NOKEN refers to *Navigating* critical issues, *Organizing* ideas and evidence, *Knowledge*-building through inquiry, *Evaluating* perspectives and argument plans, and *Negotiating* academic voice. The first stage guides students to identify critical issues, formulate inquiry questions, and examine claims, evidence, assumptions, bias, gaps, and potential counterarguments. The second stage supports students in organizing ideas, sources, and evidence according to their relevance to an emerging thesis. The third stage facilitates knowledge-building through inquiry, reflective discussion, and collaborative interpretation. The fourth stage requires students to evaluate competing perspectives and develop an explicit argument plan. The final stage supports the negotiation of academic voice through drafting, source integration, peer review, lecturer feedback, revision, and reflection. This pedagogical mechanism is summarized in Figure 1.

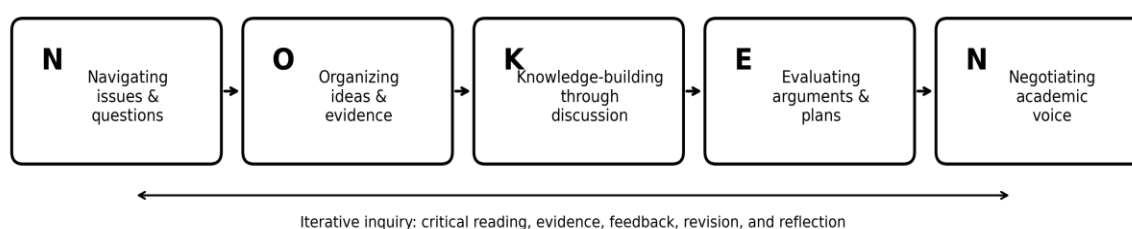


Figure 1. Pedagogical mechanism of the NOKEN model

In this model, the term NOKEN functions as a locally resonant metaphor for weaving, organizing, carrying, and sharing knowledge. It represents the process through which students gather diverse ideas and evidence, critically examine their relationships, weave them into a structured argument, and communicate that argument through an academically accountable text. The metaphor is therefore not merely a cultural label but a pedagogical representation of knowledge construction through selection, connection, negotiation, and responsibility.

The pedagogical mechanism of NOKEN combines several complementary principles. Recent writing research explains the importance of metacognitive planning, monitoring, evaluation, and revision (Teng & Ying, 2023; Teng & Yue, 2023). Argumentation research highlights the need to connect claims, evidence, reasoning, and counterarguments (Alexander et al., 2023; Mallahi, 2024). Academic literacy research situates writing within disciplinary and institutional contexts (Jusslin & Hilli, 2024; Klarare et al., 2022). Critical literacy supports the interrogation of texts and knowledge claims (Balıkcıoğlu Akkuş & Uysal, 2024; Van et al., 2022), while inquiry-based learning organizes investigation and collaborative knowledge construction (Loyens et al., 2023; Tambak et al., 2023). Feedback supports dialogic revision (Gao et al., 2024; Scherer et al., 2024), and self-regulated learning strengthens monitoring and reflection. By integrating these principles, NOKEN is intended to help students produce more coherent academic essays while becoming more critical, reflective, and responsible participants in academic discourse.

The present study aimed to develop and evaluate the NOKEN model for integrated academic reading-writing instruction in higher education. It was guided by four research questions: (1) What is the prototype syntax of the NOKEN model? (2) How feasible is the NOKEN model according to expert validation? (3) How practical is the NOKEN model according to prospective lecturer-users? and (4) What preliminary evidence indicates that NOKEN can improve undergraduate students' academic essay writing performance?

METHOD

This study employed a research and development design comprising analysis, design, development, implementation, and evaluation stages, informed by educational design research and the ADDIE instructional design framework. Educational design research supports the iterative development and evaluation of theoretically grounded solutions to practical educational problems, whereas ADDIE provides a systematic structure for analyzing needs, designing and developing interventions, implementing products, and evaluating their quality (McKenney & Reeves, 2025; Spatioti et al., 2022). The study was conducted in the Indonesian Language

Education Study Program at Universitas Papua and involved two expert validators, three prospective lecturer-users, and 30 undergraduate students enrolled in the Scientific/Academic Writing course. The analysis stage examined the curriculum, teaching materials, assignments, assessment practices, and student needs; the design and development stages produced, validated, and revised the NOKEN model and its supporting materials; and the implementation stage piloted the model using a one-group pretest–posttest design (O_1 – X – O_2). This design permits the examination of within-group change but remains vulnerable to threats to internal validity because it does not include a comparison group (Reichardt et al., 2023). During the intervention, students completed five stages: navigating critical issues, organizing ideas and evidence, building knowledge through inquiry, evaluating perspectives and argument plans, and negotiating academic voice through drafting, feedback, revision, editing, and reflection.

Qualitative data were obtained from curriculum documents, teaching materials, student assignments, and written feedback from validators and lecturer-users, whereas quantitative data were collected through four-point expert-validation sheets, lecturer-practicality questionnaires, and pretest–posttest academic essay writing tests. Essays were assessed analytically in terms of content, organization, vocabulary, language use, and mechanics, enabling writing performance to be examined across distinct dimensions rather than through a single holistic judgment (Phuong et al., 2023). Qualitative data were analyzed thematically by identifying and organizing recurring patterns related to instructional needs, theoretical consistency, implementation requirements, and recommendations for model revision (Braun & Clarke, 2022). Validation and practicality scores were analyzed descriptively using component-level and overall means, while student writing scores were summarized using the mean, standard deviation, median, minimum, and maximum. Normality was examined for the pretest–posttest difference scores using the Shapiro–Wilk test. Because the difference scores did not meet the normality assumption, the Wilcoxon signed-rank test was used to compare the two related measurements (Miller, 2023). Levene’s test was not conducted because the study involved one paired group rather than independent groups requiring a homogeneity-of-variance assessment. Normalized gain was calculated descriptively using a maximum score of 100 to indicate the proportion of possible improvement achieved by the students (Sirianansopa, 2024). Because the pilot did not include a control group, the findings were interpreted as preliminary evidence of feasibility, practicality, and pedagogical promise rather than definitive evidence of causal effectiveness (Reichardt et al., 2023).

RESULTS

Needs analysis

The curriculum analysis indicated that the Scientific/Academic Writing course is offered in the fourth semester with two credits and is preceded by a general writing skills course. However, reading was not positioned as a direct prerequisite, even though academic writing requires students to locate, evaluate, and synthesize sources. This gap suggested the need for a model that explicitly connects critical reading with writing development.

Classroom and document analysis showed that learning activities were dominated by explanation, discussion, presentation, and final-product assessment. This approach introduced theoretical concepts but provided limited guidance for the staged process of developing an academic essay. Student writing tasks showed difficulties in thesis focus, source use, synthesis, rhetorical organization, citation practice, and mechanics. These findings informed the design of NOKEN as a model that provides an explicit sequence from critical reading to academic voice negotiation.

Prototype of the NOKEN model

The NOKEN model consists of seven major components: orientation and objectives, assumptions, syntax, reaction principles, social system, support system, and instructional impact. Its core feature is the integration of critical reading of academic and social texts with the production of academic essays. Table 1 presents the operational syntax of the model.

Table 1. NOKEN syntax and learning activities

Stage	NOKEN syntax	Core learning activity
1.	Navigating critical issues and inquiry questions	Students select relevant texts and identify issues, claims, evidence, assumptions, bias, gaps, and critical questions.
2.	Organizing ideas and evidence	Students map reading results, categorize sources, identify relationships among concepts, and organize evidence for potential claims.
3.	Knowledge-building through reflective discussion	Students discuss textual meanings, social implications, authorial positions, and alternative perspectives to build shared understanding.
4.	Evaluating perspectives and argument plans	Students formulate provisional positions, tentative thesis statements, warrants, counterarguments, and essay outlines based on evaluated evidence.
5.	Negotiating academic voice through drafting, peer review, revision, and reflection	Students draft academic essays, integrate sources, strengthen arguments, receive peer and lecturer feedback, revise content and language, edit mechanics, and reflect on their writing process.

Expert validation

Expert validation covered theoretical support, orientation and objectives, reaction principles, syntax, social system, support system, instructional impact, learning implementation, and language. Most components were rated as highly feasible. The overall mean score was 3.74 out of 4.00, indicating that the model was feasible for classroom piloting.

Table 2. Expert validation results

Component	Mean	Category
Theoretical support for model development	3.80	Highly feasible
Orientation and objectives	3.75	Highly feasible
Reaction principles	3.00	Feasible
Syntax	3.88	Highly feasible
Social system	3.50	Highly feasible
Support system	4.00	Highly feasible
Instructional impact	4.00	Highly feasible
Learning implementation	4.00	Highly feasible
Language	3.75	Highly feasible
Overall mean	3.74	Highly feasible

Practicality evaluation by prospective lecturer-users

Three prospective lecturer-users evaluated the practicality of the model. The mean practicality score was 3.73, indicating a very good category. Lecturer feedback was mainly minor and concerned the visual layout of the guidebook, cover simplification, and the need for a printed version. This result suggests that the model was not only conceptually feasible but also understandable to potential classroom users.

Table 3. Practicality evaluation results

No.	Indicator	Mean	Category
1.	The model helps lecturers teach academic essay writing	3.67	Very helpful
2.	The model helps lecturers design academic essay writing instruction	4.00	Very helpful
3.	The model is appropriate for academic essay writing instruction	3.67	Very appropriate
4.	The guidebook font size and type are readable	4.00	Very clear
5.	The instructional stages are clear	3.67	Very clear

No.	Indicator	Mean	Category
6.	The stages in the guidebook are easy to understand	3.33	Very easy
7.	The guidebook explanation is clear	4.00	Very clear
8.	Approaches, strategies, and methods align with the model	3.67	Very appropriate
9.	The evaluation model is clear	4.00	Very clear
10.	The evaluation model is appropriate for academic essay writing	3.33	Very appropriate
Overall mean		3.73	Very good

Preliminary effectiveness evidence

Students' academic essay writing scores improved across all rubric dimensions. The largest improvement occurred in organization (+2.83), followed by content (+2.60), vocabulary (+1.58), language use (+1.30), and mechanics (+0.67). The total mean score increased from 78.75 to 87.73, with a mean gain of 8.98 points and a normalized gain of 0.42.

Table 4. Pretest and posttest academic essay writing scores

Aspect	Pretest mean	Posttest mean	Gain
Content	24.47	27.07	+2.60
Organization	13.90	16.73	+2.83
Vocabulary	14.05	15.63	+1.58
Language use	19.03	20.33	+1.30
Mechanics	7.30	7.97	+0.67
Total score	78.75	87.73	+8.98

The normality test indicated that the pretest scores were normally distributed (Kolmogorov-Smirnov $p = .200$), whereas the posttest scores were not normally distributed ($p = .001$). Levene's test indicated homogeneous variance ($p = .751$). Therefore, the paired difference was tested using the Wilcoxon signed-rank test. The result showed a significant pretest-posttest difference ($p = .001$).

Table 5. Statistical test summary

Test	Result	Interpretation
Pretest normality	Kolmogorov-Smirnov $p = .200$	Normally distributed
Posttest normality	Kolmogorov-Smirnov $p = .001$	Not normally distributed
Homogeneity	Levene = 0.621; $p = .751$	Homogeneous variance
Paired difference	Wilcoxon signed-rank $p = .001$	Significant pretest-posttest difference
Learning gain	Normalized gain = 0.42	Moderate improvement

DISCUSSION

The findings indicate that the NOKEN model meets three preliminary criteria for instructional product development: feasibility, practicality, and pedagogical promise. Expert validation suggests that the model possesses a coherent conceptual and operational structure, while the lecturer-user evaluation indicates that prospective users can understand its syntax and perceive it as applicable to classroom instruction. These findings are important because an instructional model must be theoretically grounded, contextually relevant, and practically usable. From an educational design research perspective, NOKEN has reached a formative stage in which prototype quality and local usefulness can be examined before the model proceeds to comparative, multi-site, and longer-term effectiveness testing (McKenney & Reeves, 2025).

The most distinctive contribution of NOKEN lies in its explicit integration of critical reading and academic writing. The first three stages require students to navigate critical issues, organize ideas and evidence, and build knowledge through inquiry and reflective discussion before beginning the drafting process. This sequence addresses a common weakness in academic

writing instruction, in which students may be expected to produce essays without adequate guidance in reading, evaluating, integrating, and transforming source materials. Recent evidence confirms that academic reading and writing are interdependent competencies, while metacognitive regulation supports students in selecting, monitoring, and evaluating the strategies needed to construct academic texts (Phyo et al., 2024; Teng & Yue, 2023).

The stage of evaluating perspectives and argument plans is pedagogically significant because it bridges source engagement and text production. Undergraduate students frequently experience difficulty transforming collected information into focused and defensible academic arguments. By requiring students to formulate a provisional position, identify supporting evidence, anticipate counterarguments, and test the coherence of their reasoning before drafting, NOKEN encourages them to understand an academic essay as an evidence-based argument rather than a compilation of quotations or summaries. This mechanism responds to recent findings concerning students' difficulties in constructing claims, using evidence, organizing arguments, understanding argumentative structures, and managing anxiety or apprehension in academic writing (Alexander et al., 2023; Mallahi, 2024; Nurkamto et al., 2024).

The largest improvement was found in essay organization. This pattern suggests that the stages of organizing ideas and evidence, evaluating perspectives and argument plans, and negotiating academic voice may have supported students in arranging claims, evidence, and paragraph progression more coherently. This finding is particularly relevant to recent Indonesian research emphasizing the relationship between argumentative writing, critical thinking, and rhetorical structure (Dewi et al., 2026). It is also consistent with process-genre research, which emphasizes modeling, planning, genre awareness, drafting, feedback, and revision as interconnected conditions for writing development (Peungcharoenkun & Waluyo, 2023; Rahimi & Zhang, 2022). Research on structured peer-feedback modules similarly demonstrates that guided planning, feedback provision, and revision can improve the quality of undergraduate and postgraduate argumentative essays (Noroozi et al., 2023). NOKEN extends these orientations by positioning critical inquiry and source evaluation before formal argument planning and drafting.

The statistically significant Wilcoxon result and moderate normalized gain provide preliminary support for the pedagogical promise of NOKEN. Nevertheless, the results must be interpreted cautiously because the implementation employed a one-group pretest–posttest design without a control or comparison group. Consequently, the observed improvement cannot be attributed exclusively to the NOKEN model because it may also have been influenced by maturation, regular course exposure, lecturer support, repeated-task familiarity, or other uncontrolled conditions. Methodological literature emphasizes that the absence of comparison groups limits the strength of causal inference, while systematic reviews have identified the lack of appropriate control conditions as a recurring problem in evaluating student-centered instructional interventions (Loyens et al., 2023; Reichardt et al., 2023). The appropriate conclusion is therefore that participation in NOKEN instruction was associated with improved academic essay writing performance during this developmental pilot, rather than that NOKEN definitively caused the improvement or outperformed alternative instructional models.

The relatively smaller improvement in mechanics suggests that NOKEN may offer stronger support for content, organization, source use, and argument development than for surface-level accuracy. Citation conventions, spelling, punctuation, syntactic accuracy, and formatting generally require repeated practice, focused corrective feedback, and explicit editing instruction. A recent meta-analysis found that feedback effects differ according to whether feedback targets surface-level or deeper dimensions of writing and according to the feedback source and learner population (Scherer et al., 2024). Future implementations of NOKEN should therefore incorporate focused mini-lessons on citation style, paraphrasing, sentence construction, punctuation, and reference management. Digital or artificial intelligence-based feedback may also be used as a supplementary resource, but it should not replace lecturer guidance, peer dialogue, source verification, or students' critical judgment. Recent comparisons indicate that artificial intelligence and peer-generated feedback may provide different and potentially complementary forms of information rather than functioning as interchangeable sources (Banihashem et al., 2024).

The collaborative components of NOKEN further strengthen its pedagogical value. Reflective discussion and peer review provide social spaces in which students can test ideas,

compare interpretations, recognize weaknesses in reasoning, receive responses from readers, and revise their arguments. Recent research shows that well-structured peer-feedback activities can support cognitive, behavioral, and affective learning outcomes, including knowledge construction, analysis, communication, teamwork, confidence, and engagement (Kerman et al., 2024). The effectiveness of peer feedback, however, depends on clear criteria, appropriate scaffolding, students' feedback literacy, and opportunities to use the feedback in revision. Structured peer-feedback modules have been shown to improve argumentative essay quality when students are explicitly guided in providing feedback and revising their original texts (Noroozi et al., 2023). In NOKEN, collaboration is therefore not an optional supplementary activity but a central component of the model's social system for moving from individual reading toward accountable academic production.

From a theoretical perspective, NOKEN contributes to academic literacy pedagogy by connecting receptive, critical, dialogic, and productive literacy processes within a single instructional cycle. Reading is treated as inquiry, inquiry as knowledge and argument construction, and writing as a revisable response to textual and social evidence. From a practical perspective, the model provides lecturers with an operational syntax that may be adapted for academic essay writing, scientific writing, literature reviews, and research proposal preparation. From a methodological perspective, the study illustrates the value of examining conceptual feasibility, user practicality, and preliminary learning outcomes before conducting broader comparative trials. Nevertheless, the model's transferability and comparative effectiveness should be investigated through controlled, longitudinal, and multi-site studies involving more diverse students, lecturers, courses, and institutional contexts (McKenney & Reeves, 2025).

This study has several limitations that should be made explicit for international journal submission. First, the pilot used a one-group pretest-posttest design; therefore, the findings cannot establish strong causal inference. Future studies should use quasi-experimental or randomized controlled designs with comparison groups. Second, the sample was limited to 30 students in one study program and one university. Replication across universities, disciplines, and writing genres is necessary to examine transferability. Third, the study measured writing products more directly than the underlying processes of critical reading, peer feedback, and revision. Future research should develop and validate separate instruments for critical reading quality, argument mapping, feedback quality, and revision behavior.

Fourth, the current report does not include inter-rater reliability for essay scoring. Future submissions should report rater training, scoring procedures, reliability coefficients, and confidence intervals to strengthen assessment credibility. Fifth, the model was implemented in a course context that may have its own lecturer effects, assessment expectations, and institutional culture. Future studies should examine implementation fidelity, lecturer mediation, and student engagement across different contexts. Finally, future research should examine whether NOKEN influences not only writing scores but also students' critical reading dispositions, argument quality, citation ethics, and self-regulated writing behavior.

CONCLUSION

This study developed the NOKEN model as a critical literacy inquiry framework for mapping and building undergraduate students' academic arguments. NOKEN refers to Navigating critical issues, organizing ideas and evidence, Knowledge-building through inquiry, evaluating perspectives and argument plans, and negotiating academic voice. The model integrates critical reading, evidence organization, reflective discussion, argument evaluation, drafting, peer review, revision, and reflection. Expert validation showed that the model was highly feasible, and prospective lecturer-users rated it as highly practical. The developmental pilot indicated that students' academic essay writing scores improved from pretest to posttest, with a moderate normalized gain and a significant Wilcoxon result.

These findings suggest that NOKEN is a promising model for supporting undergraduate academic essay writing, particularly in strengthening the movement from critical reading to evidence-based argument and accountable academic voice. The study contributes an operational syntax for connecting critical literacy, inquiry-based learning, argument mapping, process

writing, and reflective revision. Nevertheless, the model should be tested through stronger experimental designs, larger and more diverse samples, and more detailed measures of critical reading, feedback, and revision processes before broad causal claims are made.

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Author Contributions

Akhiruddin designed the study and collected the data. Andi Karman analyzed the data and drafted the manuscript; both authors reviewed and approved the final version.

Competing Interests

The authors declare no competing interests.

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