Enhancing Creative Writing Ability Through AI-Integrated Learning Activities Among 10th-Grade Students

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Abstract

The main three objectives of this research were to develop AI-supported creative writing lessons for Grade 10 students that met the 80/80 effectiveness standard, examine how students' writing skills improved after learning with AI, and assess students' satisfaction with this teaching approach. Within the Thai educational context, creative writing instruction often faces significant challenges. Traditional teaching methods frequently focus on the final product rather than the process, leaving students struggling with a lack of inspiration, the "blank page syndrome," and limited vocabulary. These issues contribute to writing anxiety and low engagement. This study aimed to demonstrate how AI-integrated learning serves as a critical intervention to bridge these pedagogical gaps by providing personalized support, immediate feedback, and cognitive scaffolding throughout the writing process.

We used a quasi-experimental design with 10th-grade students from Weerawatyothin School in Thailand. The experimental group consisted of 32 students, while the Control group had 30. Students in the experimental group completed 15 hours of instruction using a six-stage teaching model that incorporated AI tools.

The results were positive. The AI activities achieved an effectiveness rate of 84.53/83.59 (E1/E2) effectiveness, exceeding the 80/80 benchmark. Students' creative writing improved significantly after the intervention ($p < .05$). They also reported very high satisfaction with the approach. These findings suggest that using AI in creative writing classes can meaningfully help secondary school students write better, stay more engaged, and overcome common writing challenges by providing essential scaffolding within their zone of proximal development.

Keywords: Creativity, Creative Writing, Artificial Intelligence in Education, AI, Thai Language

Introduction

Why This Study Matters

Creative writing is an essential part of language education around the world because it allows students to express their ideas, emotions, and experiences through imaginative use of language. At the secondary school level, creative writing helps build not only language skills but also creativity, critical thinking, and a stronger sense of personal identity. However, many secondary students still struggle with creative writing, especially when it comes to generating ideas, organizing their thoughts clearly, and staying motivated (Amornsriwatanakul et al., 2021; Ennis, 2017).

Traditional creative writing instruction often focuses too heavily on the final product rather than the writing process. As a result, students receive little formative feedback and have limited opportunities to explore ideas, revise their drafts, or reflect on their work. These teaching practices can hold back students' creative growth and reduce their engagement in writing activities.

Recent educational research has shown that artificial intelligence (AI) can enhance teaching and learning by offering personalized support, immediate feedback, and adaptive learning pathways (Li & Zhang, 2023; Al Naimiy et al., 2025). Theoretically, integrating AI into writing instruction fits well with constructivist and sociocultural learning theories. AI can act as a cognitive tool that helps learners build knowledge through interaction, reflection, and ongoing refinement. In addition, AI-based support can serve as scaffolding aligned with Vygotsky's zone of proximal development, allowing students to complete writing tasks that they might not be able to accomplish on their own (Vygotsky, 1978).

Artificial intelligence (AI) in education can be broadly defined as computer-based systems designed to carry out tasks that usually require human intelligence, such as reasoning, recognizing patterns, and making adaptive decisions. In educational settings, AI is not just a tool for automation-it acts as an intelligent system that supports learning through interaction, guidance, and meaningful feedback (Russell & Norvig, 2010).

In Thailand, secondary language education still relies heavily on exam-oriented instruction, especially in preparation for national assessments of Thai language proficiency. Both national achievement data and classroom observations show ongoing challenges in students' creative writing skills, revealing a gap between what the curriculum expects and what actually happens in classrooms. This situation highlights the need for new teaching approaches that better align creative writing instruction with 21st-century competencies and modern digital learning environments.

Despite increasing interest in AI-assisted learning, there is still limited systematic research on how AI can be integrated into creative writing instruction at the secondary school level, especially within the Thai educational context.

Background and Rationale

Artificial intelligence (AI) has quickly changed education around the world, especially in language learning and writing. Many AI tools, such as tutoring systems, automated feedback programs, and advanced language models, are now used to help students improve their writing by giving suggestions on content, structure, and language (Foltz, 2018; Hattie & Timperley, 2007). Studies show that these tools can reduce students' mental workload while writing and encourage them to draft and revise their work more often.

In Thailand, the use of AI in secondary language education is still at an early stage. Because of this, students receive little formative feedback and have limited chances to practice reflective or repeated writing. Many students also find creative writing difficult and stressful, especially when they do not feel confident in their writing skills.

Using AI in creative writing classes can help solve these problems. AI tools can help students think of ideas, give quick feedback, and guide them when they revise their writing. This makes creative writing feel less difficult. AI activities can also create a more student-centered classroom that supports independence, interest, and motivation.

Because of this, it is important to design and test AI-based creative writing activities that fit both good teaching practices and the needs of Thai secondary students.

Objectives

This study aimed to:

1. Design AI-integrated creative writing activities for Grade 10 students that meet the 80/80 effectiveness standard
2. Evaluate changes in students' creative writing ability before and after AI-integrated instruction
3. Assess how satisfied students are with AI-enhanced creative writing instruction This study addresses the identified gap by examining how AI-supported scaffolding can enhance students' creative writing processes. By bringing together Scaffolding Theory and Connectivism, the research positions AI as something closer to a sounding board than a search engine-a tool students can think alongside, not just look answers up in. The aim is to help writers move through uncertainty rather than around it.

Contribution

The findings of this study are expected to support both theory and practice in language education. On the theoretical side, the results provide evidence that constructivist and sociocultural ideas can be applied to writing instruction that uses AI. By viewing AI as a tool that offers cognitive support and feedback, this study adds to current discussions about how technology can help students learn and create more effectively.

From a practical point of view, the findings give clear guidance for teachers and curriculum designers on how to use AI effectively in secondary creative writing classes. The instructional framework and learning activities in this study can help educators improve students' creative writing through more modern and student-centered methods. This research also adds to the growing body of work on AI in Thai education and offers ideas that may support future policy decisions, curriculum planning, and teacher training programs.

Literature Review

Creative Writing in Secondary School

Creative writing is an important part of language learning because it allows students to express their own ideas, feelings, and viewpoints through meaningful use of language. In secondary school, creative writing helps build higher-order thinking skills, imagination, and independence in learning. Researchers note that creative writing is not only about correct grammar. It also involves originality, clear organization, creative use of language, and emotional impact (Guilford, 1967; Torrance, 1974).

Previous studies show that many secondary students struggle with creative writing, especially when it comes to generating ideas, organizing content, and creating clear and connected stories (Ennis, 2017; Amornsriwatanakul et al., 2021). These difficulties often come from teaching methods that focus mainly on the final piece of writing rather than the writing process. As a result, students have fewer chances to try out ideas, revise their work, or reflect on their writing. In contrast, a process-oriented approach has strong support in the literature

because it encourages students to plan, draft, revise, and reflect in multiple stages, which helps build creative writing skills more effectively (Flower & Hayes, 1981).

Creative writing in Thai schools is usually taught in a teacher-centered and exam-focused way. Students do not get many chances to be creative or express their own ideas. Because of this, many of them see creative writing as something difficult and stressful instead of something enjoyable. This shows that new teaching methods are needed-methods that support students through each step of the writing process and help them stay engaged and creative.

AI in Writing Education

Artificial intelligence (AI) has become increasingly prevalent in educational settings, particularly in the domains of language learning and writing instruction. AI-powered tools, including automated writing assessment systems, intelligent tutoring systems, and large language models, have demonstrated considerable potential to support learners' writing development through real-time feedback, personalized guidance, and adaptive learning pathways (Foltz, 2018; Li & Zhang, 2023).

Research indicates that AI-assisted writing environments can enhance students' writing accuracy, coherence, and confidence by reducing cognitive load and providing timely feedback on grammar, vocabulary, and textual organization (Hattie & Timperley, 2007; Al Naimiy et al., 2025). In contrast to traditional forms of feedback, which are often delayed and constrained by teachers' workload, AI-generated feedback is immediate, consistent, and scalable. These characteristics make AI particularly effective in supporting iterative drafting and revision processes.

Nevertheless, scholars caution that AI should not replace teachers but should instead function as a complementary tool within well-designed pedagogical frameworks. Effective integration of AI requires careful instructional planning, clearly defined learning objectives, and explicit guidance on ethical and responsible AI use. When implemented appropriately, AI can facilitate learner-centered and process-oriented writing instruction rather than serving merely as a shortcut for content generation.

Study's Conceptual Framework

Drawing on theories of creative writing, research on AI-enhanced learning, and established learning frameworks, this study proposes a conceptual model for the design and implementation of AI-enhanced creative writing instruction. Within this model, AI functions as a cognitive and metacognitive scaffold by supporting idea generation, formative feedback, and iterative revision within each instructional phase.

The independent variable of the study comprises AI-enhanced creative writing activities structured around a six-phase instructional model (C-R-E-A-T-E). These activities integrate AI tools throughout the entire writing process, including idea generation, structural planning, drafting, revision, reflection, and assessment. The use of AI is guided by explicitly designed prompts and clearly defined pedagogical objectives to ensure alignment with creative writing learning outcomes.

The dependent variables include students' creative writing competence, assessed in terms of originality, content quality, language proficiency, and emotional-intellectual depth, as well as students' satisfaction with AI-enhanced instruction. The conceptual framework also recognizes mediating mechanisms-such as instructional scaffolding, feedback provision, self-assessment, and learner engagement-that influence the relationship between the instructional activities and the resulting educational outcomes.

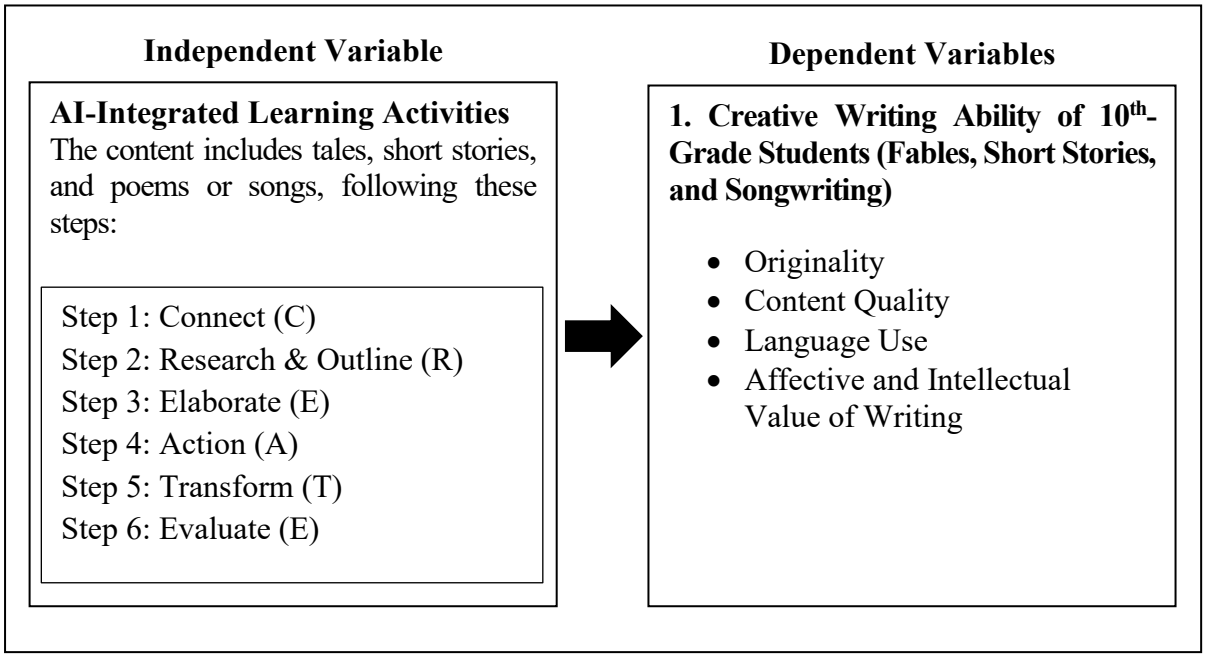


Figure 1: Conceptual Framework of the Study

Figure 1 depicts this research's conceptual model. The model shows how AI-enhanced creative writing activities, delivered through the six-phase instructional sequence (C-R-E-A-T-E), affect students' creative writing competence and educational satisfaction.

At the teaching level, AI plays a supportive role in the writing classroom. It helps students generate ideas, receive feedback, and revise their work during the writing process. AI also provides scaffolding that supports students as they develop their compositions. At the level of learning activities, students are encouraged to engage more actively with their writing. They practice self-regulation and reflection with support from both the teacher and AI tools. Together, these learning processes contribute to improved creative writing performance and more positive attitudes toward writing.

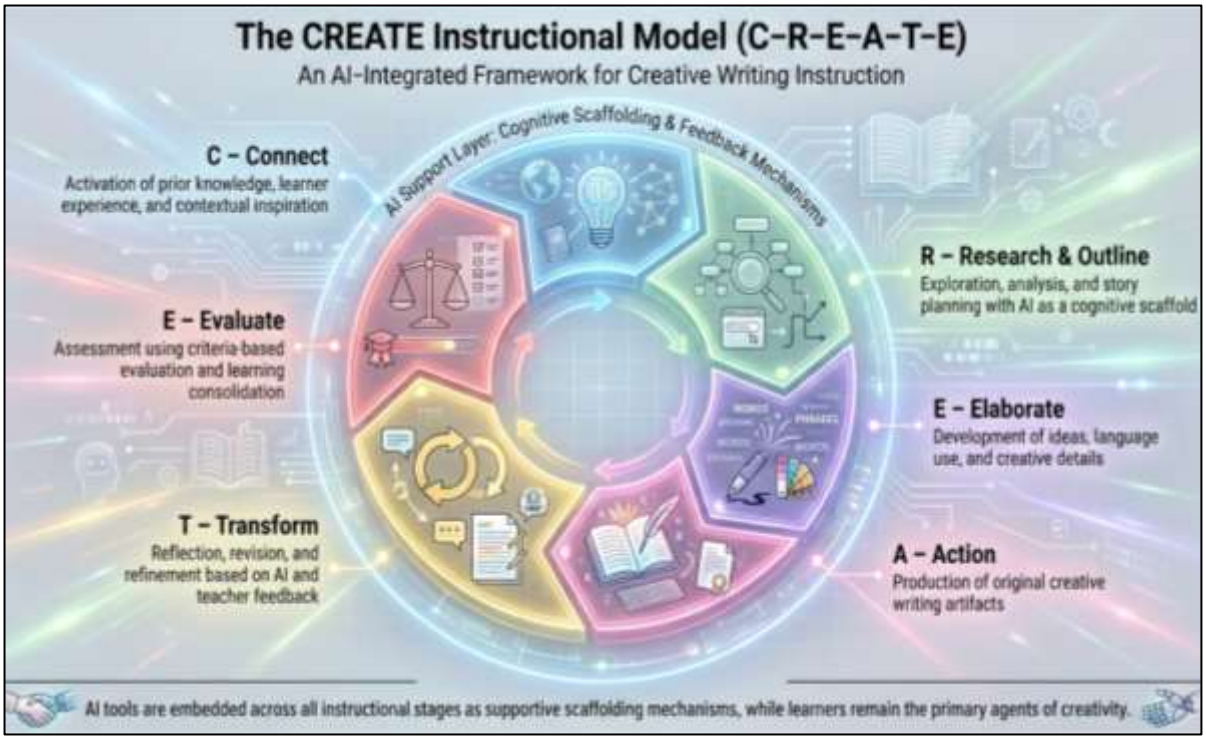


Figure 2: The CREATE (C-R-E-A-T-E) instructional model for AI-integrated creative writing instruction.

The CREATE (C-R-E-A-T-E) model was developed to organize AI-integrated creative writing instruction into a clear, process-oriented learning cycle. The model places strong emphasis on learner agency and active participation. Within this framework, AI is used as a supportive tool that provides cognitive scaffolding across different stages of the writing process, including idea generation, drafting, revision, reflection, and evaluation.

Research Methodology

Study Design

This research used a quasi-experimental design with a pretest-posttest control group (n=30) and experimental group (n=32) structure to investigate the effectiveness of AI-enhanced creative writing instruction. This design was selected to systematically evaluate students' creative writing competence before and after the teaching intervention while addressing practical constraints within the educational setting (Creswell & Creswell, 2018).

The study focused on both learning outcomes and students' perceptions of the instructional approach. Quantitative data were collected through standardized creative writing assessments and questionnaires in order to measure instructional effectiveness, students' writing achievement, and their level of satisfaction with the learning experience.

Participants

The participants in this study were 62 tenth-grade students from two intact classrooms at Weerawatyothin School, Surin, Thailand, during the second semester of the 2025 academic year. These students shared similar educational backgrounds and were taught by the same instructor to minimize teacher-related variables. The classrooms were assigned using a cluster random sampling technique into two groups: an experimental group (n=32) and a control group (n=30).

Research Instruments

Three research instruments were employed.

1. AI-Integrated Lesson Plans

The lesson plans were built around a six-phase teaching sequence (C-R-E-A-T-E) designed to support the creative writing process through systematic AI integration. The six phases were:

1. Connect - activating prior knowledge and experiences
2. Research and Outline - organizing and structuring ideas with AI help
3. Elaborate - writing creative pieces
4. Action - improving and refining drafts through AI-provided feedback
5. Transform - presenting revised work in meaningful formats
6. Evaluate - assessing writing quality and reflecting on learning outcomes

AI tools were integrated into each phase of the instructional process. They were used to support idea development, improve language use, and provide feedback during writing activities. Throughout the lessons, teachers continued to play an active role by guiding students' critical thinking and monitoring ethical and responsible AI use. In addition, expert reviewers examined the lesson plans to ensure content validity and confirm alignment with the intended educational objectives.

Table 1: Summary of the C-R-E-A-T-E Model with AI for Creative Writing

Step	Key Learning Activities	Use of AI Tools	Expected Outputs	Assessment Methods
C	Stimulate interest through media (videos, songs, sample texts); activate prior knowledge; discuss key concepts	ChatGPT (example texts)	Initial understanding, engagement	Observation, participation, questioning
R	Study and analyze structures (story, short story, song); explore writing techniques; create concept maps	ChatGPT, Canva, Gemini	Concept maps, structural analysis worksheets	Worksheet checking, concept evaluation
E	Develop ideas through brainstorming, group work, and creative thinking activities	Copilot, Gemini	Plot outlines, story frameworks, lyric concepts	Rubric-based evaluation (creativity, originality)
A	Produce creative writing (story, short story, song); draft and revise work	ChatGPT, Gemini, Canva	Drafts and final written works	Writing assessment (content, language use, creativity)
T	Reflect on learning; peer review; present work; discuss strengths and improvements	Padlet, Mentimeter, Copilot	Reflections, peer feedback	Reflection assessment, peer evaluation
E	Assess final products and learning outcomes; self and peer evaluation; present completed works	Mentimeter, Padlet	Final outputs (e.g., E-book, digital story, song)	Rubric-based assessment (creativity, content, language, value)

Table 1 lays out how the C-R-E-A-T-E model unfolds across six steps, each built around a different phase of the writing process. The sequence moves from building curiosity to producing finished work-but it is not a straight line so much as a progression that keeps circling back to the student's own thinking.

Creative Writing Assessment

The creative writing assessment was designed to evaluate student performance across four dimensions:

Table 2: Creative Writing Competence Assessment Rubric Sample

Dimension	Description
Creativity (Originality)	Ability to generate novel and unique ideas
Content Strength	Coherence, completeness, and relevance of content
Language Accuracy and Style	Accuracy and appropriateness of vocabulary and structure
Emotional and Intellectual Merit	Emotional impact and meaningful insights conveyed

The assessment required students to produce creative writing pieces based on specific prompts and guidelines. A rubric-based scoring system was used to evaluate the students' work. Subject-matter experts reviewed the assessment to ensure content validity. The instrument was also pilot tested prior to data collection in order to establish its reliability.

Table 3: Language Precision and Style Evaluation Standards

Assessment Dimension	Evaluation Criteria	Performance Indicators
Creativity (Originality)	Capacity to produce original concepts and imaginative expressions	Shows novel concepts, distinctive viewpoints, and imaginative language application; avoids imitation and exhibits personal voice
Content Strength	Pertinence, coherence, and thoroughness of content	Introduces concepts relevant to the designated topic; sustains logical arrangement, unity, and continuity throughout the composition
Language Accuracy and Style	Correctness and suitability of language application	Employs grammatically accurate sentence construction, correct spelling and punctuation, suitable word selection, and fluent stylistic expression appropriate for the writing type
Emotional and Intellectual Merit	Emotional influence and meaning depth	Communicates significant messages, values, or reflections; engages readers emotionally and intellectually and exhibits thoughtful understanding

Student Satisfaction Survey

A five-point Likert-scale questionnaire was developed to measure students' satisfaction with AI-enhanced creative writing activities. The questionnaire focused on four key areas which are the teaching process, instructional materials and resources, evaluation and feedback, and the learning environment. Subject experts reviewed the questionnaire to ensure clarity and appropriateness. Reliability testing indicated an acceptable level of internal consistency.

3.4 Teaching Procedure

The instructional intervention was conducted over a total of 15 teaching hours. Students in the experimental group took part in AI-enhanced creative writing activities designed according to the C-R-E-A-T-E instructional sequence. During the intervention, students completed prompt-based learning tasks that emphasized thoughtful and responsible use of AI, rather than simple copying of generated content.

AI helped students generate ideas, plan their writing, draft, revise, and reflect. Teachers guided discussions, checked students' progress, and gave additional support when needed. The control group learned creative writing through regular teaching methods and materials, without using AI.

Table 4: Experimental Timeline (15 Instructional Hours over 5 Weeks)

Week	Session (3 hrs/week)	Activity / Instructional Stage	Key AI Integration / Tasks
1	Session 1	Pre-test & Introduction	Administration of Creative Writing Pre-test and orientation on AI tools (e.g., Gemini, ChatGPT).
2	Session 2	Stage 1: Connect (C) & Stage 2: Research (R)	Stimulating background knowledge and using AI to research themes, vocabulary, and inspirations.
3	Session 3	Stage 3: Elaborate (E) & Stage 4: Action (A)	Using AI to expand ideas (scaffolding) and starting the initial drafting process of creative pieces.
4	Session 4	Stage 5: Transform (T) & Stage 6: Evaluate (E)	Refining work based on AI formative feedback and peer/teacher review. Finalizing the creative product.
5	Session 5	Post-test & Satisfaction Survey	Administration of Creative Writing Post-test and the 5-point Likert scale satisfaction questionnaire.

The experimental intervention spanned five weeks, with three instructional hours per week, totaling 15 hours. The first week involved pre-assessment and AI tool orientation. Weeks 2 through 4 focused on the implementation of the six-stage C-R-E-A-T-E model, where AI served as a cognitive scaffold for brainstorming (Connect/Research), drafting (Elaborate/Action), and refining (Transform/Evaluate). The final week concluded with the post-test and a student satisfaction survey.

Data Collection

The experimental intervention was conducted over a period of 5 weeks, totaling 15 instructional hours (3 hours per week). The first week was dedicated to the pre-test and introduction to AI tools. The subsequent three weeks focused on the implementation of the six-stage C-R-E-A-T-E teaching model, and the final week concluded with the post-test and the satisfaction survey.

We collected data in three phases. Before the teaching intervention, students in both the experimental and control groups completed a creative writing pretest. After the instructional period, a posttest was administered to examine changes in students' creative writing ability. In addition, students in the experimental group completed a satisfaction questionnaire at the end of the intervention to reflect their experiences with AI-enhanced learning.

Data Analysis

Quantitative data were analyzed using descriptive and inferential statistics. Teaching effectiveness was calculated using the E_1/E_2 efficiency index to evaluate both the learning process and learning outcomes. Independent samples t-tests were used to compare creative writing performance between the experimental and control groups before and after the intervention. This statistical method was selected because the two groups consisted of different students from intact classrooms. Statistical significance was set at the .05 level.

Research Finding

Effectiveness of AI-Enhanced Creative Writing Activities

The effectiveness of the AI-enhanced creative writing activities was evaluated using the E_1/E_2 efficiency index, which represents process effectiveness (E_1) and outcome effectiveness (E_2). The results showed an effectiveness score of 84.53/83.59, which exceeded the benchmark criterion of 80/80.

The E_1 score reflects students' performance during the learning process and indicates that students were able to participate effectively in the AI-supported activities. The E_2 score represents students' creative writing achievement after the instruction, suggesting that the learning activities helped students reach the expected learning outcomes.

Table 5: Effectiveness of AI-Enhanced Creative Writing Activities (E_1/E_2)

Effectiveness Metric	Result	Benchmark
E_1 (Process)	84.53	80
E_2 (Outcome)	83.59	80

These results demonstrate that the AI-enhanced learning activities proved successful in both the teaching process and learning outcomes.

Comparison of Creative Writing Competence Before and After Instruction

Independent samples t-test results showed no significant difference between the experimental and control groups in the pretest. However, a significant difference was found in the posttest at the .05 level. Students in the experimental group demonstrated higher creative writing competence after receiving AI-enhanced instruction.

The posttest mean score was higher than the pretest mean score, indicating improvement in creative writing performance across key areas such as originality, content quality, language use, and emotional depth.

Table 6: Creative Writing Competence Comparison Between Experimental and Control Groups at Pretest and Posttest Using Independent Samples t-test

		Statistic	DF	P	Mean difference	SE difference
PreTest	Welch's t	0.677	59.4	0.750	0.765	1.13
PostTest	Welch's t	-6.706	52.3	<.001	-6.738	1.00

Note. H_a $\mu control < \mu experimental$

Table 7: Pretest-Posttest Comparison of Creative Writing Competence Between Experimental and Control Groups

	Group	N	Mean	Median	SD	SE
PreTest	control	30	23.7	22.5	4.06	0.741
	experimental	32	23.0	22.0	4.82	0.851
PostTest	control	30	26.7	25.0	4.52	0.825
	experimental	32	33.4	33.0	3.24	0.573

The results show that AI-enhanced creative writing activities had a statistically significant effect on students' creative writing competence.

Creative Writing Competence Learning Progress

To illustrate students' improvement in creative writing, a visual comparison of pretest and posttest mean scores was presented. The results show a clear increase in creative writing performance after students participated in AI-enhanced learning activities. The comparison highlights the learning gains achieved through systematic AI integration across the writing process. Students improved not only in overall writing scores but also in idea development, content expansion, and language refinement through repeated drafting and revision.

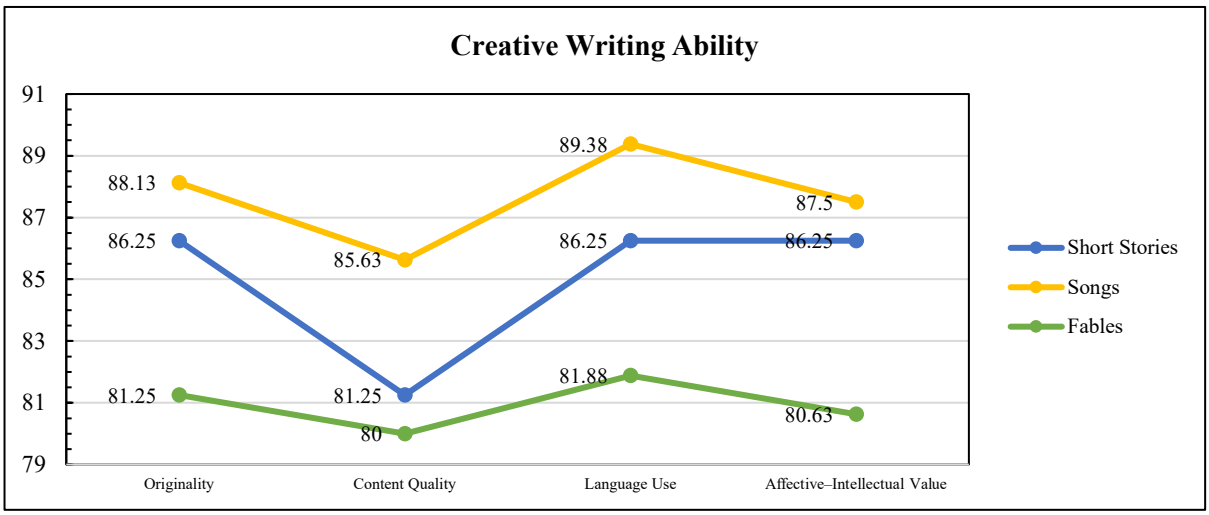


Figure 3: Creative Writing Ability of The Experimental Group After Instruction

Figure 3 shows students' creative writing scores after AI-integrated instruction. The results compare fable writing, short story writing, and songwriting across four areas: originality, content, language use, and overall value.

Songwriting received the highest scores in all areas, followed by short story writing. Fable writing had the lowest scores, although students still performed at a satisfactory level.

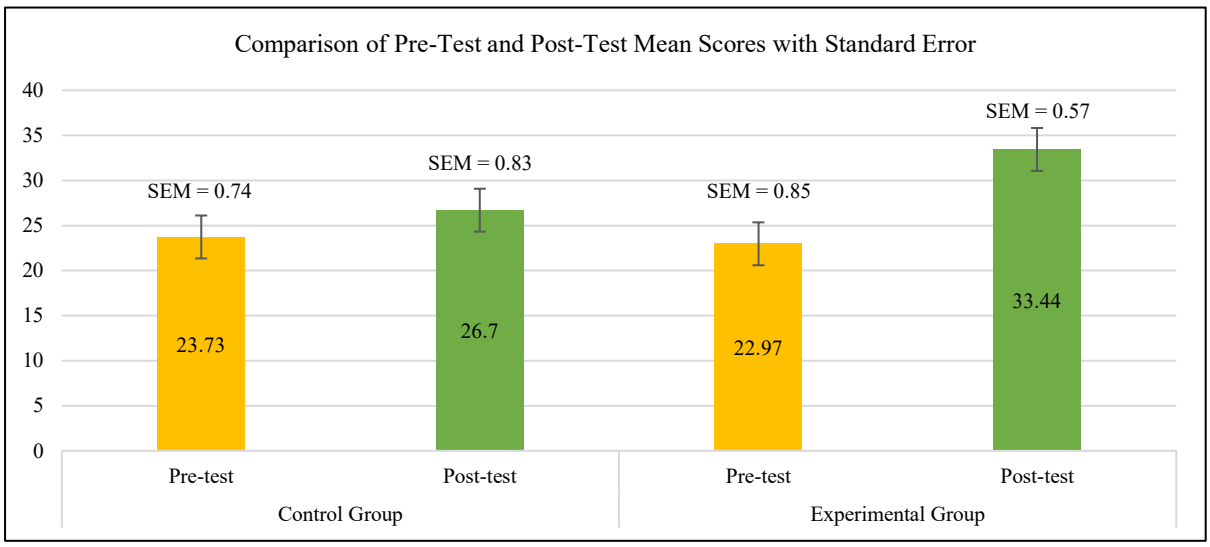


Figure 4: Comparison Of Pre-Test and Post-Test Mean Scores Between the Control and Experimental Groups. Error Bars Represent the Standard Error of The Mean (SEM).

Figure 4. Comparison of mean creative writing scores between the experimental and control groups. Error bars indicate the Standard Error of the Mean (SEM), highlighting the significant growth and reduced variability in the experimental group following the AI-integrated intervention.

Student Satisfaction with AI-Enhanced Creative Writing Instruction

Student satisfaction with AI-enhanced creative writing activities was analyzed using descriptive statistics. The results showed a very high overall satisfaction level (mean = 4.85), with high scores across all survey dimensions, especially the learning environment and educational materials.

Students expressed that AI tools helped reduce writing anxiety, support idea generation, and increase engagement. The lowest score, although still high, related to applying creative writing skills to daily life.

These results suggest that students valued the AI-enhanced approach, but clearer links between creative writing skills and real-life use could be developed.

Table 8 provides additional information about students' satisfaction with the AI-enhanced creative writing activities. The survey assessed students' opinions in four areas: the teaching process, learning resources and materials, assessment and feedback, and the overall learning environment. Responses were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Table 8: Student Satisfaction Average Scores by Area (n=32)

Area	Mean ($\bar{X}$)	Interpretation
Teaching process	4.84	Highest
Educational resources and materials	4.86	Highest
Evaluation and feedback	4.78	High
Learning environment	4.94	Highest
Overall satisfaction	**4.85**	**Highest**

The findings show that students had very positive views of the AI-enhanced creative writing instruction, particularly regarding the learning environment and the materials used.

Samples of Student Creative Writing and AI-Integrated Learning Process

1. Examples of Student Creative Writing Progress

The following samples demonstrate how students overcame "blank page syndrome" and expanded their vocabulary through AI scaffolding.

Case Study: Student A (Songwriting/Poetry)



Figure 5: A Complete Song Titled "Lūk-Kheun Mai Ner... Hua-Jai" (Rise Up Again).

Sample AI Prompts and Scaffolding Process

To illustrate the pedagogical gap being bridged, below is a typical interaction during the writing process:

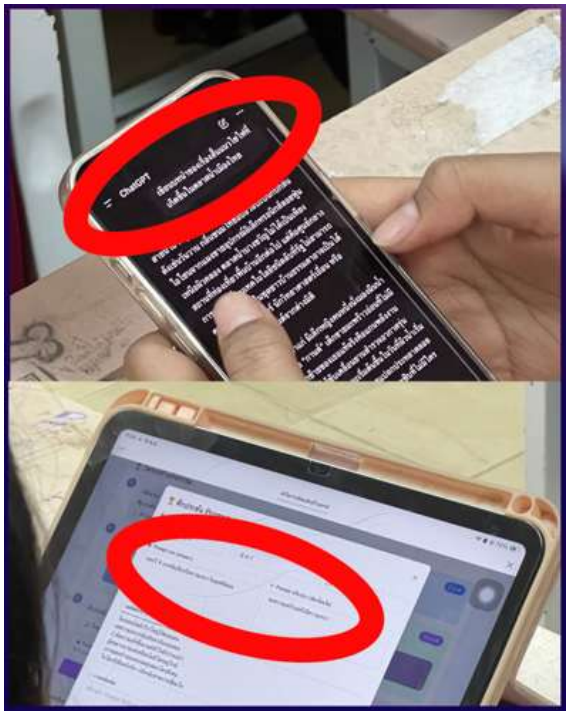


Figure 6: Student Prompt

Qualitative Feedback on AI Integration

Direct quotes from students highlighting the reduction of writing anxiety and the expansion of creative boundaries:

1. "For me, AI really helps, especially when I want beautiful vocabulary or want it to suggest multiple endings. It makes my writing much more fluid."

2. "I feel like when using AI, it keeps my thoughts from getting stuck. If I can't think of anything, I ask the AI first. It's like opening another door to my imagination."

3. "AI helps me write faster and makes me see the value in writing and developing myself more."

Samples of Student Creative Writing

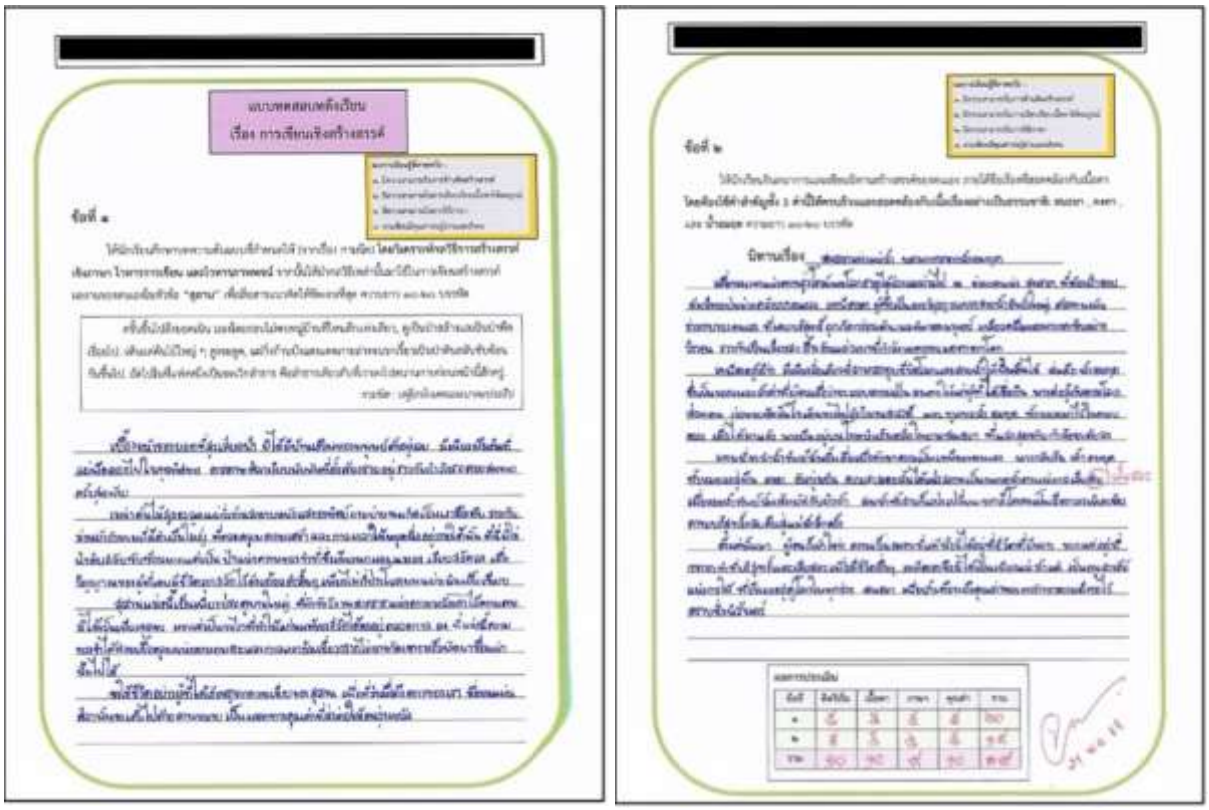


Figure 7: Samples of Student Creative Writing

Figure 7. A final creative writing sample from a student in the experimental group. This level of descriptive detail and structural coherence illustrates the effective transition from initial writing blocks to a polished creative composition, facilitated by AI-driven formative feedback and vocabulary expansion.

Discussion/Conclusion

The findings clearly indicate that students who worked through the AI-integrated activities wrote noticeably better by the end of the study their post-test scores climbed above both their own starting point and the scores of students who learned without AI support. The gap was not marginal; the experimental group's gains cleared the threshold for statistical significance ($p < .05$), which suggests the improvement was not a matter of chance.

What seemed to make the difference was less about the technology itself and more about what it made possible in the moment of writing. When students got stuck, they got feedback-not at the end of a lesson, but while they were still in the middle of figuring things out. When words failed them, they had somewhere to turn. Over time, that kind of immediate, low-stakes support appeared to loosen something: the paralysis that comes with staring at a blank page started to ease, and anxiety around writing seemed to soften. The C-R-E-A-T-E model, built around these AI-assisted touchpoints, gave students enough of a foothold to attempt writing they might have otherwise abandoned.

This pattern echoes what earlier research has found-that well-designed scaffolding lets learners reach further than they could on their own, not by doing the work for them, but by holding things steady while they find their footing.

Effectiveness of AI-Enhanced Creative Writing Activities

The results showed that the AI-enhanced creative writing activities achieved an effectiveness score of 84.53/83.59, exceeding the 80/80 benchmark. This indicates that the instructional design was effective in supporting both the learning process and learning outcomes. Students were actively engaged during the activities, and they were able to achieve the expected creative writing competencies after instruction.

These findings are consistent with constructivist learning principles, which emphasize active participation and learning through meaningful experiences (Jonassen, 1991). The C-R-E-A-T-E instructional model allowed students to repeatedly plan, write, revise, and reflect with support from AI tools, feedback, and learning resources. Similar results have been reported in previous studies showing that AI-supported instruction can improve learning effectiveness through ongoing scaffolding and formative feedback (Hattie & Timperley, 2007; Jamil, M. G., & Bhuiyan, Z.; 2021).

Learning theory suggests that students learn best with guidance, feedback, and supported practice. The AI-enhanced instruction met these conditions by integrating feedback and scaffolding throughout the writing process. (Schunk, 2012).

Students used AI to generate song and lyric ideas and then revised them to improve emotional expression and language.

Improvement in Students' Creative Writing Ability

Results revealed a statistically significant improvement in students' creative writing competence following participation in AI-enhanced learning activities. We can understand this improvement through Vygotsky's zone of proximal development (ZPD) framework, which suggests that learners can achieve higher performance levels when provided with appropriate guidance or scaffolding (Vygotsky, 1978).

In this research, AI acted as a more knowledgeable other (MKO) by providing timely and personalized feedback during the writing process. With support from AI in brainstorming, organizing ideas, and revising drafts, students were able to overcome common writing difficulties, such as getting started and structuring their ideas clearly. These findings are consistent with previous studies showing that AI-based support can enhance writing performance by reducing cognitive load and helping students gradually develop their writing skills (Graham & Harris, 2018; Yang et al., 2020).

Students showed improvement in several aspects of creative writing, such as originality, content development, and language use. AI tools helped students generate ideas and organize their thoughts more easily, making the writing process less difficult. By revising their work and reflecting on feedback, students were able to improve their writing step by step. During the Transform phase, students mainly focused on improving their own work, which shows that AI was used as a supporting tool rather than a source of copied content.

Students’ reflections supported these findings. Many students reported that AI prompts helped them see new ideas in their writing and made them more confident when revising their

work. These reflections suggest that AI-supported instruction improved not only writing skills but also students' confidence in their own creativity.

In particular, songwriting activities showed the greatest improvement across all writing dimensions. This may be because songwriting allows more freedom in language use, emotional expression, and rhythm, which worked well with AI support during idea generation and revision.

The present findings are in line with previous studies in Thailand showing that AI-supported writing can enhance students' creative writing skills. For instance, Rangsipanya and Art-in (2025) found that integrating ChatGPT into creative learning activities led to clear improvements in students' originality and language use.

Student Satisfaction and Learning Experience

Results showed that students reported the highest level of overall satisfaction with AI-enhanced creative writing instruction. High ratings for the learning environment and educational materials suggest that AI integration helped create a positive and engaging classroom atmosphere. This finding is consistent with humanistic learning principles, which emphasize emotional comfort, learner autonomy, and intrinsic motivation as key factors in effective learning (Rogers, 1983).

Students tended to view AI as a supportive and non-threatening tool that helped reduce anxiety about making writing mistakes and encouraged experimentation. The availability of instant, personalized feedback allowed students to revise their work more confidently without fear of negative judgment. As a result, students developed a stronger sense of ownership and confidence in their writing. These findings are consistent with previous studies indicating that AI-supported feedback can enhance learner motivation and engagement by providing timely and individualized assistance (Foltz, 2018; Li & Zhang, 2023).

However, the lower satisfaction with how creative writing skills apply to daily life shows that this area still needs improvement. Although students saw that AI helped them write better, some were unsure how to use these skills outside the classroom. This suggests the need to clearly link creative writing tasks to real-life uses, such as digital storytelling, social media posts, or creating creative online content.

Overall, the discussion shows that using AI in creative writing classes can not only improve students' learning but also help build a more supportive and motivating classroom environment. When teachers use AI with clear teaching goals and proper guidelines, this approach can greatly enhance creative writing education at the secondary level.

Apart from improving their writing, the lesson design also helped students develop basic AI literacy by teaching them to question and evaluate AI suggestions instead of copying them directly. This encourages responsible AI use and supports the wider goals of building digital and critical literacy in secondary education.

Conclusion and Implications

This research aimed to design and evaluate AI-enhanced creative writing activities for Grade 10 students and to see how they affected students' writing skills and learning satisfaction. The findings showed that the AI-supported lessons were more effective than the set benchmark and led to clear improvements in students' creative writing. Students also reported very high satisfaction with the learning activities, reflecting their positive attitude toward this teaching approach.

It also provides empirical support for incorporating AI into creative writing instruction at the secondary level. By embedding AI tools within a structured six-phase teaching process, the learning activities effectively supported students throughout writing, including idea generation, drafting, revising, and reflection. These results correspond with constructivist and sociocultural learning frameworks, which emphasize active learning, scaffolding, and feedback

as fundamental mechanisms for skill development. In this research, AI functioned as a cognitive support tool and scaffolding within students' zone of proximal development, enabling learners to accomplish writing tasks beyond their initial competence level. (Schunk, 2012).

From a teaching standpoint, the findings show that AI can be integrated into creative writing lessons in a helpful and purposeful way when teachers set clear goals, design effective prompts, and guide students throughout the process. AI-assisted feedback and prompt-based activities motivated students to revise their work multiple times and think more deeply about their writing. Both of which are essential for building creative writing skills. Rather than replacing the teacher, AI should be used as a supportive tool that boosts students' independence, confidence, and engagement in learning.

For educational practice, the instructional sequence proposed in this study offers a practical model for designing AI-enhanced writing activities in secondary classrooms. The sequence is flexible and can be adapted to different writing genres and learning contexts, as long as ethical guidelines and responsible AI use are prioritized. The study also underscores the need to build students' AI literacy by teaching them to evaluate AI-generated suggestions thoughtfully and to use AI as a learning aid rather than a tool for copying content.

Despite its contributions, this study has some limitations. The participants were from a single school, which may limit how widely the results can be applied. The research also focused mainly on short-term learning outcomes. Future studies could build on this work by exploring the long-term effects of AI-supported writing instruction, testing the approach in different educational contexts, or examining the development of AI literacy and creative thinking skills in greater depth.

Overall, the findings of this study show that AI-enhanced creative writing instruction has strong potential to improve both students' writing performance and their overall learning experience. With thoughtful lesson design and proper teacher guidance, AI can serve as a powerful tool that supports and enriches creative learning in secondary education.

Suggestion

Suggestions for Implementation

The 6-step learning management model designed to enhance creative writing abilities through Artificial Intelligence (AI) is highly practical and can be effectively implemented in learning activities for Grade 10 (Mathayom 4) students.

In practice, educators should integrate Digital Literacy and Critical Thinking alongside the use of AI tools. It is crucial to emphasize the role of AI as a supportive learning tool rather than a definitive source of answers. This approach prevents over-reliance on technology and empowers students to independently evaluate, verify, and build upon AI-generated outputs.

Suggestions for Future Research

A comparative study should be conducted to evaluate the efficacy of different types of AI tools in promoting creative writing skills. This would help identify which specific tools are most suitable for diverse learning contexts and instructional objectives.

Future studies should prioritize qualitative or mixed-methods approaches that emphasize the student's workflow. This could involve analyzing Revision Logs or AI Usage Logs, including student decision-making processes-specifically how they formulate prompts and their reasoning for accepting or rejecting AI suggestions. Such data will provide in-depth insights into how AI affects the development of Digital Literacy and AI Ethics, and the extent to which students can refine AI outputs while maintaining authorship.

The scope of research should be expanded to include more diverse samples, such as schools in different geographic areas with varying levels of technological readiness, or across

different grade levels. This expansion would further validate the effectiveness of the learning model in a broader educational landscape.

Further research should explore the impact of AI integration on other essential 21st-century skills beyond creative writing, such as Problem-Solving, Collaboration, and Critical Thinking. This will ensure a holistic understanding of how AI influences overall student development.

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