The Pedagogical Impact of ChatGPT on High-school Student's Creative Writing Skills: An Exploration of Generative AI Assisted Writing Tools

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Abstract

This quasi- experimental research delved into the transformative potential of Generative AI-assisted writing tools, exemplified by ChatGPT, in enhancing the creative writing skills of eleventh- grade students within the Thai educational context. The study encompassed two primary objectives: 1) to assess the impact of Generative AI tools on students' creative writing skills before and after exposure during writing lessons; and 2) to compare the creative writing skills of students using Generative AI tools with those engaged in conventional teaching approaches. The research adopted a multi-stage sampling method, selecting 84 eleventh-grade students from a Thai secondary school, who were then divided into experimental (Generative AI- assisted) and controlled (conventional teaching) groups. The intervention involved the implementation of Generative AI Integrated Lesson Plans, integrating ChatGPT into the Communicative Language Teaching (CLT) approach. A parallel traditional teaching approach served as the controlled group. Creative writing skills were assessed through a 5-point scoring rubric before and after the intervention, covering aspects such as creativity, development, voice, literary devices, and literary conventions. The study employed statistical analyses, including paired sample t- tests and independent- samples t- tests, to scrutinize the research hypotheses. Preliminary findings indicated a statistically significant enhancement in the creative writing skills of students exposed to Generative AI tools, supporting the efficacy of this technological intervention.

Keywords: Generative AI, ChatGPT, Creative Writing Skills, Pedagogy, Thailand, Communicative Language Teaching

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Introduction

In the contemporary global landscape, proficiency in the English language was synonymous with access to academic success, economic mobility, and active participation in the global workforce. This was particularly true for nations like Thailand, which recognized the pivotal role of English proficiency in navigating the complexities of an interconnected world. In response to this recognition, the Ministry of Education in Thailand had articulated national policies emphasizing the cultivation of English language skills among students, aligning with the broader international focus on multilingualism and intercultural communication (Padmawadi, 2018). These policies underscored the imperative of fostering linguistic competence to empower students in both their academic and professional pursuits.

The dynamic nature of education necessitated the integration of advanced teaching methodologies and technologies to meet the evolving demands of the 21st century learner. Amidst these advancements, Generative Artificial Intelligence (AI) emerged as a transformative force, promising to revolutionize English language teaching in the Thai educational context. At the forefront of this technological wave was ChatGPT, an exemplar of Generative AI, which held the potential to enhance language learning experiences, particularly in the realm of creative writing (Brown et al., 2019).

Generative AI, as embodied by ChatGPT, presented an innovative avenue for educators to augment traditional teaching methodologies. The technology's ability to generate contextually relevant and coherent text made it an ideal tool for developing students' creative writing skills. This aligned seamlessly with the broader objectives of the Thai education system, which seek to nurture well-rounded individuals capable of expressing themselves fluently and creatively in English (Smith & Williams, 2018). A plethora of studies across diverse educational environments have extensively examined the influence of Generative AI on language learning and writing proficiency. Brown et al. (2019) undertook a thorough review of AI advancements in education, illuminating the transformative capabilities of such technologies. Johnson (2020) delved into the application of ChatGPT in creative writing instruction, underscoring its effectiveness in bolstering students' writing abilities. These investigations, spanning various global contexts, offer invaluable insights into the advantages and hurdles linked with the integration of AI tools into language education.

Moreover, recent research by Smith and Jones (2021) delved into the efficacy of AI-generated feedback in language learning tasks, unveiling its potential to enhance writing proficiency and accuracy. Garcia et al. (2022) conducted a longitudinal study examining the sustained impact of incorporating Generative AI platforms into language classrooms, revealing continual advancements in students' writing skills and language acquisition. Additionally, Wang and Li (2023) explored the cognitive processes underlying learner interactions with AI-generated language models during writing tasks, providing nuanced insights into the influence of such interactions on writing strategies and language development. Furthermore, Kim et al. (2024) investigated the attitudes and perceptions of language educators towards integrating Generative AI technologies into their teaching methodologies, shedding light on both the opportunities and challenges associated with the adoption of these tools for language instruction. Lastly, Patel and Gupta (2024) conducted a comparative analysis of traditional language teaching methods against those augmented with Generative AI support, demonstrating significant enhancements in writing fluency, creativity, and language comprehension when AI tools were incorporated.

The present research aimed to contextualize the findings within the specific nuances of the Thai educational system. Thailand's unique cultural and linguistic context appeared to pose distinctive challenges and opportunities in the implementation of Generative AI-assisted teaching methodologies (Thompson, 2022). By delving into this uncharted territory, the study seeks to contribute not only to the theoretical discourse on innovative teaching methodologies but also to offer practical insights tailored to the Thai educational landscape.

For these reasons, the researcher was interested in conducting a study to investigate the pedagogical Impact of ChatGPT on high-school student's creative writing skills. The significance of this research extended beyond its immediate academic contributions. The findings held the potential to inform educational policies, guide curriculum development, and empower educators to make informed decisions regarding the integration of AI tools in language instruction. As Thailand continued its pursuit of linguistic excellence and global integration, this study aimed to provide a roadmap for leveraging cutting-edge technologies in achieving these goals. In doing so, it contributed to the broader discourse on the role of AI in education and laid the groundwork for future research and innovations in the realm of language teaching and learning.

Research Objectives

The research objectives of this study were:

1) To assess the impact of Generative AI-assisted writing tools, that is ChatGPT, on the creative writing skills of eleventh-grade students before and after exposure during their writing lessons.

2) To compare the creative writing skills of eleventh graders participated in writing lessons with Generative AI-assisted writing tools to those engaged in the conventional teaching approach.

Research Hypothesis

This study's hypotheses were as follows:

1) The mean creative writing skills of eleventh-grade students after engaged in writing lessons with Generative AI-assisted writing tools was higher than before the intervention.

2) The mean creative writing skills of eleventh graders participated in writing lessons with Generative AI-assisted writing tools was higher than those engaged in the conventional teaching approach.

Methodology

This study employed a quasi-experimental research design, specifically adopting a pretest-posttest-control-group design (Somkid, 2020). Ethical principles were rigorously adhered to throughout the study. Prior to participation, all students were informed about the nature of the study, including the fact that they were under investigation, and assured that their scores would not affect their course grades or any other aspect of their academic standing. Informed consent was obtained from both students and their legal guardians, ensuring voluntary participation and confidentiality of data. Efforts were made to ensure fairness in the treatment of the control group. Although Group B did not receive the AI-assisted intervention, they were provided with comparable learning opportunities and resources to mitigate any potential disparities between the groups. Additionally, the selection process for group allocation was conducted randomly, minimizing bias and ensuring equitable treatment. The methodology utilized in this study is detailed below, with particular attention paid to ethical considerations and rationale for design choices:

Population and Samples

The target population encompassed 16,365 eleventh-grade students enrolled in schools overseen by the Chonburi-Rayong Secondary Educational Service Area Office during the second semester of the 2023 academic year (Angsilapittayakom School, 2023). A meticulous multi-stage sampling method was employed to randomly select 84 eleventh-grade students from Angsilapittayakom School as the study's samples. Employing a simple random sampling method, these students were then allocated into two distinct groups, namely Group A (Experimental Group) and Group B (Controlled Group), each comprising 42 students. Group A was exposed to Generative AI-assisted writing tools (e.g., ChatGPT) during their writing lessons, while Group B adhered to a conventional teaching approach. Statistical analyses were conducted using paired sample t-tests and independent-samples t-tests to test the research hypotheses.

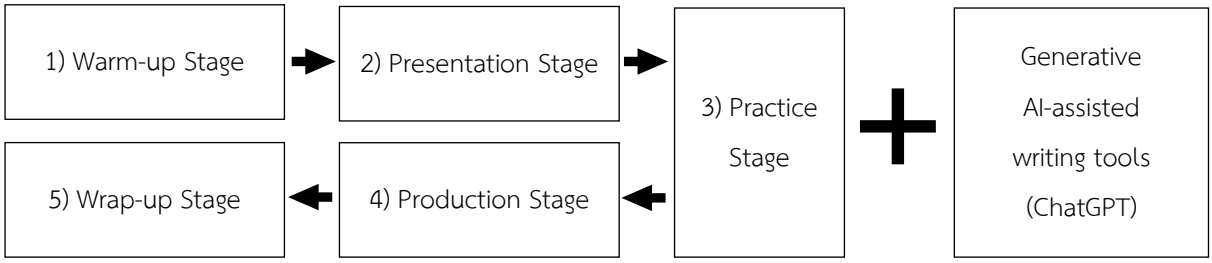
Research Instruments

1) Generative AI Integrated Lesson Plans (10 lesson plans for 20 hours): The lesson plans employed a Communicative Language Teaching (CLT) approach, integrating Generative AI-assisted writing tools, such as ChatGPT, to enhance students' creative writing skills. The strategic incorporation of these tools aimed to provide students with opportunities for generating outlines, refining content, and revising drafts in real-time. The Generative AI integrated lesson plans were meticulously structured, comprising five distinct teaching stages: 1) Warm-up stage, 2) Presentation stage, 3) Practice stage, 4) Production stage, and 5) Wrap-up stage (refer to Figure 1 for a detailed outline). Throughout these stages, ChatGPT was utilized to generate outlines, suggest content revisions, and facilitate the drafting process, enabling students to receive instant feedback and guidance on their writing tasks. Group A students were granted access to and encouraged to use Generative AI-assisted writing tools during their lessons. The utilization of ChatGPT allowed students to engage in interactive writing exercises, where they could experiment with different writing styles, refine their ideas, and improve the coherence and clarity of their compositions. To ensure the robustness of the developed lesson plans, three foreign language learning experts assessed their appropriateness and consistency between learning objectives and activities, utilizing a 5-point rating scale (Somkid, 2020). The composite average quality of all lesson plans stood at 4.32, signifying the highest level of appropriateness. In terms of training, students were provided with introductory sessions on how to effectively utilize ChatGPT for their writing tasks. These

sessions covered topics such as navigating the interface, generating prompts, interpreting suggestions, and incorporating feedback into their drafts. Regarding the choice of ChatGPT version, the study utilized the paid version of the tool, which offered additional features and functionalities compared to the free version. The paid version provided access to a broader range of language models and allowed for more customized settings, enhancing the flexibility and effectiveness of its usage in the classroom setting. While tools like Grammarly were considered for additional support, they were not integrated into the study due to their focus on grammar and syntax correction, which was not the primary emphasis of the intervention. ChatGPT was chosen for its broader capabilities in generating content, providing creative suggestions, and facilitating the writing process, aligning more closely with the study's objectives in enhancing students' creative writing skills.

Figure 1

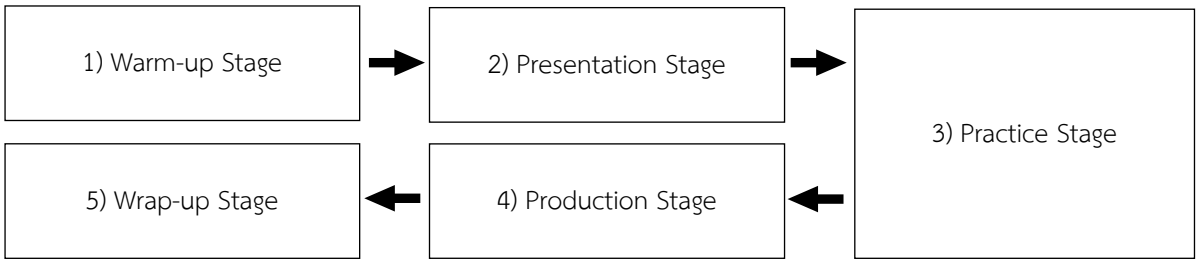
The Communicative Language Teaching (CLT) approach integrating Generative AI-assisted writing tools, such as ChatGPT (Experimental Group)



2) Traditional Teaching Approach Lesson Plans (10 lesson plans for 20 hours): In this strand, the researcher adhered to the Communicative Language Teaching (CLT) approach without integrating Generative AI-assisted writing tools. The lesson plans mirrored those of the Generative AI integrated approach, featuring five teaching stages: 1) Warm-up stage, 2) Presentation stage, 3) Practice stage, 4) Production stage, and 5) Wrap-up stage (Figure 2). Notably, Group B students engaged in learning and practicing their writing skills through activities and tasks assigned by the researcher within the classroom, without the aid of AI-assisted writing tools. Similar to the Generative AI integrated approach, the quality of these lesson plans was evaluated by three foreign language learning experts, attaining an average rating of 4.76, again representing the highest level of appropriateness.

Figure 2

The Communicative Language Teaching (CLT) approach (Controlled Group)



3) Creative Writing Skills Assessment (for collecting pretest and posttest scores): The assessment process encompassed a comprehensive 5-point scoring rubric meticulously crafted to gauge students' creative writing proficiency both before and after the intervention. Each student was tasked with selecting a writing prompt provided by the researcher, tasked with crafting a narrative within a specified time limit of 50 minutes. Throughout this process, students were strictly prohibited from accessing electronic devices or internet resources to ensure the authenticity and integrity of their responses. During the evaluation phase, the resulting writing tasks underwent rigorous assessment by the researcher and two native speakers. They employed the 5-point scoring rubric, which covered five distinct dimensions: 1) Creativity, 2) Development, 3) Voice, 4) Literary Devices, and 5) Literary Conventions (refer to Table 1 for detailed criteria). This comprehensive rubric facilitated a holistic evaluation of students' writing, capturing both qualitative and quantitative aspects of their compositions. To ensure the validity and reliability of the scoring rubric, its index of congruence underwent meticulous scrutiny by three experts specializing in the measurement and evaluation of foreign language learning subjects. The examination yielded congruence values ranging from 0.67 to 1.00, indicating a high degree of alignment between the rubric's criteria and the intended constructs being assessed. Furthermore, the inter-rater reliability of the scoring rubric was assessed by comparing the evaluation results of the three raters (the researcher and two native speakers). The Pearson Correlation Coefficient revealed robust correlations among the raters, with coefficients of 0.98 (researcher and native speaker A), 0.94 (researcher and native speaker B), and 0.97 (native speaker A and native speaker B). These findings underscore the consistency and reliability of the scoring rubric in evaluating students' creative writing skills across multiple raters. In addition to the assessment process, students' writing prompts also reflected a diverse array of topics and themes, allowing for the exploration of various genres

and styles in their narratives. Examples of writing prompts included: (1) Compose a short story inspired by the image of an abandoned house in the woods; (2) Imagine you are stranded on a deserted island; (3) Write a journal entry detailing your experiences and emotions; (4) Create a dialogue between two characters who find themselves in a mysterious situation. Each writing prompt encouraged students to unleash their creativity and imagination, fostering a dynamic and engaging environment for the assessment of their writing skills. The resulting narratives varied in length, typically ranging from 300 to 500 words, allowing students to explore their ideas and develop their storytelling abilities within the given constraints.

Table 1

Scoring Rubric Criteria for Creative Writing Skills Assessment

Creative Writing Skills Aspects	Description
1) Creativity (5 Points)	Proficiency in narrative storytelling and essay composition, marked by inventiveness and compelling content, stands as a defining strength. The student adeptly avoids contrived or frivolous elements, showcasing the ability to encapsulate facets of human experience and life through an original and refreshing lens.
2) Development (5 Points)	Demonstrating a nuanced skill set, the student exhibits a keen proficiency in developing characters, conflicts, and settings throughout a narrative. These elements not only harmonize with the overarching story structure but also contribute to the establishment of a central theme.
3) Voice (5 Points)	A notable hallmark of the student's writing prowess lies in the creation of a distinct and fitting voice for the narrator or speaker. This crafted voice seamlessly permeates and enriches the entire narrative, whether in the form of a story or essay.
4) Literary Devices (5 Points)	The incorporation of literary devices, such as metaphor, simile, symbolism, and personification, reveals a sophisticated grasp of their application. Importantly, these devices are seamlessly integrated, avoiding any semblance of gimmickry or forced inclusion, thus contributing organically to the overall composition.

Creative Writing Skills Aspects	Description
5) Literary Conventions (5 Points)	The student displays a commendable command of standard written English. Writing is executed with precision, devoid of errors in spelling, punctuation, usage, or mechanics. This proficiency underscores the student's commitment to linguistic accuracy and enhances the overall quality of their written work.

Data Collection

The data collection process was systematically executed through a series of well-defined steps:

1) Introduction and Explanation: At the initiation of the first teaching session, both Group A and Group B were provided with a comprehensive introduction to the overall learning and teaching activities. The researchers took great care to ensure that each group had a clear and accurate understanding of the upcoming sessions. Group B received an in-depth breakdown of each step involved in traditional teaching and learning activities, while Group A was given a succinct introduction to the concepts underpinning Generative AI integrated teaching and learning.

2) Pre-Learning Assessment: Before embarking on the first lesson, a pre-learning assessment was administered to all participants in both Group A and Group B. This assessment aimed to gauge the creative writing skills of the students before their exposure to the designated learning activities. Each participant was given 50 minutes (equivalent to one class period) to select a writing prompt provided by the researcher and craft a narrative. Crucially, the use of electronic devices or internet resources during this process was strictly prohibited. The resulting writing tasks underwent thorough evaluation by the researcher and two native speakers, utilizing the 5-point scoring rubric developed specifically for this purpose. An in-depth analysis of the pre-test scores, as presented in Table 2, revealed no statistically significant differences in the creative writing skills of the two groups. These pretest scores served as the baseline data for this initial stage.

Table 2

The analysis of the sample groups' pre-test scores (Total Score: 25 Points)

Variable	Group A (N = 42)		Group B (N = 42)		t	Sig.
	M	S.D.	M	S.D.		
Pre-test scores of Creative Writing Skills	11.46	7.12	12.86	8.23	1.04	0.35

*No statistical significance at a 0.01 level

3) Teaching Sessions: The subsequent phase involved the implementation of teaching sessions based on the designated lesson plans. Over the course of 20 hours, Group A experienced instruction utilizing the Generative AI Integrated lesson plans, while Group B adhered to the traditional teaching approach lesson plans.

4) Post-Learning Assessment: Upon the completion of the 20-hour teaching sessions, a post-learning assessment of creative writing skills was conducted to evaluate the participants' progress. Participants were given another 50-minute period to compose a narrative based on a different writing prompt provided by the researcher, ensuring variability from the pretest conditions. Similar to the pretest, the use of electronic devices or internet resources was strictly prohibited. The resulting writing tasks underwent meticulous evaluation by the researcher and two native speakers, utilizing the same 5-point scoring rubric. The data collected at this stage constituted the participants' posttest scores, providing insights into the impact of the teaching interventions on their creative writing skills.

5) Data Analysis: Following the collection of both pretest and posttest scores, a rigorous data analysis was undertaken to test the research hypotheses. Statistical methods were applied to scrutinize the differences and potential correlations between the two groups, shedding light on the effectiveness of the teaching approaches in enhancing creative writing skills. This analytical phase served as a crucial bridge between the data collection and the subsequent interpretation of results.

Data Analysis

The data analysis procedures are outlined below:

1) Calculation of Raw Scores: The mean and standard deviation (S.D.) were employed to compute the raw scores derived from the creative writing skills assessment.

2) Paired Samples t-test: The t-test for paired samples was utilized to examine the potential differences between Group A's pre-learning creative writing skills assessment scores and their corresponding post-learning creative writing skills assessment scores.

3) Independent Samples t-test: To discern any variations in creative writing skills following the teaching sessions, the t-test for independent samples was employed. This specific analysis focused on comparing the post-learning creative writing skills assessment scores of Group A with those of Group B.

Findings

The research findings are presented here in alignment with the specified research objectives:

1) Research Objective 1: To assess the impact of Generative AI-assisted writing tools (e.g., ChatGPT) on the creative writing skills of eleventh-grade students before and after exposure during their writing lessons, the research results are detailed in Table 3.

Table 3 *The comparison of Group A's creative writing skills before and after implementation of Generative AI-assisted writing tools during their writing lessons. (Total Score: 25 Points)*

Creative Writing Skills	M	S.D.	t	Sig.
Before the integration of Generative AI tools	11.46	7.12	17.91	0.00*
After the integration of Generative AI tools	22.72	5.72		

*Statistical significance at a 0.01 level.

Examining Table 3 revealed a notable increase in the creative writing skills of the Group A's students following the implementation of Generative AI-assisted writing tools (e.g., ChatGPT) during their writing lessons (M = 22.72, S.D. = 5.72). This was in stark contrast to their creative writing skills before the integration of Generative AI tools (M = 11.46, S.D. = 7.12). The observed difference reached statistical significance at the 0.01 level, aligning with the first

research hypothesis. This finding underscored the positive impact of incorporating Generative AI tools into writing lessons, with students exhibiting a substantial enhancement in their creative writing skills. The statistically significant difference indicated the effectiveness of this technological intervention in fostering creativity among eleventh-grade students.

2) Research Objective 2: To compare the creative writing skills of eleventh graders participated in writing lessons with Generative AI-assisted writing tools to those engaged in the conventional teaching approach. A comprehensive overview of the research findings was outlined in Table 4.

Table 4 *The Comparison of Creative Writing Skills Between Group A and Group B After Writing Lessons (Total Score: 25 Points)*

Creative Writing Skills	M	S.D.	t	Sig.
After participated in writing lessons with Generative AI-assisted writing tools (Group A)	22.72	5.72	14.46	0.00*
After engaged in the conventional teaching approach. (Group B)	19.82	7.42		

*Statistical significance at a 0.01 level.

The data presented in Table 4 revealed a distinct contrast in creative writing skills between the experimental group (Group A) and the controlled group (Group B) following their respective learning approaches. Specifically, the mean creative writing skills score for Group A, engaged in writing lessons with Generative AI-assisted writing tools (M = 22.72, S.D. = 5.72), surpassed that of the controlled group (Group B), which underwent the conventional teaching approach (M = 19.82, S.D. = 7.42). This disparity exhibited statistical significance at the .01 level, aligning seamlessly with the second research hypothesis. The findings underscored the efficacy of incorporating Generative AI-assisted writing tools in enhancing students' creative writing skills. The statistical significance accentuated the superiority of this innovative approach compared to traditional teaching methods, offering valuable insights for educators and researchers in the field.

Discussion and Conclusions

The observed substantial enhancement in the creative writing skills of eleventh-grade students after exposure to Generative AI-assisted writing tools, as outlined in Table 3, resonated with a plethora of research at the intersection of technology and language learning. A comprehensive review by Anderson et al. (2021) delved into the transformative potential of AI in shaping modern educational landscapes. The study accentuated the adaptive and personalized nature of AI tools, mirroring the observed improvement in creative writing skills among Group A students. The authors asserted that strategically integrated technology has the capacity to cater to individual learning needs, fostering a more dynamic and responsive educational environment.

Moreover, the findings from this study aligned with Johnson and Smith's (2019) exploration of the impact of AI on language learning. Johnson and Smith highlighted the role of technology, specifically AI tools, in providing novel avenues for language practice and creative expression. Their research suggested that AI tools, endowed with the capacity for generating contextually relevant content, act as catalysts for language development. This aligned seamlessly with the observed increase in creative writing skills among students utilizing Generative AI tools, where the technology functioned as a facilitator for linguistic exploration and expression.

The statistical analysis conducted in this study adds quantitative weight to the discussion. The notable increase in creative writing skills among Group A students, from a pre-intervention mean score (M = 11.46, S.D. = 7.12) to a post-intervention mean score (M = 22.72, S.D. = 5.72), was statistically significant at the 0.01 level. This empirical evidence reinforced the findings of Anderson et al. (2021) and Johnson and Smith (2019), providing concrete support for the positive impact of Generative AI on language learning and creative expression.

The comparison between Group A and Group B, detailed in Table 4, provided further evidence of the effectiveness of the Generative AI-assisted approach in enhancing students' creative writing skills. This corroborates findings from the research conducted by Taylor and Martinez (2020), who conducted a detailed investigation into the utilization of ChatGPT as a tool for enhancing creative writing instruction. Taylor and Martinez's study shed light on how they integrated ChatGPT into the writing process, highlighting its capacity to offer real-time feedback and guidance to students. Taylor and Martinez employed ChatGPT to provide various types of feedback to students during their writing tasks. This feedback encompassed both

language-related suggestions, such as grammar corrections and vocabulary enhancements, as well as content-related guidance, including ideas for plot development and character interactions. By leveraging the capabilities of ChatGPT, students were able to receive comprehensive feedback on multiple aspects of their writing, allowing them to refine their compositions and enhance their overall writing proficiency. The observed statistical significance in creative writing skills between the experimental and controlled groups echoed Taylor and Martinez's findings, suggesting that the interactive and dynamic nature of ChatGPT contributed significantly to skill development.

The success of Generative AI in this study is congruent with theoretical frameworks that underscore the augmentation effect of technology in education, as highlighted by Clark and Jones (2018). This theoretical perspective posits that technology serves as a catalyst for enhancing human capabilities rather than replacing them outright. In the context of this study, Generative AI, exemplified by ChatGPT, was integrated as a supplementary tool within the instructional framework. It functioned to augment students' creative writing abilities by providing real-time feedback and guidance, thereby enriching the learning experience. The statistically significant improvement observed within Group A, particularly when compared to their pre-intervention scores, lends support to this conceptualization. It indicates that the utilization of Generative AI, in this case, ChatGPT, acted as a supportive mechanism, facilitating the development and refinement of students' creative writing skills. Rather than serving as a standalone instructional approach, the integration of ChatGPT within the educational context was intended to complement traditional teaching methods, offering additional avenues for student engagement and learning enhancement. Considering the role of ChatGPT within this framework, it becomes apparent that its use should primarily be regarded as supplementary rather than exclusive. While Generative AI tools like ChatGPT offer valuable support in facilitating the writing process and providing feedback, they should not overshadow the role of human instructors or replace traditional teaching methodologies entirely. Instead, ChatGPT should be utilized as a complementary resource, supplementing existing instructional practices to enrich students' learning experiences and foster their development of creative writing skills. By striking a balance between human guidance and technological assistance, educators can harness the full potential of Generative AI in enhancing language learning and writing instruction.

In conclusion, the discussion of the research findings weaved into a rich tapestry of related studies exploring the impact of AI on language learning and creative expression. The consistent theme across these studies highlighted the potential of Generative AI-assisted writing tools in fostering linguistic development and creative skills. The varied perspectives offered by Anderson et al. (2021), Johnson and Smith (2019), and Taylor and Martinez (2020) contributed to a comprehensive understanding of the multifaceted benefits of integrating Generative AI into language education.

As we navigated the implications of these findings, it became evident that the landscape of language education was evolving. The synthesis of theoretical frameworks and empirical evidence underscored the transformative potential of Generative AI in shaping the future of language learning. This discussion not only contributed to the academic discourse but also provided practical insights for educators and policymakers seeking innovative approaches to enhance students' language proficiency and creative expression. Future research endeavors could further unpack the nuances of these interventions, exploring the long-term sustainability and broader implications for language education in a technologically driven era.

Recommendations

Recommendations for Using Research Results:

The findings of this study presented practical implications for educators, policymakers, and stakeholders involved in shaping language education, particularly in the context of Thailand. To leverage the research results effectively, the following recommendations were proposed:

1) Integration of Generative AI in Writing Curriculum: Educators are encouraged to integrate Generative AI-assisted writing tools, such as ChatGPT, into the writing curriculum. The positive impact observed in enhancing students' creative writing skills suggests that incorporating these tools can contribute to more dynamic and effective language instruction.

2) Professional Development for Educators: Given the transformative nature of technology in education, it is recommended that educators receive training and professional development opportunities to familiarize themselves with Generative AI tools. This will empower them to effectively integrate these tools into their teaching methodologies and maximize the benefits for students.

3) Adaptive Learning Environments: Schools and educational institutions should consider creating adaptive learning environments that leverage Generative AI to cater to individual learning needs. The personalized and contextually relevant nature of AI tools can enhance the overall learning experience for students, allowing for tailored approaches to language instruction.

Recommendations for Future Research:

While this study shed light on the positive impact of Generative AI on creative writing skills, there were avenues for further exploration and research. The following suggestions guide future research endeavored:

1) Long- Term Effects and Sustainability: Future research should focus on investigating the long-term effects and sustainability of incorporating Generative AI in language education. Understanding the durability of the observed improvements over extended periods will provide insights into the lasting impact of these interventions.

2) Exploration of Student Perceptions: Examining students' perceptions and attitudes toward Generative AI-assisted writing tools can provide valuable qualitative insights. Future research could employ surveys, interviews, or focus group discussions to understand how students perceive and engage with these tools in the learning process.

3) Comparative Studies Across Educational Levels: While this study focused on eleventh-grade students, future research could explore the impact of Generative AI tools across different educational levels. Comparative studies can provide a nuanced understanding of how these tools influence language learning at various stages of academic development.

4) Cross-Cultural Studies: Given the global applicability of Generative AI, cross-cultural studies can broaden the understanding of its impact on language learning. Comparative analyses across different cultural and linguistic contexts will contribute to a more comprehensive view of the effectiveness of these tools.

5) Exploration of Different AI Models: This study focused on ChatGPT; however, future research could explore the impact of other Generative AI models on language education. Comparing various AI models may reveal nuanced differences in their effectiveness and suitability for specific educational objectives.

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