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Developing the Anchor Eyes Model: An AI-Assisted Pedagogical Framework for Creative Poetry Writing in Secondary Education

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ABSTRACT

The rapid advancement of artificial intelligence (AI) has created new possibilities for writing instruction; however, its pedagogical integration into creative genres such as poetry remains underexplored. This study employed a research and development (R&D) design guided by the ADDIE instructional model to develop and examine the feasibility of the Anchor Eyes Model, an AI-assisted pedagogical framework for creative poetry writing in secondary education. The model was implemented with 96 secondary school students from three schools in East Java, Indonesia, within formal Indonesian language classes. Data were collected through performance-based poetry writing tasks, analytic scoring rubrics, student questionnaires, classroom observations, and semi-structured interviews. Quantitative data were analyzed using descriptive statistics to examine performance gains, while qualitative data were analyzed through thematic content analysis to capture students' creative processes and perceptions of AI-assisted learning. The findings indicate meaningful descriptive improvements in students' poetry writing performance, particularly in idea development, diction, and imagery, alongside positive learner perceptions of AI as a supportive creative scaffold rather than a substitute for original thinking. Qualitative evidence further revealed enhanced engagement, confidence, and reflective awareness during the creative writing process. These findings suggest that the Anchor Eyes Model offers a pedagogically grounded and ethically oriented approach to integrating AI into creative writing instruction. The study provides initial empirical evidence to inform human-centered AI pedagogy and supports the inclusion of structured AI-assisted models in secondary literacy curricula.

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1. INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) has significantly reshaped educational practices across disciplines, particularly in language and literacy education. Recent developments in AI-driven technologies—such as natural language processing systems, generative text models, and intelligent feedback platforms—have expanded the possibilities for supporting writing instruction

through personalized feedback, idea generation, and language development (Evmenova et al., 2020; Imran & Almusharraf, 2023). While these studies demonstrate the instructional potential of AI, contemporary scholarship increasingly emphasizes that the educational value of AI lies not merely in technological capability but in its pedagogical orchestration within theoretically grounded learning frameworks.

From a theoretical standpoint, this study is informed by constructivist and transformative learning perspectives, which conceptualize learning as an active, reflective, and socially mediated process. Within these frameworks, tools function as mediational means that support learners' meaning-making and cognitive development rather than as substitutes for human thinking (Tlili, 2023). Recent discussions on AI in education similarly highlight the importance of human-centered and ethical AI integration, arguing that AI should augment learners' intellectual agency while preserving creativity, critical thinking, and reflective engagement (Song & Song, 2023; Richardson & Clesham, 2021).

Within the domain of writing instruction, AI-assisted learning environments have been shown to stimulate divergent thinking, enrich lexical resources, and support idea organization when integrated with appropriate pedagogical design (Baig & Yadegaridehkordi, 2024; Deng et al., 2025). However, the majority of existing studies focus on functional or expository genres, such as academic essays and narratives, where learning outcomes are often measured in terms of coherence, accuracy, or productivity (Wang, 2020; Zhang, 2023). As a result, creative writing genres—particularly poetry—remain comparatively underexplored, especially at the secondary education level.

Poetry writing occupies a distinctive position in language education due to its emphasis on imagination, emotional expression, symbolic language, and aesthetic sensitivity. In secondary education, poetry writing is expected to foster creative thinking, linguistic awareness, and reflective capacity. Nevertheless, conventional approaches to teaching poetry often remain teacher-centered and technique-oriented, emphasizing formal poetic elements at the expense of students' creative exploration and intrinsic motivation (Evmenova et al., 2024; Mekheimer, 2025). Empirical observations indicate that secondary students frequently struggle with idea generation, diction selection, figurative language use, and sustained creative engagement, leading to low confidence and limited creative output.

At the same time, the growing availability of AI tools has generated pedagogical tensions. While AI offers opportunities to support creativity, teachers express concerns about the uncontrolled or instrumental use of AI, particularly the risk of diminishing originality, critical thinking, and reflective learning. Consequently, AI is often either underutilized or applied in fragmented ways without a coherent instructional structure. This situation reflects a broader limitation in the literature: most AI-assisted writing studies adopt a tool-based orientation, examining the effectiveness of specific applications rather than proposing model-based pedagogical frameworks that systematically integrate AI into the learning process (Zhang, 2023; Zahabiyyah & Septiana, 2024).

Several recent studies illustrate this limitation. Wang (2020) demonstrated improvements in coherence and vocabulary through AI-supported narrative writing but did not address creative or poetic dimensions. Zhang (2023) reported enhanced engagement in AI-supported blended learning environments, yet the study did not propose a specific pedagogical model for creative writing. More recently, Zahabiyyah and Septiana (2024) found that AI feedback increased students' motivation and productivity in poetry writing; however, AI use remained largely instrumental and weakly connected to a structured creative process. Collectively, these studies suggest that while AI can support writing development, there remains a significant gap in theoretically grounded, model-based approaches that conceptualize AI as an integral component of creative learning rather than as an isolated technological tool.

This gap is particularly salient in secondary poetry instruction, where creativity, imagination, and emotional engagement are central to learning outcomes. Without a coherent pedagogical framework, AI-assisted poetry writing risks becoming either mechanistic or pedagogically superficial, reinforcing concerns about overreliance and ethical misuse (Song & Song, 2023). Addressing this challenge requires

instructional models that integrate AI within a structured creative process while foregrounding learner agency and ethical awareness.

In response to these limitations, this study proposes the Anchor Eyes Model, an AI-assisted pedagogical framework that conceptualizes creative poetry writing as a central transformative experience supported by four interconnected dimensions: idea generation, media utilization, instructional methodology, and reflective creative processes. Drawing on constructivist mediation and transformative learning principles (Tlili, 2023), the model positions AI as a supportive anchor that stabilizes and guides students' creative exploration without constraining imagination. Unlike tool-based approaches, the Anchor Eyes Model offers a model-driven integration of AI, addressing both cognitive and affective dimensions of poetry writing while responding to ethical concerns surrounding AI use in education.

Accordingly, this study aims to develop and evaluate the Anchor Eyes Model as an AI-assisted pedagogical framework for creative poetry writing in secondary education. The specific objectives of the study are: To design a theoretically grounded and ethically oriented AI-assisted pedagogical model for creative poetry writing based on constructivist and transformative learning principles. To examine the pedagogical feasibility and descriptive effectiveness of the Anchor Eyes Model in supporting secondary students' poetry writing performance. To explore students' perceptions and creative experiences when engaging with AI-assisted poetry writing through a structured learning model.

2. METHODS

This study employed a Research and Development (R&D) approach with the primary objective of designing, developing, and evaluating an AI-assisted pedagogical framework for creative poetry writing in secondary education. The R&D approach was selected because the study focused on model development, pedagogical feasibility, and contextual implementation, rather than on testing causal effects between experimental and control groups. In instructional design research, the absence of a control group is considered methodologically appropriate for early-stage R&D studies, which emphasize iterative refinement, validation, and preliminary evidence of effectiveness in authentic learning contexts rather than experimental comparison. To guide the development process systematically, this study adopted the ADDIE instructional design model, encompassing the stages of Analysis, Design, Development, Implementation, and Evaluation.

2.1 Research Context and Participants

The study was conducted in three secondary schools in Sumenep Regency, East Java, Indonesia: SMP Islam Al-Atrawiyah, SMP Al-Ijtihad, and SMP Negeri 2 Sumenep. These schools were purposively selected based on the availability of digital learning infrastructure, prior experience with technology-assisted instruction, and institutional readiness to participate in pedagogical innovation research. The participants consisted of 96 secondary school students enrolled in Indonesian language classes, with each school contributing one intact class of approximately 30–32 students. Purposive cluster sampling was employed to preserve natural classroom dynamics and instructional authenticity, which are central considerations in R&D-based educational research.

2.2 Duration and Implementation Procedures

The implementation of the Anchor Eyes Model was conducted over a six-week instructional period, comprising 12 classroom sessions (two sessions per week). Each session lasted approximately 80 minutes and was embedded within the regular poetry-writing unit of the Indonesian language curriculum. This duration allowed students to engage in iterative cycles of idea generation, drafting, reflection, peer discussion, and revision while remaining feasible within formal school schedules. Throughout the implementation stage, teachers facilitated learning activities using the Anchor Eyes instructional syntax, with ongoing formative observation to monitor student engagement and instructional flow.

2.3 AI Tools and Pedagogical Use

AI tools were integrated as guided cognitive and creative supports, rather than as autonomous text generators. To ensure ethical and pedagogically meaningful use, AI integration was structured into three functional categories: Generative prompting, used to stimulate poetic ideas, themes, and perspectives through open-ended prompts. Lexical and imagery support, used to assist students in exploring diction, synonyms, figurative expressions, and sensory language relevant to poetry writing. Reflective scaffolding, used to prompt students' metacognitive reflection on tone, meaning, imagery, and aesthetic choices during the revision process. Students were explicitly instructed not to copy or submit AI-generated text verbatim. All AI outputs functioned as stimuli for exploration and reflection, and all final poetry products were required to represent students' original work under teacher supervision.

2.4 Research Instruments and Data Collection

Multiple instruments were employed to capture both students' creative writing outcomes and their learning processes during the implementation of the Anchor Eyes Model. These instruments included performance-based poetry writing tasks, an analytic scoring rubric, student questionnaires, classroom observation sheets, semi-structured interview guides, and document analysis frameworks. An overview of the research instruments and their analytical purposes is provided in Table 1.

Table 1. Research Instruments and Data Functions

Instrument Type	Form	Data Collected	Purpose
Observation Sheet	Structured checklist	Student engagement, creative behavior, interaction patterns	To examine learning process dynamics
Poetry Writing Task	Performance-based test	Students' poetry texts	To measure creative writing outcomes
Poetry Writing Rubric	Analytic scoring rubric	Creativity, diction, imagery, coherence	To assess writing quality objectively
Student Questionnaire	Likert-scale items	Perceptions of AI-assisted learning	To capture learner responses
Interview Guide	Semi-structured	Teacher and student reflections	To explore experiences and challenges
Document Analysis Sheet	Content analysis framework	Pre- and post-intervention poems	To identify qualitative improvements

2.5 Instrument Validity and Reliability

To ensure content validity, the poetry writing rubric and instructional materials were reviewed by experts in language education, instructional design, and educational technology. Revisions were made based on expert feedback to enhance clarity, construct representation, and alignment with the learning objectives of creative poetry writing. Inter-rater reliability was established by having two trained raters independently score a subset of student poems. The resulting level of agreement indicated acceptable consistency for educational assessment purposes. Questionnaire items were reviewed for face validity and clarity prior to administration.

2.6 Data Analysis

Quantitative data from poetry writing scores and student questionnaires were analyzed using descriptive statistics, including mean scores, gain scores, percentages, and standard deviations, to examine trends in students' creative writing performance following the implementation of the Anchor Eyes Model. Qualitative data from classroom observations, interviews, and document analysis were analyzed using thematic content analysis. Data were coded inductively to identify recurring themes

related to creativity development, AI usage patterns, student engagement, and learning experiences. Data triangulation and member checking were employed to enhance credibility and trustworthiness.

2.7 Ethical Considerations

This study adhered to established ethical standards for educational research. Informed consent was obtained from school administrators, teachers, students, and students' parents or guardians prior to data collection. Participation was voluntary, and students were informed of their right to withdraw at any time without academic consequences. All collected data were anonymized to ensure participant confidentiality and data privacy. Clear boundaries regarding AI use were communicated to students and teachers, emphasizing originality, responsible engagement, and ethical use of AI tools in accordance with academic integrity principles.

3. FINDINGS AND DISCUSSION

3.1 Findings

3.1.1 Students' Poetry Writing Performance

Students' poetry writing performance was assessed before and after the implementation of the Anchor Eyes Model using an analytic scoring rubric with a maximum score of 100. Given the research and development (R&D) orientation of the study, the analysis focused on descriptive trends and educational significance, rather than inferential statistical testing. Inferential statistics were not applied because the primary aim of the study was to examine pedagogical feasibility and preliminary effectiveness, not to establish causal relationships through experimental comparison.

Table 2. Descriptive Statistics of Students' Poetry Writing Scores (N = 96)

Measurement	Mean	Standard Deviation	Minimum	Maximum
Pre-test	64.18	6.92	50	78
Post-test	78.46	7.15	62	92
Gain Score	14.28	–	–	–

The descriptive results indicate a substantial improvement in students' overall poetry writing performance following the implementation of the Anchor Eyes Model. The magnitude of the gain suggests an educationally meaningful improvement, particularly given the relatively short instructional duration and the consistency of improvement across students with varying initial proficiency levels.

3.1.2 Performance by Creative Writing Dimension

To provide a more detailed picture of learning outcomes, students' poetry writing performance was further analyzed across five assessed dimensions: idea development, diction and word choice, imagery and figurative language, stylistic expression, and coherence and unity.

Table 3. Mean Scores by Creative Writing Dimension

Dimension	Pre-test Mean	Post-test Mean	Mean Gain
Idea Development	13.02	16.84	+3.82
Diction and Word Choice	12.76	16.21	+3.45
Imagery and Figurative Language	12.41	15.97	+3.56
Stylistic Expression	13.18	15.86	+2.68
Coherence and Unity	12.81	13.58	+0.77

(Maximum score per dimension = 20)

The largest descriptive gains were observed in idea development, diction, and imagery, indicating that students demonstrated notable progress in dimensions closely associated with creative exploration and expressive language use. Gains in coherence and unity were more modest, suggesting differential development across creative writing components.

3.1.3 Distribution of Student Performance Levels

Changes in performance were also examined through the distribution of students across predefined proficiency levels.

Table 4. Distribution of Student Performance Levels

Performance Level	Score Range	Pre-test (%)	Post-test (%)
Low	≤ 59	28.1	6.3
Moderate	60–69	41.7	18.8
Good	70–79	22.9	36.5
Very Good	≥ 80	7.3	38.4

The distributional shift indicates that a greater proportion of students moved into higher performance categories following the intervention, while the proportion of low-performing students decreased substantially. This pattern suggests that the observed gains were not limited to a small subgroup but reflected broader cohort-level progress.

3.1.4 Student Perceptions of AI-Assisted Learning

Students' perceptions of the Anchor Eyes Model and AI-assisted poetry writing were examined using a Likert-scale questionnaire.

Table 5. Student Perception Survey Results

Statement	Mean Score (1–5)
AI tools helped me generate poetry ideas	4.21
The learning activities were engaging	4.18
AI use supported, not replaced, my creativity	4.09
I felt more confident writing poetry	4.15
The learning model was easy to follow	4.12

Summary of Table 5: Overall, students reported positive perceptions of the learning model, particularly regarding idea generation, engagement, and confidence. The consistently high mean scores indicate that students perceived AI as a supportive component within the instructional process rather than as a replacement for their creative effort.

3.1.5 Performance across Participating Schools

To examine the consistency of the model across instructional contexts, post-test scores were compared descriptively across the three participating schools.

Table 6. Mean Post-Test Scores Across Participating Schools

School	N	Mean	SD
SMP Islam Al-Atrawiyah	32	79.12	6.84
SMP Al-Ijtihad	31	77.86	7.21
SMP Negeri 2 Sumenep	33	78.41	7.39

The relatively similar mean scores across schools suggest that the Anchor Eyes Model produced consistent learning outcomes across different classroom settings, despite minor contextual variations.

3.2 Discussion

This study aimed to develop and examine the pedagogical feasibility of the Anchor Eyes Model as an AI-assisted framework for creative poetry writing in secondary education. The findings indicate that the model successfully supported students' creative writing development, as evidenced by meaningful descriptive gains in poetry writing performance, positive learner perceptions of AI-assisted learning, and consistent outcomes across instructional contexts. These results suggest that a model-based and pedagogically structured integration of AI can enrich creative writing instruction when AI is positioned as a supportive scaffold rather than as a substitute for human creativity.

3.2.1 AI-Assisted Poetry Writing in Relation to Existing Literature

The observed improvements in students' poetry writing performance align with prior research demonstrating the potential of AI to support writing development, particularly in idea generation and lexical exploration (Baig & Yadegaridehkordi, 2024; Deng et al., 2025; Patekar & Črček, 2023). However, unlike many existing studies that focus on tool effectiveness—such as automated feedback systems or generative text outputs (Wang, 2020; Zhang, 2023; Zahabiyyah & Septiana, 2024)—this study contributes a model-based approach that embeds AI use within a coherent instructional framework.

By structuring AI integration through guided prompting, lexical support, and reflective scaffolding, the Anchor Eyes Model addresses a key limitation identified in previous research: the fragmented and instrumental use of AI in writing instruction. While earlier studies report gains in productivity or engagement, they often lack an explicit pedagogical structure that connects AI use to learning theory and creative processes. The present findings suggest that such structure is critical for ensuring that AI use enhances, rather than dilutes, creative engagement and learner agency.

3.2.2 Differential Development Across Creative Writing Dimensions

The findings reveal that the largest gains occurred in idea development, diction, and imagery—dimensions closely associated with divergent thinking and expressive language use, which are central to poetry writing. This pattern is consistent with research indicating that AI-assisted environments can effectively stimulate ideational fluency and lexical exploration when learners are guided to interact reflectively with AI-generated suggestions (Evmenova et al., 2024; Mekheimer, 2025).

In contrast, improvements in coherence and unity were comparatively modest. From a cognitive perspective, coherence in poetry requires higher-order integration processes, including thematic consistency, symbolic alignment, and metacognitive monitoring of meaning across lines and stanzas. These processes place greater demands on learners' executive control and reflective judgment, which typically develop more gradually over time (Zou et al., 2022; Urzua, 2025). From a poetic standpoint, coherence in poetry is not solely a structural concern but also an aesthetic one, involving nuanced decisions about ambiguity, fragmentation, and thematic resonance. Such competencies often emerge through sustained practice and prolonged exposure to poetic models rather than through short-term instructional interventions. These findings suggest that while the Anchor Eyes Model effectively supports early-stage creative exploration, structural and aesthetic coherence may require extended implementation or complementary instructional strategies focused on revision, metacognitive reflection, and poetic form.

3.2.3 Theoretical Contribution: AI as a Mediated Creative Scaffold

One of the key theoretical contributions of this study lies in conceptualizing AI as a mediated creative scaffold within a constructivist and transformative learning framework. Drawing on constructivist theory, the Anchor Eyes Model positions AI as a mediational tool that supports learners' movement within their zone of proximal development by extending cognitive and linguistic resources without replacing authorial control (Nazari et al., 2021; Hardiansyah & Wahdian, 2023). AI-assisted prompts and lexical suggestions functioned as psychological mediators that enabled students to explore possibilities, make aesthetic choices, and reflect on meaning.

From a transformative learning perspective, the model foregrounds reflection and agency by encouraging students to critically engage with AI outputs rather than accept them uncritically. This aligns with recent arguments that ethical AI integration in education requires instructional designs that promote reflective judgment and responsibility (Tlili, 2023; Song & Song, 2023). The positive student perceptions reported in this study—particularly the view of AI as supportive rather than substitutive—indicate that such a positioning is both pedagogically viable and experientially meaningful for learners. By shifting the focus from what AI can do to how AI is pedagogically mediated, this study extends the literature on AI-assisted writing beyond tool-centered paradigms and contributes a model-driven perspective that integrates cognitive, affective, and ethical dimensions of creative learning.

3.2.4 Implications for Pedagogy

The findings have several implications for secondary language education. First, they suggest that AI-assisted creative writing instruction is most effective when embedded within a structured pedagogical model that guides students' interaction with AI tools. Second, the Anchor Eyes Model demonstrates that ethical concerns regarding AI dependency can be addressed through explicit instructional boundaries and reflective practices. Finally, the model offers a practical framework that teachers can adapt to support creative writing without requiring extensive technological expertise or radical curricular changes.

3.2. 5 Limitations and Future Research

Despite its contributions, this study has several limitations. First, the absence of a control group limits the ability to draw causal conclusions regarding the effectiveness of the Anchor Eyes Model. While this design choice is appropriate for an R&D feasibility study, future research could employ quasi-experimental or longitudinal designs to strengthen causal inference. Second, the study was conducted within a limited regional context, which may affect the generalizability of the findings to other educational settings. Third, the implementation period was relatively short, which may have constrained the development of higher-order poetic competencies such as coherence and stylistic maturity. Future studies could explore extended implementations, cross-cultural applications, and teacher professional development processes related to AI-assisted creative writing pedagogy.

4. CONCLUSION

This study contributes to the expanding field of artificial intelligence in education by proposing a model-based, pedagogically grounded approach to AI integration in writing instruction through the Anchor Eyes Model. Rather than treating AI as an isolated tool, the model conceptualizes it as a mediated creative scaffold embedded within a structured learning process that prioritizes learner agency, reflection, and ethical engagement. In this way, the study moves beyond a narrow focus on tool effectiveness and instead emphasizes the importance of designing human-centered instructional frameworks that align technological affordances with core educational values. By integrating principles of constructivist mediation and transformative learning, the model demonstrates that meaningful learning outcomes depend not on the mere presence of AI, but on how it is intentionally orchestrated within pedagogical contexts, offering a flexible and transferable framework applicable across creative and language-based disciplines.

From a practical perspective, the findings suggest that AI can be effectively incorporated into creative writing instruction as a supportive mechanism for idea generation, vocabulary development, and reflective revision, rather than as a source of ready-made content, while also highlighting the importance of embedding ethical guidelines and reflective practices within instructional design. The study further indicates that curriculum designers can adopt the Anchor Eyes Model as an adaptable template for integrating AI into existing literacy curricula without requiring extensive technological resources or major structural changes. Future research should extend this work through longitudinal studies to examine sustained impacts on higher-order writing skills, as well as experimental or quasi-

experimental designs to compare model-based and tool-based approaches. Additional investigations across diverse educational contexts, learner populations, and cultural settings, along with a focus on teacher professional development for AI integration, would further refine and validate the model. Overall, the study underscores a critical shift in AI-in-education discourse from what AI can do to how it should be pedagogically designed and mediated to support meaningful, creative, and transformative learning experiences.

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