Human-AI Collaborative Translation Pedagogy: Reflective Learning and Translation Competence in Thai EFL Classrooms

Sommai Rodpan

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Abstract
This study investigated the impact of AI-assisted translation activities on the performance and reflective learning of undergraduate students enrolled in a Translation of Literary Texts course at a university in Northern Thailand. Data from pre- and post-tests, classroom observations, interviews, and reflection journals were used to draw conclusions regarding the impact of these activities on the students. Results indicated that undergraduate students' performance and reflective learning skills improved because of the integration of AI-assisted translation activities into the course. Overall, then, it appears that AI tools provided the type of scaffolding that allowed for improvements in the students' translation and reflective learning skills, indicating the potential for the use of AI in translation classrooms.
Key words: AI-assisted translation, reflective learning, translation competence, human–AI collaboration, Thai EFL classrooms

Introduction

Artificial intelligence (AI) technologies, specifically generative AI tools such as ChatGPT, have rapidly developed in recent years and have begun to transform the field of language education and translation. AI-assisted systems are often utilized in language learning and translation classrooms due to their ability to provide feedback to learners and translators. AI technologies allow translators to explore alternative translation choices, improve the accuracy of their translations, and reduce the time required to complete these translation efforts.

Previous research has shown that AI-assisted translation tools can increase the grammatical accuracy, lexical accuracy, fluency, and naturalness of the translations produced by language learners (Gao et al., 2024; Mohsen, 2024). Additionally, other studies have revealed that AI-assisted language learning tools can increase the engagement, awareness, and revision skills of language students (Athanassopoulos et al., 2023; Xiao & Zhi, 2023). Thus, AI technologies have the potential to positively impact the field of translation and the development of translation skills of students.

Despite the positive impact of AI-assisted translation technologies on language and translation classrooms, some researchers have recognized certain concerns regarding the increasing integration of these technologies into language classrooms. For instance, recent studies have indicated that generative AI has the potential to function as a scaffold for translation. By providing feedback on the translations that the learners have produced, the AI systems encourage the learners to become more actively involved in the translation and revision process (Xu et al., 2024; Alsharef et al., 2026; Massey & Ehrensberger-Dow, 2026). As such, many recent discussions regarding AI-assisted translation technologies focus on the importance of reflective and collaborative learning between the students and the AI, as opposed to dependence on the AI for translations.

In general, research regarding AI-assisted translation technologies is growing in popularity and interest. However, there remains a lack of research regarding how EFL translation students interact with the translations generated by AI in their translation classrooms, specifically within the context of Thai higher education. Most existing studies have focused upon the impact of AI on the outcomes of translation tasks but have ignored the reflective and collaborative aspects of language translation classrooms.

Therefore, it is necessary to conduct a research study regarding the integration of ChatGPT into the translation classrooms that exist within Northern Thailand's university classrooms. As such, this study will investigate the performance of students in these translation classrooms, as well as investigate the impact that the translation activities using AI have had on their abilities to engage in reflective and collaborative learning with the AI within their EFL classrooms.

Research Objectives

1. To examine students' translation performance after participating in AI-assisted translation class.
2. To identify translation features that AI-assisted feedback helps students improve during translation exercises.

Literature Review

Artificial Intelligence in translation has significantly influenced the Language Translation Classroom. The impact of AI on language translation learning has been explored by researchers to determine the impact of using AI applications to assist language translation learning on the linguistic accuracy and translation quality of language learners. Most studies on the impact of AI on language learning are general language learning studies, rather than specific studies investigating the impact of AI on translation studies. Most of the previous research on language learning with AI technology has focused on the benefits of AI technology on language learning, rather than the interaction between the language and AI learning processes. The literature review of previous research studies on AI-assisted language translation learning aims to investigate and identify the gaps in the current research in this field, which will guide the research to be presented in this paper.

AI and the Changing Landscape of Translation Pedagogy

AI technologies have significantly influenced the translation classroom. AI technologies can provide immediate feedback on the translation productions of language learners and can adapt to the translation suggestions of language learners. Furthermore, generative AI technologies, like ChatGPT, allow for the creation of an adaptive translation classroom in which language learners can explore different translation possibilities for the same text (Kasneci et al., 2023). AI technology can transform the translation classroom into a space that is focused on the language learners in the classroom while also allowing the instructor to maintain a presence within the classroom (Kasneci et al., 2023).

However, there are both pro-AI and critical studies regarding the use of AI technologies in language translation classrooms. Pro-AI studies demonstrate that using AI applications to aid in language learning increases the engagement, accuracy, and development of the individual learning processes of the language learners (Athanassopoulos et al., 2023). On the other hand, from the perspective of the critics of AI-assisted learning, overdependence on generative AI can hinder the critical thinking and problem-solving skills of the students. As students rely heavily on the answers provided to them by AI applications, they tend to participate less in the learning process and exhibit less critical and cognitive thinking skills when approaching the subject matter (Kasneci et al., 2023; Georgiou, 2025). AI technology does have a significant impact on language learning in translation classrooms. However, most of the studies regarding the use of AI technology in language learning have focused on language writing skills rather than language translation skills.

Translation Competence and AI-Assisted Learning

Translation competence is associated with the skills of language learners in relation to linguistic, textual, extra-linguistic, strategic, and technological skills (PACTE Group, 2003). These five different aspects of translation competence allow translation learners to become competent in their translation skills by ensuring that they understand the source text and that the technology and translation skills that they employ will create a translated text that is appropriate for the audience of that text. AI technologies, such as ChatGPT, have the potential to increase the translation competence of language translation learners by increasing the quality of the texts that are translated by language learners (Mohsen, 2024; Gao et al., 2024). The use of AI-assisted translation systems allows language translation learners to produce better translations of texts. However, the use of AI-assisted translation systems does not ensure that language learners have developed their translation competence (Alves & Hurtado Albir, 2017).

Furthermore, few studies have investigated whether language translation learners who use AI-assisted translation systems develop an understanding of the suggestions that the AI systems provide to the language learners. This area of study indicates a gap in the translation learning process with AI-assisted translation systems.

Linguistic and Stylistic Dimensions of AI-Assisted Translation

AI-assisted translation systems have shown considerable potential in improving the linguistic and stylistic quality of the translated texts by learners. AI systems have the potential to improve the vocabulary, grammar, and fluency of the translated texts submitted by the learners. Additionally, the system allows learners to revise and refine their translations, leading to improvements in both the linguistic and stylistic aspects of the translations (Jiao et al., 2023; Xu et al., 2024). Furthermore, AI-assisted translation systems have been demonstrated to improve the naturalness and consistency in the translation skills of language learners.

These improvements in the language translation skills of language learners are significant in that the translation skills of language learners depend upon these different linguistic and stylistic aspects. The generative AI systems that language learners use have the potential to produce language translations with improved flexibility compared to the translation systems that are used within language education traditionally. However, few studies have investigated whether the language learners who use AI-assisted translation systems develop linguistic and stylistic translation skills. These AI systems will produce improved and accurate translations, but little is known about the development of translation skills within language learners utilizing these AI-assisted systems.

Human-AI Interaction and Reflective Translation Practice

Some scholars state that AI-assisted translation systems have the potential to allow language learners to develop their translation skills by providing language learners with the scaffolding of the translation skills and knowledge that they themselves have developed (Tran & Tran, 2023). The scholars, however, argue that the use of AI-assisted translation systems can weaken the critical translation skills of language learners when they are excessively reliant upon AI-generated translations. AI-assisted translation systems can contribute to the reduction of the critical translation skills necessary for learners to fully understand the linguistic, contextual, and cultural aspects of the translation process, limiting their development of translator autonomy (Kornacki, 2025; Zhang, 2025). Both views are crucial to the discussion of language translation skills and the value of AI-assisted translation systems in language translation classrooms.

Despite the increased use of AI-assisted translation systems in language translation classrooms, few studies have investigated the reflective behavior of language translation learners who use AI-assisted translation systems. The value of the translation skills that language learners have developed using AI-assisted translation systems

should be based on the translation skills that the language learners have developed with the use of these systems compared with the improved translation skills of AI-assisted systems. However, despite the increased use of AI-assisted translation systems, there is a lack of research investigating the interactional and reflective dimensions of the language translation learners and the AI-assisted translation systems that they utilize in their classrooms.

Critical AI Literacy and Ethical Concerns

A third field of research regarding AI and language translation learning is the ethical concerns regarding language translation with AI-assisted systems. Some scholars state that AI-assisted translation systems have the potential to reduce the independent thinking of language translation learners as they rely upon the AI-assisted systems to develop their translation skills and knowledge (Andrade Preciado et al., 2025). Furthermore, various studies have demonstrated that language translation learners have concerns regarding the dependence on AI-assisted translation systems, the potential for the information within the translations to be made publicly available (information leakage), and the potential impact that the development of AI-assisted translation systems could have upon the future employment opportunities of language translation graduates (Wu et al., 2025). Other scholars, however, state that language translation learners must develop critical AI literacy in utilizing these AI-assisted translation systems as they develop their translation skills (Pietrzak & Kornacki, 2020).

Therefore, AI-assisted translation systems should not focus on the technological improvements to the language translation classroom. Instead, the value of these systems should be investigated in the context of how they can be used in the classroom to encourage language translation learners to develop their critical and reflective translation skills.

Research Gap

AI-assisted translation systems have been demonstrated to improve the grammatical accuracy, vocabulary use, and translation fluency of language translation learners (Su, 2026; Gu et al., 2025). However, the majority of the previous research regarding the impacts of AI-assisted translation systems on language translation learning has focused on the outcomes of the translation learners rather than the interaction of language learners and AI-assisted systems. Although recent research within this field indicates that the use of AI-assisted translation systems changes the cognitive processes of language translation learners, most studies focus on the outcomes of the translation rather than the cognitive processes of the language translation learners.

For example, Su (2026) conducted a study in which language translation learners who used AI-assisted translation systems were found to shift from generative modes in the creation of their translations to the verification mode in which they focused on the review and revision of their AI-assisted translations. Furthermore, Gu et al. (2025) found equivalent results to those of Su in that the language translation learners who performed the post-editing of the translations created by AI-assisted systems developed a better ability to evaluate and reflect upon their translation processes. Yet, limited research exists in the investigation of reflective learning, evaluative judgment, and translation practices between language learners and AI-assisted translation systems. Furthermore, AI-assisted translation systems struggle to understand culturally embedded meanings in texts to be translated (Al-Azzawi et al., 2025; Idris, 2026).

Thus, the main aim of this study is to investigate the interaction of AI-assisted systems with language translation learners in translation classrooms, especially in the context of EFL translation students in higher education in Thailand. Moreover, this study will specifically investigate the interaction between these two groups with translation-assisted AI systems like ChatGPT.

Research Methodology

Research Design

The research study that was performed in this investigation was a mixed-methods research design to determine the effects of AI-assisted translation tasks on the performance and practices of students in the completion of translation tasks. The use of a mixed-methods research design enables researchers to investigate both quantitative and qualitative data regarding the same topic and provides additional analyses from two different perspectives on the same topic.

More specifically, within this research investigation, the type of mixed methods research design that was used was a convergent model. In this type of research investigation, both qualitative and quantitative data were collected from the participants of the research investigation. Each of these types of data was analyzed individually by the researchers, and the findings from each set of analyses were published as separate findings within the research investigation. The study was conducted over a 12-week semester within an undergraduate translation course.

Participants and Research Context

The participants in this investigation were 20 groups of undergraduate translation students (approximately 87 students in total) who enrolled in a translation course during the first semester of the 2025 academic year. The translation course is a course that is provided by the English Department as part of their curriculum for undergraduate students, and it is a course that requires the translation of literary and expressive texts from Thai to English. Therefore, while all 87 students participated in the translation course, the qualitative analysis was performed by analyzing the 20 groups of students who participated in the translation tasks within the course.

Purposive sampling was used to select the participants in this investigation. All students who enrolled in the translation course were automatically and guaranteed to participate in the research investigation. Furthermore, all students had intermediate to upper-intermediate proficiency in the English language prior to enrollment in the course.

This course and topic were utilized for the research investigation due to the relationship between translation tasks and the topic of the research investigation.

Intervention

The intervention that was performed within the course was the integration of the AI language model ChatGPT into the translation tasks that were performed by the students each week in the translation course. Such integration occurred throughout the translation course and included, for example, tasks that asked the students to perform their translations with the assistance of the AI language model, to compare the translations that they performed themselves to those drafted by the AI language model, to discuss their translations within the course and compare them to those drafted by the AI language model, to reflect upon their translations in comparison to the suggestions that were provided to them by the AI language model ChatGPT, and to assess the appropriateness of the translations that they created in comparison to those suggestions from the AI language model.

The students were never permitted to copy the translations that were drafted by the AI language model. Any discussions of translation tasks occurred within the classroom, with the instructors of the course, and the students performed any required translation revisions during these classroom discussions.

Research Instruments

Translation Pre-Test and Post-Test

Two translation tests were performed for the students who were participating in the study. A pre-test was performed at the beginning of the semester (during week 1), and

a post-test was performed after the completion of the semester (during week 12). Each translation test asked the students to translate approximately 500 words of Thai text into English. The texts to be translated contained different types of linguistic elements (such as figurative language, expressions, vocabulary, etc.). The translations were scored using a translation rubric that was adapted from the PACTE framework for translation competence. The rubric contains six different criteria for evaluating translation tasks:
Table 1 Criteria for evaluating translation tasks

Criterion	Description
Accuracy	Ensured that the meaning of the Thai text was preserved
Lexical Choice	Utilized appropriate vocabulary to translate the text
Grammar	Ensured that the English text contained correct grammatical structure
Style and Naturalness	Evaluated the fluency of the English text
Cultural Equivalence	Ensured that the cultural meaning of the Thai text was preserved
Coherence	Ensured that the logical structure of the ideas within the Thai text were preserved

Each of these criteria was scored on a five-point scale (with five indicating excellent performance in the criteria). Two raters who had expertise in translation would perform the assessments of the students' translation scripts. The reliability of the rubric was calculated using Cohen's Kappa prior to evaluating the students' scripts.

Classroom Observation and Translation Artifacts
Observations were performed of the students and their performance of their translation tasks within the classroom. Such observations included the students' discussions of their translation tasks and their translation scripts, as well as the translation scripts of the students prior to and after their utilization of the AI language model.
Semi-Structured Interviews
Interviews were performed with the students after the completion of the semester. Each interview was guided by a set of semi-structured questions that related to the topic of the study, such as questions regarding their perceptions of the AI language model ChatGPT, their experiences using the AI language model to draft their translation tasks, and any other topics related to the study. Each interview took place between 30 and 45 minutes and was recorded with the consent of the students participating in the interview.

Reflection Journals
Each student was required to submit a translation journal each week during the semester. Each translation journal asked the students to reflect upon and describe any challenges that they encountered during that week's translation tasks, any challenges related to the use of the AI language model to assist with their translation tasks, any changes to their translation tasks after using the AI language model, and their thoughts regarding the suggestions that the AI language model made for their translation tasks.

Data Collection Procedures
The data were collected during three main phases of the translation course during the semester.
During the first phase (during week 1), the aims of the study were explained to each student; they were required to provide their consent to participate in the study, were

informed of the ethical use of AI language models like ChatGPT, and were administered the pre-test.
During the second phase (during weeks 2-11), the students continued to perform their translation tasks of the Thai texts into English, with the integration of AI-assisted translation tasks into the course; their performance of these tasks was observed by the instructors, their translation scripts were collected, and each student was provided with a translation journal template.
During the third phase (during week 12), the post-test, the interviews, and all translation journals were collected from the students.

Data Analysis

Quantitative Data Analysis

The quantitative data that were collected from the pre-test and the post-test were analyzed using descriptive and inferential statistical tests in the statistical software package SPSS. Descriptive statistics were used to summarize the data from the students' translation tasks, and inferential statistics (specifically a paired-sample t-test) were used to determine whether there was a statistically significant difference between their translation task scores before and after the implementation of AI-assisted translation tasks.

Qualitative Data Analysis

The qualitative data that was collected from the interviews with the students, the observations of the students in the classroom, and their translation journals were analyzed using thematic analysis as described by Braun and Clarke (2006).

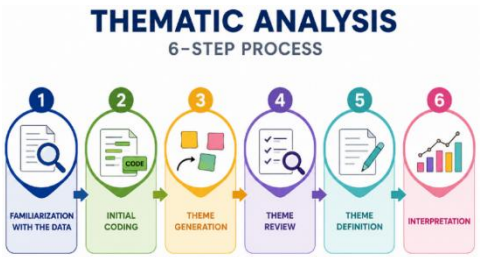


Figure 1 Thematic Analysis Procedures adapted from (Bruan and Clarke, 2006)

First, the researchers collected the qualitative data. Following this initial step of collecting the data from the interviews, observations, and journals of the participants in the study, the researchers reviewed the collected qualitative data to develop codes for the data. Following the development of these codes, the researchers reviewed the qualitative data that had been coded to develop themes for the research study. Following the development of these themes from the qualitative data, the researchers reviewed each of the themes to determine which themes would be represented in the research study and the research report regarding the study. Additionally, the researchers determined the coding categories and the themes that represented each theme. Following this step, the researchers reviewed and verified the themes developed for the research study to ensure that the themes were relevant to the data that was collected from the students in the course and to the objectives of the research study. Finally, the researchers made a cautious determination of the findings of the study regarding the research objectives but avoided making any generalizations beyond the data that was collected from the students in the translation course.

Triangulation
The data from the translation tests, the observations of the students performing the translations, the interviews with the students, the journals of the students, and the artifacts of the students' translations were triangulated to determine any themes or findings in the research study in relation to each of these separate sources of data. Additionally, the interpretations of the findings were derived through the triangulation of these separate data sources.

Trustworthiness and Research Rigor
To improve the trustworthiness of the findings of the research study, various procedures were implemented in the analysis of both the qualitative and quantitative data collected as part of the research study. For instance, the translations were evaluated by two different raters. Additionally, the researchers engaged in each of the classes throughout the semester, triangulated the different data sources, and followed the steps in the coding of the qualitative data as described above. The findings of the study were interpreted cautiously, and only in relation to the data that was collected from the students enrolled in the translation course.

Ethical Considerations
Ethical approval for this research study was obtained from the Institutional Review Board of the University of Phayao. Each of the students who participated in the research study was made aware of the aims of the study, that their participation in the research study was voluntary, that their identities were to be protected during the research study, and that they could withdraw from the study at any time. To protect the anonymity and identities of these students, each of the students was referred to by pseudonyms in any research reports or analyses of the research study. Additionally, each of the students was made aware that AI software named ChatGPT was to be utilized as a learning tool within the classroom.

Results and Discussions
Students' Translation Performance after AI-Assisted Translation Activities

Table 2 Comparison of Students Translation Competence before and after AI-Assisted Instruction

Translation Performance	Pre-Test Mean	SD	Post-Test Mean	SD	*t*	*p*	*Cohen's d*	Interpretation
Accuracy	2.71	0.52	4.08	0.43	-12.45	.001***	2.88	Large
Lexical Choice	2.65	0.49	4.02	0.46	-11.87	.001***	2.87	Large
Grammatical Accuracy	2.58	0.56	4.15	0.41	-13.62	.001***	3.18	Large
Style and Naturalness	2.74	0.51	4.10	0.44	-12.03	.001***	2.85	Large
Cultural Equivalence	2.69	0.48	3.92	0.47	-10.74	.001***	2.58	Large

Coherence	2.77	0.50	4.18	0.39	-13.11	.001***	3.13	Large
Overall Mean	2.69	0.51	4.08	0.43	-12.97	.001***	3.00	Large

(n = 87, *** p< 0.001)

Table 1 demonstrated a substantial improvement in students' translation competence after participating in AI-assisted translation activities. The results showed a remarkable improvement in all dimensions of translation competence; however, there were certain dimensions of translation competence that showed higher rates of improvement than others.

The most substantial improvement was observed in the dimension of grammatical accuracy (Pre-test M = 2.58, Post-test M = 4.15, d = 3.18). AI-assisted translation activities helped students to discover their grammatical problems and enhanced their sentence restructuring skills. This finding corroborated the findings of Jaruwatsawat et al. (2024), who also discovered that EFL students found AI-assisted translation applications to be highly beneficial in enhancing their grammar skills. Similarly, Wu et al. (2025) also discovered that university students found the use of generative AI-assisted translation applications to be beneficial in the correction of their grammar and the restructuring of the sentences that they were translating.

Another dimension that demonstrated a remarkably large effect size was the dimension of coherence (d = 3.13). This finding may indicate that generative AI systems had contextual translation and editing capabilities. Wu et al. (2025) argued for the contextual translation and editing capabilities of GenAI translation tools. Furthermore, the findings of the present study also correspond with the findings of Su (2026), who also discovered that AI-assisted translation activities shift the translators' mode of translation from generative to verification mode.

The findings for the dimension of lexical choice (d = 2.87) and the dimension of style and naturalness (d = 2.85) also showed that the student teachers were able to go beyond the literal translation of the source language to the target language through these AI-assisted translation activities. AI-assisted translation applications allowed for translations that were more contextually appropriate than those of machine translation systems. Furthermore, Muftah (2025) also discovered that the development of technological competence and the enhancement of the translator's awareness of the stylistic aspects of the language that was to be translated were developed as a result of the translation process that was assisted by AI systems.

Although the dimension of cultural equivalence had the lowest effect size for improvement (d = 2.58), the size of the effect was still large. This finding was important because it indicated that the dimension of cultural equivalence was among the most challenging for translators to master and was still present as one of the major difficulties within AI-assisted translation environments. This finding corresponded with the arguments of Al-Azzawi et al. (2025), who found that AI translation systems struggle with the subtle meanings of the languages being translated. Furthermore, Idris (2026) also made similar arguments regarding AI-assisted translation systems being challenged with the execution of cultural translation of texts. In both cases, human interpretative skills are still required for translation activities, even in the presence of AI technologies.

Furthermore, the overall effect size for translation competence was also remarkably large (d = 3.00). This indicated that AI-assisted translation environments could contribute to the development of translation competence by developing skills related to translation learning and reflective judgment. These findings were in alignment with the PACTE Group's model of translation competence. Furthermore, recent findings of Pietrzak and Kornacki (2020) also aligned with these findings, suggesting that the

purpose of AI-assisted translation environments in education was to develop reflective translators to enhance human-AI collaboration in translation environments.

Translation Features Improved Through AI-Assisted Revision

To address the second research objective, the translation features that improved as a result of the translation activities were analyzed using the data collected from the observations, artifacts, journals, and interviews. The analysis of these features revealed five major categories of translation features that began to improve because of the translation activities: grammatical, lexical, stylistic and discourse features, genre and cultural features, and reflective and strategic translation features.

Table 3 Frequency of Linguistic Problems Identified in Students Translations

Linguistic Problems	Frequency (f)	Percentage (%)
Articles	19	95.00
Collocations	18	90.00
Subject–Verb Agreement	17	85.00
Lexical Choice	17	85.00
Sentence Structure	16	80.00
Tense Usage	15	75.00
Fluency/Naturalness	15	75.00
Punctuation	13	65.00
Passive Voice	10	50.00
Serial Verbs	8	40.00

n = 20 of translation groups**,** Mean frequency = 14.8**,** Standard Deviation (SD) = 3.64

Grammatical issues represented the most common translation problems encountered by the students. The most problematic for the students was the correct use of articles, at 95.00%, followed by problems with collocations at 90.00% and subject-verb agreement at 85.00%. These findings showed that the students had difficulties with grammatical structures that were significant in both Thai and English.

These observations in the classroom demonstrated how the students used ChatGPT to find and correct grammatical errors in their translations. Most of the students noted that the AI found their grammatical mistakes during their translation of the sentences that they themselves had made.

One student noted in his journal that ChatGPT was of great assistance to him in learning about articles in English:

> *"ChatGPT helped me understand how articles work in English because Thai does not use articles in the same way."*

Another student noted:

> *"I began to notice my mistakes in subject-verb agreement after comparing my translation with the version generated by the AI."*

These findings indicated that the students became more aware of the grammatical structures in the English language during the translation tasks with the assistance of AI. These findings were in line with the findings of Athanassopoulos et al. (2023) and Xiao and Zhi (2023), who also indicated that the use of AI-assisted learning tools enhances the grammatical accuracy and awareness of the second language being learned by the students.

Table 4 Lexical Features and Vocabulary Refinement

Functions of ChatGPT	Frequency (f)	Percentage (%)
Grammar Correction	19	95.00
Vocabulary Enhancement	18	90.00
Sentence Restructuring	17	85.00
Stylistic Improvement	16	80.00
Academic Tone Adjustment	15	75.00
Meaning Clarification	14	70.00
Literary Enhancement	13	65.00
Contextual Refinement	12	60.00
Genre Adjustment	11	55.00
Cultural Interpretation	8	40.00

n = 20 of translation groups**,** Mean frequency = 14.3**,** Standard Deviation (SD) = 3.53

The findings indicated that students used ChatGPT to improve their lexical choice and increased their vocabulary accuracy during the translation process. The enhancement of vocabulary was identified as one of the most common functions of AI-assisted translation by students (90.00%). Students indicated that they experienced improvements in their ability to choose appropriate vocabulary for their English translations, avoiding direct translations from their native language of Thai.

One student mentioned during the interviews that":

> *"I often translated from Thai to English in a word-for-word fashion; however, ChatGPT often provided vocabulary suggestions that sounded more natural when spoken in English."*

Another student remarked:

> *"AI-assisted in choosing the correct vocabulary for literary translation."*

These results support the idea that students can improve their lexical choice through the use of AI-assisted translation tools. These findings are consistent with previous research that suggests that generative AI tools can improve students' vocabulary and translation fluency. Furthermore, because these AI-assisted translation environments require students to continually revise their translations, their translations typically exhibit improvements in quality, fluency, and appropriateness (Jiao et al., 2023; Xu et al., 2025).

Stylistic and Discourse Features

These findings indicated that the students utilized the feedback from the AI to improve the stylistic qualities of their translations. Within the discussion, most students indicated an improvement in the 3 most discussed categories of stylistic improvements: stylistic improvement (80.00%), sentence restructuring (85.00%), and fluency of the translations (75.00%).

Students stated that ChatGPT assisted them with restructuring their sentences to produce smoother and more natural-sounding English translations of the applied texts. Each student compared their translations of the texts to those translated by AI-assisted translation tools and discussed with their peers the various methods for improving the stylistic quality of their translations of the texts.

One student stated:

> "AI-*assisted translation often sounds smoother than my translation of the text. However, after discussing with my peers, I have improved the structure of my translations to ensure that they sound natural to native speakers of English."*

Another said:

"I learned how English writing is different from Thai writing through this activity with AI-assisted translation tools."

These findings indicated that the students became more aware of the aspects of English that related to style after the completion of the translation task. These findings were in agreement with Gao et al. (2024) regarding the way in which AI systems could recognize and react to aspects related to style during the translation tasks performed with those systems.

Genre and Cultural Features

The findings also revealed that students became more aware of the genre and cultural appropriateness of texts during the AI-assisted translation process. While ChatGPT assisted students with improving their fluency and restructuring of sentences, some difficulties were still encountered when translating texts that featured cultural meanings.

Several students noted that AI was able to translate their texts correctly but often failed to include the cultural meanings of the Thai texts.

One student said:

"AI-assisted translation was appropriate in terms of the English language but failed to include the cultural meanings of the Thai texts."

Another student said:

"AI-assisted translation was appropriate in terms of the English language, but I had to decide for myself whether the translations were culturally appropriate."

These results indicated that students had to use their own judgment to translate these culturally sensitive texts. These results supported Al-Azzawi et al. (2025) and Idris (2026) who have argued that AI-assisted translation tools still struggled with effectively translating cultural nuances, implications and context-specific meanings in languages despite being accurate in linguistic aspects of translation.

Reflective and Strategic Translation Features

Table 5 Students' Reflective Translation Behaviors

Reflective Behaviors	Frequency (f)	Percentage (%)
Comparing Human and AI Translations	18	90.00
Explaining Translation Choices	17	85.00
Identifying Linguistic Errors	17	85.00
Discussing Register and Tone	15	75.00
Negotiating Meaning with Peers	14	70.00
Evaluating Naturalness	14	70.00
Reflecting on Genre	12	60.00
Questioning AI Suggestions	11	55.00
Revising AI-generated Output	10	50.00
Rejecting Inappropriate AI Suggestions	8	40.00

n = 20 of translation groups**,** Mean frequency = 13.6**,** Standard Deviation (SD) = 3.38

The findings indicated that the students were actively engaged in the translation activities that were implemented with the assistance of AI translation tools. The most common forms of reflection by the students included comparing their translations to those suggested by the AI translation tool (90.00%), explaining their decisions in creating their translations (85.00%), and often noting any linguistic errors that they made in their translations (85.00%).

These findings indicated that the students were not passively using the AI translation tool to create translations for them. Instead, the students were critically thinking about the suggested translations from the AI tool, as well as working together with their peers to create their translations.

One student discussed in her interview that she often disagreed with the translations provided by the AI tool because the AI translation did not always reflect the emotional meaning of the Thai text:

> *"Sometimes I disagreed with the AI translation because it did not match the emotional meaning of the original Thai text."*

Another student mentioned during her interview that one of the ways that she thought about her translations was to compare her translations to those from the AI tool:

> *"Comparing my translation with the AI version helped me think more carefully about why I chose certain words."*

These findings indicated that the translation activities that were created with AI tools helped the students to become more reflective in their approach to translation, critical thinking, and awareness of the translation process. Thus, these findings support Tran and Tran (2023) in their suggestion that AI-assisted translation tools could act as scaffolding for students to learn the translation process and develop their translation skills in a reflective manner.

Emergent Themes of AI-Assisted Translation Activities

Table 6 Frequency and Percentage of Engagement Themes of AI-Assisted Translation Activities

Emergent Themes	Frequency (f)	Percentage (%)
Grammatical Awareness Development	18	90.00
Lexical Choice and Vocabulary Refinement	17	85.00
Stylistic Enhancement and Naturalness	16	80.00
Semantic Accuracy and Meaning Clarification	15	75.00
Genre Awareness Development	14	70.00
Reflective Translation Practice	14	70.00
Development of Translation Metalanguage	13	65.00
AI as Linguistic and Cognitive Scaffolding	12	60.00
Human–AI Collaborative Meaning Negotiation	11	55.00
Translator Identity Formation	10	50.00

n = 20 of translation groups Mean frequency = 14.0 Standard Deviation (SD) = 2.58

The thematic analysis of the interview and journal responses, as well as the artifacts of the AI-assisted translation activities, revealed several important themes regarding the translation experiences of the students. The most prominent themes included themes related to grammatical awareness (90.00%), lexical awareness (85.00%), and stylistic enhancement (80.00%). These themes indicated that the students primarily felt that the activities with the AI-assisted translation tools allowed them to develop their linguistic skills and to improve the quality of their translations. However, several other themes also emerged within the data. For instance, themes related to reflective translation practices (70.00%), collaboration between the human and the AI-assisted translation technologies (55.00%), and the development of the identity of the translator (50.00%) indicated that the students began to gain an understanding of their roles as translators during these activities. Furthermore, the themes related to reflection and translator identity indicate that the activities may provide additional benefits for the students beyond those related to the development of their linguistic skills.

Discussions

The findings suggest that AI-assisted translation pedagogy goes beyond improving translation accuracy. AI-assisted environments appear to allow for translators to shift beyond translating to reflect on their translations. These findings indicate that AI-assisted translation activities encourage translators to shift from translation production toward verification and post-editing of AI-generated translations.

The improvements in grammatical accuracy suggest that AI-assisted environments allow translators to become more aware of the language they are producing. AI-assisted translation activities encourage translators to shift from generative to verification mode in the translation process. This finding supports Su's (2026) suggestion that using AI-assisted translation applications enables translators to shift from the generative mode in which they typically operate to the verification mode, wherein they evaluate AI-generated translations.

These findings also suggest that AI-assisted translation activities encourage translators to engage in reflective activities while performing their translations. Rather than accepting the translations that AI applications produce, translators tended to question, modify, and collaborate with their AI applications during the translation process. Such behaviors indicate that AI-assisted translation applications may foster reflective translation skills among translators. These findings support the findings of Gu et al. (2025), who also found that engaging in post-editing activities with AI-assisted translation applications fosters evaluative judgment and reflective translation skills among translators.

AI-assisted translation activities also foster awareness of linguistic elements beyond grammar, such as lexical choice, stylistic naturalness, and coherence. Such findings support the position of Muftah (2025), who argues that AI-assisted translation applications can foster the development of translation skills among translators when those translators engage with the suggestions of the AI applications in a critical manner.

However, AI-assisted applications exhibit limitations in improving skills related to cultural equivalence in translations. While the applications are accurate in the linguistic elements of translations, they still require human translators to draw upon their understanding of the culture of the text to make appropriate translation suggestions. AI-assisted translation applications and techniques thus appear to be still developing in the area of cultural translations. These findings support the arguments of Al-Azzawi et al. (2025) and Idris (2026), who have both discussed the limitations of AI-assisted translation applications in culturally sensitive translations and contextual translation skills.

These findings suggest that AI-assisted translation applications should not be conceptualized in terms of technological enhancements to the translation process. Instead, their integration into the translation process likely requires the development of reflective and evaluative skills in translators of all levels. Such findings, therefore, support the idea that AI-assisted translation environments can enable human-AI collaborative learning among translators.

These findings contribute to the discussion of AI-assisted translation applications and techniques by emphasizing the importance of reflective skills, evaluation of AI-assisted translations, and the role of the human translator in the AI-assisted translation environment.

Conclusion

This study investigates the integration of ChatGPT into translation classrooms in a university in Northern Thailand. Specifically, this study measures the impact of AI-assisted translation on students' translation competence, reflective learning, and collaborative translation with AI. The results of this study indicate that using AI-assisted translation significantly improved students' translation skills. Furthermore, the

implementation of AI-assisted translation also enabled students to develop the skills necessary to reflect on and edit AI-generated translations. Thus, AI-assisted translation environments can help students to develop their reflective and collaborative translation skills.

There are a few implications of these results regarding the use of AI-assisted translation in educational environments. Firstly, AI technologies should be integrated into translation education as assistive tools rather than as alternatives to human translators. Secondly, translation classrooms can utilize this technology to teach students to reflect upon and edit AI-generated translations. Finally, translation classrooms can use AI-assisted translation to teach students to become critical literates in relation to the AI systems they use and to develop an understanding of their role as translators within those AI-mediated environments.

Despite the value of the findings of this study, there are a few limitations to this research. For example, the study was performed in a single university, and with a relatively limited number of students within that institution. Furthermore, the study utilized the AI application ChatGPT but did not compare different AI translation applications. Future research could utilize these topics to investigate the long-term effects of AI-assisted translation in translation classrooms, to compare different AI translation applications, or to investigate the impact of AI-assisted translation on other topics related to translation and translators.

AI Tools Declaration

The author used AI tools (Trinka, ChatGPT and Gemini) for language editing and proofreading to improve clarity and grammatical accuracy. All content, data analysis, interpretations and conclusions illustrated in this article are the original work of the author.

Bibliographic references

Al-Azzawi, I. G. S., Mohammed, M. A., & Hamood, A. S. (2025). The role of artificial intelligence in enhancing translation and cultural diversity with reference English and Arabic translation. In F. P. García Márquez et al. (Eds.), Computing, Internet of Things and Data Analytics, 237–252. Springer. https://doi.org/10.1007/978-3-031-87154-2_21

Alsharef, R., Aldawli, F., Alahdal, K., & Shamsan, N. (2026). Exploring the effectiveness of pedagogical orientation of generative AI models on enhancing university students' translation skills: An experimental study. International Journal of Linguistics and Translation Studies, 7(1), 1–29. https://doi.org/10.36892/ijlts.v7i1.666

Alves, F., & Hurtado Albir, A. (2017). Evolution, challenges, and future directions of translation process research. In J. W. Schwieter & A. Ferreira (Eds.), The handbook of translation and cognition, 537–554. Wiley. https://doi.org/10.1002/9781119241485.ch29

Andrade Preciado, J. S., Sánchez Ramírez, H. J., Priego Sánchez, Á. B., & Gutiérrez Pérez, E. E. (2025). Ethical challenges in AI-assisted translation. EthAIca, 4, 151. https://doi.org/10.56294/ai2025151

Athanassopoulos, P., Costa-jussà, M. R., & Fonollosa, J. A. R. (2023). AI-assisted language learning and grammatical awareness development. Computer Assisted Language Learning, 36(7), 1195–1215

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Gao, Y., Huang, J., & Liu, Q. (2024). Comparing generative AI tools and traditional machine translation systems in translation quality and contextualization. Machine Translation, 38(1), 45–67.

Georgiou, G. P. (2025). ChatGPT produces more "lazy" thinkers: Evidence of cognitive engagement decline. arXiv. https://arxiv.org/abs/2507.00181

Gu, X., Zhang, Y., & Liu, T. (2025). Evaluative judgement and post-editing practices in AI-assisted translation learning. Computer Assisted Language Learning, 38(1), 77–98.
Idris, M. E. M. (2026). AI-assisted translation and its impact on cross-cultural communication in the United States: A data-driven study. European Multidisciplinary Journal of Modern Science, 28(1), 22–32. https://journal.academicjournal.online/index.php/emjms/article/view/28-1-22
Jaruwatsawat, M., Khiaosen, C., Sriram, W., & Phoowong, S. (2024). EFL learners' perspectives on using AI translation applications. BRU ELT Journal, 2(3), 252–267. https://doi.org/10.14456/bej.2024.17
Jiao, W., Wang, W., Huang, J.-T., Wang, X., Shi, S., & Tu, Z. (2023). Is ChatGPT a good translator? Yes, with GPT-4 as the engine. arXiv. https://doi.org/10.48550/arXiv.2301.08745
Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günnemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeiffer, F., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., & Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. Learning and Individual Differences, 103, 102274. https://doi.org/10.1016/j.lindif.2023.102274
Kornacki, M. (2025). Integrating generative AI into translator training. Philologia, 35(2), 43–60.
Li, Z., Wang, Y., Liu, H., & Chen, X. (2024). Exploring the impact of ChatGPT on EFL learners' writing and lexical development. Computer Assisted Language Learning, 37(2), 245–267. https://doi.org/10.1080/09588221.2024.2301125
Massey, G., & Ehrensberger-Dow, M. (2026). Translation competence in the age of generative AI: Debates, dilemmas, directions. In J. C. Penet (Ed.), Teaching translation in the age of generative AI: New paradigm, new learning. Language Science Press. https://langsci-press.org/catalog/book/520
Mohsen, M. A. (2024). AI-assisted translation systems and translation competence development. Computer Assisted Language Learning Electronic Journal, 25(1), 112–130.
Muftah, M. (2025). The impact of artificial intelligence (AI) on translation students' training practices: A case study of ChatGPT translation (ChatGPT-T) output. Computer Assisted Language Learning. Advance online publication. https://doi.org/10.1080/09588221.2025.2599148
PACTE Group. (2003). Building a translation competence model. In F. Alves (Ed.), Triangulating translation: Perspectives in process-oriented research, 43–66. John Benjamins.
Pietrzak, P., & Kornacki, M. (2020). Human agency and reflective competence in computer-assisted translation environments. Translation & Interpreting, 12(2), 89–108.
Su, Z. (2026). The impact of AI-assisted translation on student translators' behavior. Chinese Journal of Social Science and Management, 10(1), 219–236.
Tran, T. T., & Tran, H. T. (2023). AI as cognitive scaffolding in translation learning environments. CALL-EJ, 24(3), 45–63.
Wu, C., Yu, H., Moorhouse, B. L., & Wu, M. (2025). Unveiling students' experiences and perspectives of generative AI-assisted translation in a Hong Kong university: Perceived benefits, limitations, and suggestions. Digital Applied Linguistics, 2, 102600. https://doi.org/10.29140/dal.v2.102600
Xiao, Y., & Zhi, L. (2023). AI-assisted grammar feedback and second language awareness. Language Learning & Technology, 27(2), 122–139.
Xu, S., Su, Y., & Liu, K. (2024). Integrating AI for enhanced feedback in translation revision: A mixed-methods investigation of student engagement. arXiv. https://doi.org/10.48550/arXiv.2410.08581

Zhang, Y. (2025). The cultivation of critical thinking in translation teaching in the era of artificial intelligence. International Journal of Law, Policy & Society, 1(1), 46–53. https://doi.org/10.71222/er1wrx55

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Dr. Sommai Rodpan
Department of English
School of Liberal Arts
University of Phayao
Thailand
sommai.ro@up.ac.th
ORCID:/0009-0009-9107-3312