

Prompt engineering in translation: How do student translators leverage GenAI tools for translation tasks

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Abstract

GenAI, though not developed specifically for translation, has shown the potential to produce translations as good as, if not better than, contemporary neural machine translation systems. In the context of tertiary-level translator education, the integration of GenAI has renewed debate in curricula and pedagogy. Despite divergent opinions among educators, it is evident that translation students, like many other students, are using GenAI tools to facilitate translation tasks as they use MT tools. We thus argue for the benefits of guiding students in using GenAI in an informed, critical, and ethical manner. To provide insights for tailored curriculum and pedagogy, it is insightful to investigate *what* students use GenAI for and *how* they use it. This study is among the first to investigate translation students' prompting behaviours. For thematic and discourse analysis, we collected prompts in GenAI tools generated by a representative sample of postgraduate student participants for eight months. The findings revealed that students had indeed used GenAI in various translation tasks, but their prompting behaviours were intuitive and uninformed. Our findings suggest an urgent need for translation educators to consider students' agency and critical engagement with GenAI tools.

1 Generative AI and Translation

AI has gradually permeated our life and work over the past two years. In particular, the launch of ChatGPT in 2022 captured significant attention across various sectors with its unprecedented ability to generate contextually relevant responses

based on pattern recognition. Since then, ChatGPT and other Generative AI (GenAI) tools have experienced rapid development and continued to attract public attention. GenAI tools have now been embedded in our smartphones and laptops with great utility. Despite their limitations, GenAI tools are also said to have significantly transformed our work and the industries at large by improving automation, efficiency and productivity (McKinsey & Company, 2023).

In the industry and discipline of translation and interpreting, GenAI has also been experimented with and adopted by language service providers and professional translators. Though not specifically developed for translation, GenAI has been applied to converting texts from one language to another, given the training data and neural network architecture similarities between GenAI and Neural Machine Translation (NMT). Both GenAI and NMT rely on natural language processing and transformer-based models. GenAI has shown the potential to generate translations of quality equal to, if not superior to, that of contemporary NMT (Lee, 2023). Thus, we argue that GenAI tools can be considered a broader form of MT and language tools.

However, automatically translating from one language into another is merely one of GenAI's many functions. Beyond automatic translation, GenAI has been instrumental in facilitating the entire translation process, from background information searching and translation strategy analysis to proofreading and editing. Consequently, there is a growing trend among professionals to integrate GenAI into translation workflows, exploring innovative ways to enhance translation productivity and quality.

Indeed, the role of GenAI tools, especially ChatGPT, in empowering human translators has been discussed and researched in the last two years. Studies have shown that GenAI offers advantages over human translators in terms of efficiency in

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processing lengthy text, accuracy in terminology translation, and consistency in style (e.g., Fu & Liu, 2024; Mohammed et al., 2024; Tekwa, 2024). When collaborating with human translators, GenAI models have outperformed contemporary NMT models (e.g., Google Translate) in enhancing translation quality by integrating pre-editing analyses and interactive inputs (e.g., Wu et al., 2023). While GenAI has proven effective in assisting translation practices, it also exhibits significant shortcomings, such as accuracy issues (e.g., mistranslations from limited contextual understanding) (Mohsen, 2024), creativity constraints (e.g., failure to produce nuanced and culturally resonant translations) (Katan, 2022), and ethical concerns (e.g., perpetuation of biases in training data) (Jiménez-Crespo, 2024). Addressing these challenges requires human discretion in critically evaluating AI outputs (Katan, 2022).

2 GenAI and translator training

In the context of tertiary-level translator education, the integration of GenAI has renewed previous debates on the benefits and challenges of integrating translation technologies, particularly machine translation, into our curricula (e.g., see Doherty, 2016; Doherty & Moorkens, 2013; Kenny & Doherty, 2014). On the one hand, the integration of GenAI tools into translator education has been advocated, given its benefits (Zhang, 2025), which have been explored in previous studies, including improving bilingual and extra-linguistic competencies and enhancing translation efficiency (e.g., Li & Tian, 2024). On the other hand, the inappropriate integration of GenAI into translator education could adversely affect the development of students' translation competence. Given the current limitations of GenAI-generated translations, students must acquire critical skills to evaluate and refine these outputs. However, translation students' overreliance on GenAI during the learning process may raise concerns about the non-critical evaluation and use of its outputs (Li & Tian, 2024). However, translation students' overreliance on GenAI during the learning process may raise concerns about the non-critical evaluation and use of its outputs (Li & Tian, 2024).

Regardless of the debate concerning the integration of GenAI in translator training, the lack of empirical studies means that most discussions and decisions about GenAI in translator training are experiential and intuitive. So far, the integration of

GenAI in translator training has been extensively discussed, mainly in theoretical literature. Scholars tend to focus on how technology impacts translator training and what transformation is needed for translation programs (e.g., Li et al., 2023; Zhao et al., 2024). There is further discussion on how GenAI can be leveraged to teach translation and technology. However, relevant empirical studies are scarce, with only a handful of survey-based studies investigating students' and teachers' perceptions of AI in translation (e.g., Łukasik, 2024; Sahari et al., 2023). Evidence regarding students' interaction with GenAI, such as their prompting strategies, or the effect of teaching with GenAI, has yet to be found.

Indeed, these issues in the debate regarding integrating AI in translator training have existed long since the advent of MT some decades ago. GenAI has only caught the attention of researchers for around two years, so the number of studies is naturally still limited. While empirical studies on the integration of GenAI in translator training remain limited in number, existing research on MT has already shown the advantages and disadvantages of incorporating automatic translation in training (e.g., Doherty & Kenny, 2014; Zhang & Qian, 2023). Given that students are likely to independently explore and experiment with GenAI, just as they did with MT (Zhang, 2023), it is more beneficial to openly discuss these tools rather than prohibiting discussion and access in the translation classroom.

We thus argue that it would be better to understand how students have been using GenAI in translation tasks and provide tailored and essential guidance for them to leverage these tools. The first step in providing such tailored instructions is understanding students' usage of GenAI tools.

3 Prompt engineering

While empirical studies on students' interaction with GenAI are scarce, prompt engineering has emerged as a specialised technique applied across other fields, such as computational linguistics, healthcare and education (Mabrito, 2024; Patil et al., 2024; Reddy et al., 2024). This technique involves designing, refining, and implementing prompts (i.e., human input instructions) to optimise the output of GenAI to generate more accurate and contextually appropriate responses (Knoth et al., 2024; Ratnayake & Wang, 2024). Prompt engineering frameworks have gradually emerged

to guide practice. For example, the PERFECT Framework focuses on key elements, including prioritising Precision to reduce ambiguity, Engagement to make prompts relevant, Relevance to align with the task, Flexibility to allow varied responses, Efficiency to optimise resources, Clarity for understanding, and iterative Testing to refine prompts (Ratnayake & Wang, 2024). However, such studies rarely focus on translation-specific challenges.

Recently, the knowledge of prompt engineering has been transferred to and explored in the translation field by comparing translation quality: Studies that compare zero-shot and few-shot strategies (i.e., providing GenAI with no examples or a small number of examples to guide its response) have primarily focused on sentence-level translation and often overlooked the context (e.g., Hendy et al., 2023; Vilar et al., 2023); The level of input text have been considered in studies showing that full-document input yields better translation quality than sentence-by-sentence or multi-sentence block input (e.g., Wang et al., 2023), but the prompting strategies examined do not apply to real-world translation practice that considers functionalist principles, such as target audience and translation purpose (Vermeer & Chesterman, 2021). To our knowledge, only one study has provided a human-like prompting framework for translation, which includes four key components: M for Maps (keywords and terms), A for Audience (tone and style), P for Purpose (goal and context), and S for Style (maintaining consistency and cultural adaptation (He et al., 2024). However, this framework does not provide clear definitions of these translation terms, and it appears to be derived from experiential insights rather than from translation practice or established theoretical frameworks. As such, its potential applicability to professional translation contexts calls for further exploration and validation in authentic translation settings.

Against this backdrop, there is a need for a more systematic framework that is grounded in real-world translation practice and supported by empirical data, whether for guiding Human-GenAI translation practice or students in using GenAI in an informed manner. This study, therefore, aims to understand translation students' usage of GenAI tools by analysing their associated prompts.

We intend to address the following research questions (RQs):

- RQ1: What translation tasks are outsourced to GenAI tools by translation students?
- RQ2: What are the language features of the prompts used by translation students?
- RQ3: What are translation students' prompt engineering strategies?

To answer these RQs, we recruited 15 postgraduate students and collected their dialogues with GenAI tools over eight months for thematic and discourse analysis. The potential significance of this research lies in two key areas. Firstly, the findings of this research are expected to provide empirical evidence regarding how translation students interact with GenAI, particularly how they formulate and use prompts. Secondly, from a practical perspective, the findings could inform the development of effective pedagogical approaches for integrating GenAI into translator education.

4 Methodology

4.1 Data collection

After obtaining ethical approval from our institutions (Approval-No. 45644), we sent out a call to postgraduate students enrolled in a translation program jointly established by an Australian university and a Chinese university. Potential participants voluntarily contacted the research team to register their interest, and we asked them several follow-up questions to verify their eligibility. Eligible participants of the current project are students enrolled in translation programmes who have constantly experimented with GenAI tools to assist with their translation tasks, including real-life translation tasks and course assignments. Prior to this study, participants had neither received formal training in translation technology nor been permitted to use GenAI in their coursework. The prompts were created during the course as part of their regular learning activities, without participants being aware that these would later be collected for research purposes. Data collection began only after the coursework had concluded. Once the participants' eligibility was confirmed, they were given detailed instructions on exporting their dialogues created during translation tasks directly from the GenAI platforms and saving the dialogues in Word format. Participants were instructed to anonymise the files

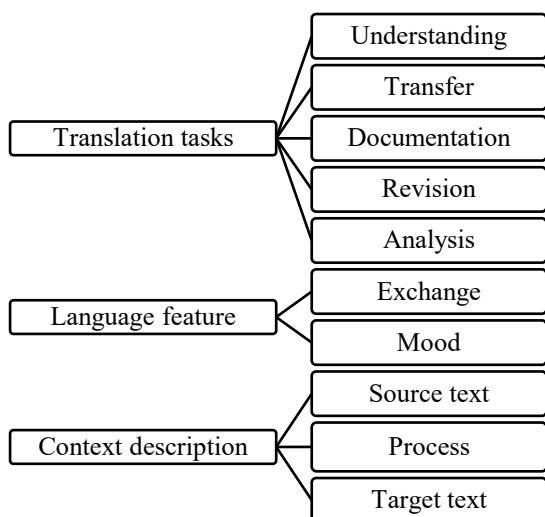


Figure 1: Coding typologies

by naming them with their assigned participant codes before uploading them to a shared Google Drive folder.

Fifteen participants were recruited, and most submitted eight documents spanning the eight months of the two terms of the 2024 academic year. The total number of prompts collected was 983 (excluding those unrelated to translation tasks) in 119 documents.

All the documents were imported into NVivo for further analysis. To improve the validity and reliability of the thematic and discourse analysis, the research team conducted the coding processes twice in December 2024 and January 2025. The results were compared to identify discrepancies, which were discussed among the research team members to reach a final decision.

4.2 Analytical framework

The data were analysed from three aspects: the use of GenAI in different translation tasks, the language features of the prompts used by students, and the description of the context provided by students. As displayed in Figure 1, The coding typologies were determined by observing our data and referencing relevant studies.

Regarding the use of GenAI in different translation tasks, we employed Mossop's (2000, p. 40) framework of three translation phases: pre-drafting, drafting (sentence-by-sentence drafting) and post-drafting. Five tasks were performed in these three phases, as follows: (1) Interpret the source text; (2) Compose the translation; (3) Conduct the research needed for Tasks 1 and 2; (4) Check the draft translation for errors and correct if

necessary; (5) Decide the implications of the commission: how do the intended users and uses of the finished products affect Tasks 1 to 4?

For easier and clearer coding, the five tasks were indicated as understanding, transfer, documentation, revision and analysis.

Our discourse analysis of prompts drew upon the framework of dialogue analysis within Systemic Functional Linguistics (Halliday & Matthiessen, 2013). Considering that translation students interacted with GenAI tools following a dialogic structure (Batubara et al., 2024), this analytical approach focuses on the functional roles that language plays in communication and allows for a deep dive into the intentions behind exchanges. More specifically, we analysed prompts as individual utterances within the context of a dialogue framework, examining exchange patterns, interaction style, and utterance mood (i.e., linguistic features that reveal the speaker's attitude toward the action or state described in the sentence). The prompts were categorised according to three main types of mood: declarative (statement), interrogative (question), and imperative (command). Within each mood type, we further differentiated language functions based on the syntactic structure and word choice that manifest the interlocutor's different intentions in communication.

Regarding context descriptions in prompts, we employed a hybrid approach (Fereday & Muir-Cochrane, 2006), starting with open coding to capture any emerging themes in the prompts. Later, during the categorisation phase, we observed that some of the codes were closely related to existing translation frameworks. For example, codes relevant to textual functions of the Source text (ST) and Target text (TT) were interpreted within Snell-Hornby's integrated approach, which defines the domain (e.g., medical and legal text), genre (e.g., annual report and contract), audience (general or domain experts such as medical specialists) and other factors related to the communicative function of the text (Nord, 2018); Codes relevant to expected translation quality were referred to NAATI's models for assessing translation quality that involves transfer competency and language competency: Transfer Competency focuses on meaning transfer and adherence to textual norms, while language competency assesses the use of grammar, syntax, and idiomatic expressions to

ensure the translation is both accurate and appropriate for the target audience (NAATI, 2024). The coding system, therefore, integrated both existing theoretical frameworks and new insights derived from our data.

5 Results and discussion

5.1 GenAI in the translation processes

In examining how the participants utilised GenAI tools to assist with translation, the interaction evidently occurs in all five translation tasks across the translation process. Among these tasks, the *transfer* (59.86%) and *revision* (30.05%) tasks appeared to involve the most frequent and intensive use of GenAI. When transferring the ST into the TT, the participants often relied on GenAI to produce an initial translation draft for the entire text or some particularly challenging paragraphs. Some representative examples of prompts are listed as follows:

- (1) Please translate the following text into English that aligns with natural English expressions. (P01)
- (2) I have a document; could you please translate it? Keep the translation concise and elegant, with a literary style. (P06)
- (3) Please help me creatively translate the following passage. (P06)

Revision also occurred mainly at the text or paragraph level and less frequently at the sentence or phrase level. The revision aimed to identify and correct translation errors by comparing the ST and TT, address awkwardness and ambiguity, and correct grammatical and syntactic errors in the TT. Several typical prompts were identified, as follows:

- (4) Please polish and improve the translation so that it meets the requirements of English writing. (P01)
- (5) Point out the errors of this translation. (P02)
- (6) Can you rewrite one more time the translation. No need to make a lot of changes. Only need to correct the translations of some terms, grammar mistakes, and non-fluent sentences. Also make the translation more formal. (P06)

Though GenAI was less tasked with translating or revising a single sentence or phrase, the interaction in these cases tends to be more dynamic, often involving multiple dialogue exchanges. The participants frequently adjusted their prompts to ensure the output aligned with their desired style or quality. In contrast, a simple back-and-forth interaction was involved when translating or

revising an entire text or paragraph, with one single prompt followed by GenAI's response. A representative example is presented below:

- (7) Prompt 1: [An English sentence]. How should this sentence be translated in medical translation?

Prompt 2: How can the translation read more professionally?

- Prompt 3: [part of GenAI's translation]. How can you say this differently?

Prompt 4: What if the translation has to sound more professional?

Prompt 5: It is still not fluent.

Prompt 6: Can you change the word order? (P06)

In example (7), the participant had one sentence translated by GenAI and was unsatisfied with the output because of the style. The participant then requested that the translation be revised to sound more professional. The participant also asked GenAI to provide a different version to choose from.

Another interesting observation is the preference for re-translation over revision. When the generated translation did not meet the expectations of the participants, a request to re-translate rather than revise the generated output was given with an updated prompt.

- (8) Prompt 1: Please translate the following introduction of a medical company into English.

Prompt 2: [A paragraph from the ST]. Translate this paragraph again using four-character structures.

Prompt 3: [Two subtitles from ST]. Translate these two subtitles more elegantly.

Prompt 4: [Company brand name]. How can this brand name be translated into Chinese? (P02)

In example (8), the participant asked GenAI to translate an introduction to a medical company. The follow-up prompts all focused on re-translating some parts of the ST with updated instructions.

The application of GenAI is less significant in terms of *understanding* (2.75%), *documentation* (5.5%), and *analysis* (1.84%) tasks. The participants often employ GenAI to facilitate their *understanding* of the ST by asking it to provide a summary of the ST or to analyse the structure of some difficult sentences.

- (9) Please read the readings and grasp some core ideas. (P01)

(10) Please analyse the sentence structure of the following sentence. (P10)

Regarding *documentation*, the participants prompted GenAI to explain domain-specific terms, proper names, or background information.

(11) What is the difference between [Term A] and [Term B]? (P12)

(12) Please help me compare and analyse the brand tones of [Brand A] and [Brand B] and present the comparison in a table format. (P05)

Concerning analysis, the participants required GenAI to help determine translation strategies.

(13) Please help me conduct a pre-translation analysis of this text.

The participants' interaction with GenAI in various translation tasks, on the one hand, highlights the multifaceted role of GenAI in translation workflows. As translators' roles may increasingly involve collaboration with GenAI tools, it is worth exploring the critical and creative application of GenAI throughout the entire translation process. More attention could be given to the tasks of *understanding*, *documentation* and *analysis*. On the other hand, such interaction with GenAI demonstrates that even without proper training, the participants have been experimenting with it and exploring its usage independently.

Several significant and interesting issues were revealed in our data. First, students' frequent application of GenAI in *transfer* and *revision* tasks shows its potential to accelerate translation processes by providing references. However, what matters is how students make use of the generated output, which requires further exploration. Second, fewer prompts directed toward the *understanding* and *documentation* tasks, in our opinion, may indicate students' reduced effort to double-check the generated translations, which means students' (potentially blind) trust of and (over-)reliance on GenAI. Third, as these participants have heavily engaged with GenAI, ethical issues should be discussed in the classroom, including intellectual property, transparency, and accountability.

5.2 Discourse features of the prompts

Our discourse analysis identifies structures and communicative functions of prompts to deepen our understanding of how translation students construct prompts through different language uses.

At the conversation level, the participants' prompts exhibit varying levels of interactivity

Single-round conversation	Multi-round conversation
<Beginning of conversation>	<Beginning of conversation>
Prompt: Translate into English. [The ST]	Prompt 1: I have a document; could you please translate it? Keep the translation concise and elegant, with a literary style. [The ST] GenAI output 1: [The TT] Prompt 2: How can [one phrase of the ST] be translated in a more literary way? GenAI output 2: [Suggest a different translation]
GenAI output: [The TT]	Prompt 3: How to translate [a brand name] in a more appropriate way? GenAI output 3: [Analyse the brand name and point out the factors to consider when translating it]
<End of conversation> (P04)	... <End of conversation> (P06)

Table 1: Examples of Single-Round and Multi-Round Conversations with GenAI Tools

when engaging with GenAI. 175 out of 356 conversations (49.16%) were limited to a single round, where the student commanded GenAI to translate a text, and GenAI's translated text marked the end of the exchange. In contrast, around half of the conversations between the participants and GenAI involved multiple rounds of exchanges with a continuous flow of information, responses, and feedback. In these multi-round exchanges, some prompts were context-dependent, lacking complete syntactic structure but were understandable within the given context (e.g. 'make it [the text] more logical' with the text provided in the previous prompt). Table 1 displays single-round and multi-round conversations between the participants and GenAI tools.

Interestingly, increased interactivity was observed when AI was used to assist in examination tasks that contribute to final grades, while single-round conversations were primarily seen in weekly exercises. It remains inconclusive whether this difference is related to students' motivation; further observation of student-AI collaborative output or interviews with students will be needed to draw a definitive conclusion.

In addition to interactivity, we also identified informality of conversational language in the

Mood and function	Example
Imperative mood	
Command	<i>Refine</i> the above text, making the language more elegant, but avoid being overly verbose.
Request	<i>Please</i> translate the following text into English, following English expression conventions.
Assume	<i>Imagine</i> you are a medical translator who is translating the following text into English to make it fit for the needs of foreign patients and their families.
Suggest	<i>Consider</i> dividing this paragraph into four sections based on its logical structure to enhance readability.
Interrogative mood	
Confirm	<i>Do</i> these paragraphs have any linguistic mistakes or logic mistakes needed to fix? <i>Is there</i> any grammatical issue with this topic?
Request	<i>Can you help</i> me to translate?
Inquire	<i>How to</i> translate “population risk” into Chinese? What is IPG?
Critique	now, assume you are a native english speaker who has little idea about tibet and ways to travel to tibet, <i>are you interested to travel to tibet by railway after seeing the direct translation?</i>
Decide	<i>Does</i> ‘limited access’ mean they have difficulty obtaining it, <i>or</i> that the help they receive is limited?
Declarative mood	
Describe	<i>It is</i> a brochure and 13 20 50 is a telephone number.
Commissive	<i>I will</i> give you a picture for reference.
Evaluate	Some of your expressions are <i>hard</i> to understand for Chinese.
Explain	It needs to be simple and plain, <i>because</i> patients are busy with their own stuff. They need to catch the main information quickly.
Permit	You <i>can</i> add images to make it more like a brochure to attract people to the screening.
Permit	You <i>can</i> add images to make it more like a brochure to attract people to the screening.

Table 2: Moods and functions of prompts

prompts created by the participants: First, participants sometimes combined English and Chinese as the input language, for instance, ‘justify 修改的部分, 最好能够附上参考的 parallel texts (Justify the modifications made, better to include parallel texts as references) (P08)’. This reflects the phenomenon of bilinguals mixing languages in everyday communication (Ritchie & Bhatia, 2012). Second, the prompts contained typographical errors (e.g., ‘into Chines’) and grammatical mistakes (e.g., ‘make some specific example about the translation’). Furthermore, colloquial expressions were present, such as ‘文邹邹’ (wén zōu zōu), a misspelling of ‘文绉绉’ (wén zhōu zhōu) that describes a style of speech or writing that is overly formal and pretentious (P05).

Following the analysis of the overall conversation structure and style, we further examined the prompts as individual utterances created by the participants, as shown in Table 2.

The conversational analysis of prompts revealed that the imperative mood was the most prevalent, particularly through its command function, which was used to instruct GenAI to perform translation tasks. This mood also encompassed requests, assumptions, and suggestions, characterised by action-oriented language that omits the subject and focuses on prompting specific actions. In addition, the study found that students also employed the interrogative mood when interacting with GenAI to seek clarification, validation, or new information. Such utterances typically featured question words or auxiliary verbs, reflecting the participants’ need to engage with ChatGPT for further elaboration or problem-solving. The declarative mood was also used to convey information, express evaluations, explain reasoning, or grant permission. It was characterised by complete statements that provided factual, evaluative, or explanatory content, supporting the clear communication of ideas.

Unlike previous studies that focused on the content of prompts (e.g., He et al., 2024; Ratnayake & Wang, 2024), this study contributes by identifying and categorising the discursive features of prompts in terms of mood and communicative functions. This approach provides insights into the interactional patterns of translation students as both initiators and drivers of dialogue with GenAI tools. The findings also have potential implications for future training of GenAI models with analysing AI-generated products, as the categorisation of discursive features can inform the development of

Codes	Example
Author	The author is <i>a professor at an American university and a prominent left-wing feminist</i> . (P08)
Domain	Now translate a <i>medical</i> paper into Chinese. (P01)
Genre	Please help me translate the following material. It is <i>the annual report</i> of an agricultural development company. (P01)
Source	Below are the lyrics sung by a monk in <i>an English fictional novel</i> . Translate the lyrics into Chinese: (P04)
Theme	Please help me translate the following excerpt. It is about <i>the background information of the 'Belt and Road Initiative'</i> . (P05)
Text function	Translate the ST into Chinese...note that it's <i>a promotional material</i> . (P11)
Contextual background	The background information of this passage is: <i>In recent years, the growing wealth gap and political polarisation in the United States have led to increasing domestic doubts about this argument</i> . (P12)
Surrounding text	The function of "facilitators" in the sentence: <i>We have also collaborated with facilitators to help farmers create a "family vision plan," which focuses on tackling gender inequality and improving young people's access to ...</i> (P01)

Table 3: Examples of prompts about ST background information

systems capable of recognising and responding to different prompt moods and communicative functions.

5.3 Context in prompt engineering

The open-ended thematic analysis was conducted to identify the contextual components that the participants used to craft prompts. The results revealed that 40.39% of the prompts (397 out of 983) only presented the text for processing and indicated the action (e.g., 'to translate' or 'to proofread') without providing any contextual information. For example:

Code	Example
Role	Assume you are <i>a medical translator</i> . (P01)
Application of knowledge from translation studies	
Theories	I need more examples <i>from the Skopos Theory</i> . (P10)
Approach	Re-translate, what does this mean? You may use <i>free translation</i> if appropriate. (P01)
Strategy	[ST in Chinese] How to translate this sentence? I need you to <i>explain</i> 吃得饱 and 吃得好 to English native speaker. (P06)

Table 4: Examples of prompts related to the translation process

(14) Translate into Chinese: [A sentence of the ST] (P01)

On the other hand, the prompts incorporating contextual information are relevant to *background information* about the ST, *requirements for the translation process*, and *expectations for the TT*.

Background information about the ST included components such as the **author** who has created the ST, the **domain** that specifies the field in which the ST is situated (e.g., medical, legal, or business domains), the **genre** (the type or category of the text, which shapes its structure and style), the **source** from which the ST is extracted, and **theme** of the ST. It also covered the **textual function** of the ST, the **contextual information** that involves the circumstances or environment in which the text was created, and the **surrounding text** located immediately before and after the ST. Representative examples are provided in Table 3.

The analysis also reveals themes that are relevant to *the translation process* (see examples in Table 4).

One key theme was the **role** assigned to GenAI tools, where prompts instructed the tools to adopt specific professional perspectives (e.g., assuming the role as a medical translator). We also observed that some of the prompts applied knowledge from **translation studies**, including theories, approaches, and strategies.

In addition, participants provided examples in their prompts to guide GenAI's responses, such as providing translated text that can be used in the generated output and specifying writing styles for GenAI to reference.

Code	Example
Domain of the target text	Please use <i>legal</i> language. (P09)
Genre of the target text	How to express this in <i>an academic paper</i> .
Audiences who intend to read the translated text	Need to be presented to <i>Chinese medical researchers</i> . (P01)
Text function	You have been asked to translate the following <i>for marketing the product ...</i> (P01)
Format	
Syntactic structure	Turn the above content into <i>a dialogue format</i> for communication with the translation company. (P06)
Length	Shorten the answer, <i>no more than 250 words</i> . (P15)
Expected quality standards	
Accuracy	Please help me translate the following sentences into English, with a focus on <i>fidelity and accuracy</i> . (P05)
Application of textual norms and conventions	
Writing style of the target text	<i>Use more common language</i> to explain some professional terms. (P12)
Use of terminology	The passage serves as a parallel text, based on this, plz polish your answer, especially the <i>terms</i> , make sure your translation is accurate. (P11)
Language quality of the translated text	
Idiomatic expressions	Please translate the following into English, adhering to <i>English expression conventions</i> . (P01)
Grammar	The ST consists mostly of subjectless sentences. Please ensure to <i>add subjects</i> in the translation. (P12)
Coherence and cohesion	Polish the paragraph, make it more <i>cohesive and coherent</i> and appealing. (P11)

Table 5: Examples of prompts related to expectations on the TT

- (15) ...9.shall timely report the relevant information to 10. the public security department Replace with these terms, and generate another translation version. (P07)
- (16) Translate the following English text according to the style of the given Chinese translation. [Source text in English][Example in Chinese] (P08)

Regarding *the output generated by GenAI*, the participants mentioned information relevant to their expectations on the TT in their prompts. Examples are presented in Table 5.

Our analysis reveals that participants consciously included information in their prompts about the expected textual features, functions, formatting and quality standards (including accuracy of meaning transfer, the appropriate application of textual norms, and overall language quality). However, their descriptions of translation quality often relied on abstract words that are not clearly defined and may be interpreted differently by different people, for example, ‘translate it more elegantly’ (P02), ‘more attractive’ (P04), and ‘more idiomatic’ (P15). Using such words may introduce ambiguity that results in non-expected responses from GenAI.

In summary, the results indicate that a considerable number of prompts lacked specific task descriptions. This may potentially limit GenAI’s ability to generate accurate translations, as previous studies have highlighted the inclusion of contextual components in prompts as an effective strategy for improving AI-generated results (e.g., Park & Choo, 2024; Ratnayake & Wang, 2024). Approximately half of the participants consciously included descriptions of the translation process and quality expectations in their prompts. While these prompt strategies were often unsystematic and characterised by ambiguous or abstract descriptions, they nonetheless demonstrated the incorporation of translation-specific knowledge. The prompts show discipline-driven deviations from general prompt engineering strategies (e.g., He et al., 2024; Hendy et al., 2023) that echo approaches from descriptive translation studies (e.g., Nord, 2018). As GenAI development increasingly shifts toward task-specific solutions (Yehia, 2024), these findings not only help identify students’ intuitive prompting behaviours and gaps before training, informing translation-specific GenAI instruction, but also offer insights for future research on refining GenAI functionalities to better support translation practice.

6 Concluding remarks

To answer the research questions posed in the current study, we collected and analysed student participants’ prompts to explore their interaction with GenAI in translation tasks. Our findings revealed that the student participants interacted

with GenAI across various tasks, especially transfer and revision, in the translation process, even without proper training. In terms of discourse features, it is common that student participants' interactions with AI ended after a single round, lacking necessary iterative feedback and refinement, with prompts reflecting an informal, spoken language style. Analysis of sentence structures and word choices further revealed the student participants' diverse prompting strategies, shaped by their language use. Regarding the content of the prompts, the findings indicate a lack of awareness in incorporating contextual cues, which may limit the effectiveness of GenAI in generating appropriate translations. It was evident that the student participants applied translation theories to their prompts, demonstrating an understanding of translation concepts and quality criteria; however, their use of vague, abstract terms may introduce ambiguity, leading to less accurate AI outputs. Overall, these interactions provide valuable insights into how GenAI can be integrated to improve educational interventions and professional practice. Our findings can serve as references for designing specialised prompt engineering training for translation students, practitioners' professional development, and future studies analysing the products of student–GenAI interactions. Our findings also suggest that these future translators increasingly rely on human-AI collaboration, thus posing new challenges for educators to urgently review translation education and adapt to this rapidly evolving landscape.

References

- Muhammad Hasyimsyah Batubara, Awal Kurnia Putra Nasution, and Fachrur Rizha. 2024. ChatGPT in communication: A systematic literature review. *Applied Computer Science*, 20(3):96–115.
- Stephen Doherty. 2016. The impact of translation technologies on the process and product of translation. *International Journal of Communication*, 10:947–969.
- Stephen Doherty and Dorothy Kenny. 2014. The design and evaluation of a Statistical Machine Translation syllabus for translation students. *Interpreter and Translator Trainer*, 8(2):295–315.
- Stephen Doherty and Joss Moorkens. 2013. Investigating the experience of translation technology labs: pedagogical implications. *Journal of Specialised Translation*, 19:122–136.
- Jennifer Fereday and Eimear Muir-Cochrane. 2006. Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, 5(1):80–92.
- Linling Fu and Lei Liu. 2024. What are the differences? A comparative study of generative artificial intelligence translation and human translation of scientific texts. *Humanities and Social Sciences Communications*, 11(1):1–12.
- Michael Alexander Kirkwood Halliday and Christian MIM Matthiessen. 2013. *Halliday's introduction to functional grammar*. Routledge.
- Zhiwei He, Tian Liang, Wenxiang Jiao, Zhuosheng Zhang, Yujiu Yang, Rui Wang, Zhaopeng Tu, Shuming Shi, and Xing Wang. 2024. Exploring human-like translation strategy with large language models. *Transactions of the Association for Computational Linguistics*, 12:229–246.
- Amr Hendy, Mohamed Abdelrehim, Amr Sharaf, Vikas Raunak, Mohamed Gabr, Hitokazu Matsushita, Young Jin Kim, Mohamed Afify, and Hany Hassan Awadalla. 2023. How GPT Models at A arXiv:2302.09210 [cs].
- Miguel A. Jiménez-Crespo. 2024. Transcreation in and the of AI: Focusing on “ In Loukia Kostopoulou and Parthena Charalampidou, editors, *New Perspectives in Media Translation*, pages 309–320. Springer International Publishing, Cham.
- David Katan. 2022. Tools for transforming translators into homo narrans or “what machines can't do.” In *The Human Translator in the 2020s*, pages 74–90. Routledge.
- Dorothy Kenny and Stephen Doherty. 2014. Statistical machine translation in the translation curriculum: overcoming obstacles and empowering translators. *Interpreter and Translator Trainer*, 8(2):276–294.
- Nils Knoth, Antonia Tolzin, Andreas Janson, and Jan Marco Leimeister. 2024. AI literacy and its implications for prompt engineering strategies. *Computers and Education: Artificial Intelligence*, 6:100225.
- Tong King Lee. 2023. Artificial intelligence and posthumanist translation: ChatGPT versus the translator. *Applied Linguistics Review*, 15(6):2351–2372.
- Fangyuan Li and Lu Tian. 2024. Translation practice and competence enhancement in the age of AI: Applying ChatGPT to translation education. In *Lecture Notes in Computer Science*, volume 14606 LNCS, pages 219–230. Springer.
- Fengqi Li, Zhijian Cao, and Xinchun Li. 2023. College translation teaching in the era of artificial intelligence: Challenges and solutions. *Journal of*

- Higher Education Theory and Practice*, 23(19):39–49.
- Marek Wojciech Łukasik. 2024. The future of the translation profession in the era of artificial intelligence: Survey results from Polish translators, translation trainers, and students of translation. *Lublin Studies in Modern Languages and Literature*, 48(3):25–39.
- Mark Mabrito. 2024. Artificial intelligence in the classroom: Conversation design and prompt engineering for English majors. *International Journal of Technologies in Learning*, 31(2).
- McKinsey & Company. 2023. The economic potential of generative AI: The next productivity frontier. Technical report. <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier#introduction>. Accessed April 04, 2025.
- Sahar Yousif Mohammed, Abed Shahooth Khalaf, Mohammed Aljanabi, and Maad M. Mijwil. 2024. Challenges and opportunities in translation studies: The evolving role of Generative AI in translation development. In Nadia Mansour and Lorenzo M. Bujosa Vadell, editors, *Sustainability and Financial Services in the Digital Age*, pages 107–117. Springer, Cham.
- Mohammed Mohsen. 2024. Artificial intelligence in academic translation: A comparative study of large language models and Google Translate. *Psycholinguistics*, 35(2):134–156.
- Brian Mossop. 2000. The workplace procedures of professional translators. In Andrew Chesterman, Natividad Gallardo San Salvador, and Yves Gambier, editors, *Translation in Context: Selected papers from the EST Congress, Granada 1998*, volume 39 of *Benjamins Translation Library*, pages 39–48. Benjamins.
- NAATI. 2024. NAATI assessment rubrics. <https://www.naati.com.au/news/naati-releases-refined-assessment-rubrics-on-1-april-2024/>. Accessed April 04, 2025.
- Christiane Nord. 2018. *Translating as a purposeful activity: Functionalist approaches explained*. Routledge, 2nd ed.
- Jiyeon Park and Sam Choo. 2024. Generative AI prompt engineering for educators: Practical strategies. *Journal of Special Education Technology*:01626434241298954.
- Rajvardhan Patil, Thomas F. Heston, and Vijay Bhuse. 2024. Prompt engineering in healthcare. *Electronics*, 13(15):2961.
- Huaqing Wu, Lenny Yang, Arthur Wan, and Ming Qian. 2024. Augmented machine translation enabled by GPT4: Performance evaluation on human-machine teaming approaches. In *Proceedings of the First Workshop on NLP tools and Resources for Translation and Interpreting Applications*.
- Himath Ratnayake and Can Wang. 2024. A prompting framework to enhance language model output. In Tongliang Liu, Geoff Webb, Lin Yue, and Dadong Wang, editors, *AI 2023: Advances in Artificial Intelligence*, volume 14472 of *Lecture Notes in Computer Science*, pages 66–81. Springer, Singapore.
- C. Kishor Kumar Reddy, Pellate Anoushka, Akhil Draksharapu, and Srinath Doss. 2024. Beyond Text: Analyzing artificial intelligence models through prompt engineering. In Inam Ullah Khan, Hamed Taherdoost, Mitra Madanchian, Ouaisa, Salma El Hajjami, and Hameedur Rahman, editors, *Future Tech Startups and Innovation in the Age of AI*, pages 120–156. CRC Press. publisher: CRC Press.
- William C. Ritchie and Tej K. Bhatia. 2012. Social and psychological factors in language mixing. In Tej K. Bhatia and William C. Ritchie, editors, *The Handbook of Bilingualism and Multilingualism*, pages 375–390. Wiley, 1st ed.
- Yousef Sahari, Abdu M. Talib Al-Kadi, and Jamal Kaid Mohammed Ali. 2023. A cross-sectional study of ChatGPT in Translation: Magnitude of use, attitudes, and uncertainties. *Journal of Psycholinguistics Research*, 52(6):2937–2954.
- Kizito Tekwa. 2024. Artificial intelligence, corpora, and translation studies. In Defeng Li and John Corbett, editors, *The Routledge Handbook of Corpus Translation Studies*, pages 103–118. Routledge.
- Hans J. Vermeer and Andrew Chesterman. 2021. Skopos and commission in translational action. In Lawrence Venuti, editor, *The translation studies reader*, pages 219–230. Routledge.
- David Vilar, Markus Freitag, Colin Cherry, Jiaming Luo, Viresh Ratnakar, and George Foster. 2023. Prompting PaLM for translation: Assessing strategies and performance. arXiv:2211.09102 [cs].
- Longyue Wang, Chenyang Lyu, Tianbo Ji, Zhirui Zhang, Dian Yu, Shuming Shi, and Zhaopeng Tu. 2023. Document-level machine translation with large language models. arXiv:2304.02210 [cs].
- Engy Yehia. 2024. Developments on Generative AI. In Purvi Pokhariyal, Archana Patel and Shubham Pandey, editors, *AI and emerging technologies: Automated decision-making, digital forensics, and ethical considerations*, pages 139–160. Routledge.
- Jia Zhang. 2023. Exploring undergraduate translation students’ perceptions towards machine translation:

- A qualitative questionnaire survey. In Masaru Yamada and Felix do Carmo, editors, *Proceedings of Machine Translation Summit XIX, Vol. 2: Users Track*, pages 1–10. Asia-Pacific Association for Machine Translation.
- Jia Zhang. 2025. Too tricky for rookies? An enquiry into novice translation students' machine translation literacy. In Song Ge and Chen Xuemei, editors, *Multilingual Education Yearbook 2025 - Translation Practices as Agents of Transformation in Multilingual Settings*. Springer.
- Jia Zhang and Hong Qian. 2023. The impact of machine translation on the translation quality of undergraduate translation students. In Masaru Yamada and Felix do Carmo, editors, *Proceedings of Machine Translation Summit XIX, Vol. 2: Users Track*, pages 99–108. Asia-Pacific Association for Machine Translation.
- Wenjuan Zhao, Siyu Huang, and Lizhen Yan. 2024. ChatGPT and the future of translators: Overview of the application of interactive AI in English translation teaching. In *2024 4th International Conference on Computer Communication and Artificial Intelligence (CCAI)*, pages 303–307, Xi'an, China. IEEE.