

# An Empirical Study on the Improvement of Students' Strategic Competence Through Translation Project Teaching

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## Abstract

Strategic competence, as a meta-cognitive ability, determines the other translation sub-competences. To tease out how students' strategic competence is developed in translation project is significant in enlightening the translation teaching practice. This study explores how five Chinese college students' translation competence, particularly their strategic competence, develop within a translation project introduced into the translation teaching of the authors' institute. Strategic competence includes four parts: problem identification, solution proposal, action taking, and decision making. By examining both the translation process and the translation product, including translation tasks, translation logs, group discussions, and interviews from five student translators, we found that the overall translation competence of the student translators has significantly improved. The development of various elements of strategic ability is uneven, with the abilities to identify problems, evaluate issues, and take measures showing the most significant improvement. However, there is a lag in decision-making capabilities in translation output. Based on these findings, the study provides concrete suggestions for improving the teaching of translation.

**Keywords:** translation teaching, translation project, translation competence development, strategic competence

## 1. Introduction

Translation competence is usually referred to as expert knowledge that is not possessed by all bilinguals, made up of several closely-linked sub-competences. Therein, strategic competence, a core sub-competency within the broader translation competence, is typically explicit, conscious, and reflective of procedural knowledge. Strategic competence is interrelated to the translator's agency, reflecting the range of abilities, skills, and resources a translator can mobilize in his or her translation process, and is considered the most important part of translation competence (PACTE, 2000; Bai et al., 2018; Gregorio-Cano, 2022). Simply put, strategic competence can be defined as problem-solving ability, manifesting as a series of actions and plans taken to identify and resolve different translation issues. It can be developed through particular training or practice and is part of the process of socialization of the translator.

It is generally accepted that translation competence can be evaluated through an examination of translation products and the translation process itself, which are referred to as product-based and process-based translation competence research, respectively (Fang & Wang, 2014). However, current research on how translation competence is acquired or developed is still in a nascent phase. There is a significant need for extensive empirical research that investigates the intricacies of the translation process as well as the outcomes of translations. These studies, if in a longitudinal nature, would yield a comprehensive understanding of the complexities involved in translation competence development.

The trend in translation pedagogy is to incorporate real translation projects, which is indicative of a process-oriented approach to translation teaching (Kiraly, 2005; Wang, 2019). The teaching practice in the present research starts with the very question of "how students strategic competence develop in solving concrete and real-life translation problems they encounter." In order to answer this question, we integrated a medical translation project in our course of "Advanced Translation Theories and Techniques" and followed five students' translation experience in a two-year span. Referencing existing theoretical frameworks and sub-categories of translation strategy competence, the present research collected an array of data in order to discover in which areas translator competence has developed, what factors influence this development, and to inductively describe and summarize the components of written translation strategic competence and their overall developmental trajectory. Empirical

research on competence can provide the basis for translation instruction.

## 2. Literature Review

### 2.1 Translation Competence and Development

Translation Competence, or shortened as TC, refers to the latent knowledge and skill system essential for translators to engage in translation work (PACTE, 2005). The pluralistic view of translation competence remains the prevailing perspective (Colina, 2003), that is to say, translation competence comprises different components and can be deconstructed into multiple, multi-layered, and interrelated sub-competencies. Among the most renowned is the six-component model of translation competence proposed by the PACTE research group at the Autonomous University of Barcelona in 2003. In this model, translation competence is divided into five sub-competences (bilingual sub-competence, extra-linguistic sub-competence, knowledge about translation sub-competence, instrumental sub-competence, strategic sub-competence) as well as psycho-physiological components.

In comparison, research on translation competence in China began rather later, primarily consisting of introductory works (e.g., Miao, 2007; Tong, 2010) and empirical studies often drawing on Western theories (e.g., Ma & Guan 2010). In recent years, there have been significant advancements in the theoretical modeling of translation competence within the context of English education in China. Notable developments include the written translation competence scale by Bai, et al. (2018), the interpreting competence scale by Wang (2017), and factors affecting the professional translation competence of MTI students proposed by Dong et al. (2022).

Compared with synchronic theoretical discussions of translation competence, research on the acquisition/development of TC is still in its “infancy” (Göpferich, 2013, p. 61). For instance, Shreve (1997) posits that a translator’s TC develops from natural translation towards a more constructivist approach. Chesterman (2000) summarizes a five-stage model of TC development: novice, advanced learner, competent, proficient, and expert stages. PACTE (2000) divides the acquisition of TC into pre-translation competence and translation competence phases. Liu (2011) differentiates between language ability cultivation and skill training stages.

However, overall, the “stage” theory of translation competencies is too general and lacks sufficient diachronic research evidence. Göpferich (2013) examines the development process of TC from a dynamic systems perspective, finding that the development of student translators’ abilities does not follow a linear pattern and may even stagnate midway. Dynamic systems theory offers a constructive view for the study of translation competence acquisition, but it does not explore how social interaction influences the development of translator competence.

Wu (2014), based on the framework of written translation competence from the European Master’s in Translation project, demonstrates the developmental process of different sub-competences by annotating student translator logs. However, this study focuses only on translator log data and employs a singular research methodology. Dong, et al. (2022) argue that research on the development of translation competence should start from the learner’s perspective, conducting empirical studies on the actual state of student translators, their developmental process, and the multidimensional social influence factors, in order to uncover the patterns, characteristics, and social interactive mechanisms of translation competence development.

### 2.2 Strategic Competence and Its Components

The pluralistic view of TC is inclusive, but such an all-encompassing model of competencies fails to reveal the essence of translation ability (as argued by Pym, 2003), hence focusing on a single ability might provide deeper insights into the nature of TC development. Strategic Competence, or shortened as SC, in particular, is the ability to identify and choose appropriate methods to solve translation problems. Most multifaceted models of translation competence include strategic competence as a sub-competence, which ensures procedural knowledge to guarantee the efficiency of the translation process and to solve problems encountered. The PACTE (2003) group has outlined strategic competence to include: 1) the use of translation strategies; 2) the identification and resolution of translation problems; 3) monitoring and evaluating the translation process; 4) activating other sub-competencies of translation and compensating for their deficiencies; 5) planning and executing the entire translation project (cited from Chen 2021, p. 48). The PACTE (2009) group pointed out that SC is related to decision-making competence, which reflects the level of strategic competence. PACTE (2017) considers strategic competence as controlling the translation process, influencing and coordinating other sub-competencies, and sitting at the center of the competence model. From an educational context, Kelly (2005) views strategic competence as involving problem identification, problem-solving, monitoring, self-evaluation, and revision, emphasizing that SC is at the apex of the TC ‘pyramid’ model. Göpferich (2009) considers strategic competence a type of metacognitive ability, endowed with subjective agency, controlling the use of other sub-competencies and a focal point in the teaching of

translation projects; similar to Höning's (1991) macro-strategies and related to motivational components within specific contexts.

In China, Bo and Li (2011), taking the analysis of Chinese-to-English translation questions from the Test for English Major Band Eight in 2015 as an example, discuss the components and model construction of translation strategy competence. This includes the ability to determine the theme and author's intent in the source language text (abbreviated as theme determination ability), the ability to construct cognitive frameworks linking the theme and context of the source language segment (abbreviated as cognitive framework construction ability), the ability to make explicit the potential semantics in the source language phrases (abbreviated as potential meaning explication ability), the ability to select words and meanings in the target language segment (abbreviated as word choice and meaning selection ability), and the ability to ensure cohesion and coherence in the target language segment (abbreviated as cohesion and coherence ability).

Bai, et al (2018) posit that translation strategies are the means adopted to resolve translation problems based on the identification of such problems, encompassing specific strategies in four phases: planning (pre-translation preparation, pre-translation inquiry), execution (addition, simplification, transformation, reorganization, direct translation), evaluation (reviewing), and remediation (correcting the translation, post-translation inquiry). In the written translation competence scale proposed by Bai et al. (2018), strategic competence is at the model's center, representing the overall plan or method translators adopt to achieve specific translation objectives. Cheng and Wu (2016) proposed a learner's strategic competence composed of five sub-competencies: problem identification, problem definition, proposal of solutions, evaluation of solutions, and decision-making, and detailed the dynamic development of learner's strategic competence through the examination of translation logs. Strategy is the measures and means adopted based on problem identification. Whether at the apex of the pyramid or the center of the model, it indicates that strategic competence is the core of translation competence. One of the main goals of translation teaching is to cultivate students' strategic competence (Sang 2017), yet diachronic studies on the development of strategic competence in teaching contexts remain scarce. Strategic competence reflects the translator's ability to identify problems and adopt methods or techniques to solve them (Gregorio-Cano, 2020), completing and improving the quality of translations. Within the various sub-competencies of strategy, the key is decision-making, which implies appropriate selection and rejection of information and is the concentrated manifestation of strategic competence.

Current research on translation process often draws from macro-sociological theories, particularly the theory of social practice by Bourdieu, which has been a focus of attention (Wu, 2019). This was also mentioned by Gambier in an interview in 2019 (Wang & Wang, 2019). However, research on the acquisition/development of translation competence is still overall in the initial stage, thus requiring long-term empirical studies to examine the translation process and the translated products. However, time-consuming diachronic studies are few and far between, leaving a significant research void. In particular, research has not deeply explored or explained the real conditions of student translators' ability development within the context of English education in China, and the findings are relatively sparse. Strategic competence in translation is often regarded as the central element in translation competence, and the investigation of students' strategic competence developmental characteristics in real-life translation project will probably shed light on the translation theory and teaching practice.

### **3. Methods**

#### *3.1 Research Question*

Drawing upon previous literature on translation competence, we divide the constituents of strategic competence into four parts: identifying translation problem, evaluating translation problem, taking measures, and making decisions. The specific research questions are: (1) How do student translators' strategic competency develop and become constructed during the actual process of written translation? (2) What kind of developmental patterns of the four parts of strategic competence (i.e., problem identification, problem evaluation, measure adoption and decision making) are shown in students' translation project process?

#### *3.2 The Translation Project Introduced into the Course*

A medical translation project was integrated into the translation course of "Advanced Translation Theories and Techniques" of the researchers' institute (Jiangxi University of Finance and Economics, JUFEC). This medical project belongs to the JUFEC Cochrane team affiliated with the Center for Evidence-Based Chinese Medicine at Beijing University of Chinese Medicine (BUCM). Cochrane is an international, non-profit, independent medical organization dedicated to providing up-to-date information related to health care and policy for healthcare workers, patients, and their families through systematic reviews of evidence-based medicine. The JUFEC team consists of three teachers and different numbers of students as the number of course-takers vary in different

semesters. All of the translation work is voluntary and the translated works are published at last after prudent reviews and revisions.

The overall procedures for each translation task are as follows: claiming a task, submitting the first translation draft, first review and feedback by teachers in charge, first revision by students, second review and feedback by teachers in charge, second revision by students, final review from BUCM experts, and publication of the manuscript on Cochrane Chinese website. During this process, the JUFEE team regularly holds group discussions on specific translation issues (with recordings and meeting memos), students write translation logs after each translation task completed, and teachers conduct post-translation interviews with students. Students taking the translation course were required to accomplish at least one translation task each semester.

### 3.3 Data

The data used for the present research spans from June 2019 to April 2021, encompassing various types of data including multiple versions of student translators' drafts, translation logs, interviews, group discussion transcripts. The details of the data are as follows. In all, five student participants (S1, S2, S3, S4, S5) from the Cochrane translation project were selected as informants for this study. Actually, there were many student volunteers involved in this real-world translation project, but the data collected from these five students were the most comprehensive. They regularly participated as a fixed cluster in group translation meetings and discussions, and their volunteer service lasted for nearly two years. These five research participants have successfully obtained their volunteer certificates from the Cochrane and have completed their studies at Jiangxi University of Finance and Economics. The five students' data includes: eight pieces of group discussions (transcribed to approximately 123,000 Chinese characters); two one-on-one interviews with each student translator (10 interviews in all), each lasting about 30 minutes (transcribed to approximately 41,000 Chinese characters); 42 published Chinese translations and the corresponding 126 drafts of these translations; and 32 entries of translation logs collected from the translators.

### 3.4 Data Analysis Method

The analysis process of the collected data is as follows. First, the authors carried out a comparative analysis of the first and last translation drafts by each of the five students to categorize and mark translation errors, thereby objectively summarizing the characteristics of their written translations. Generally, fewer errors in the initial drafts of their final tasks indicate improved translation competence, indicating the overall developmental trend of the students' translation abilities. Second, annotation was made to the students' translation logs to identify patterns and stylistic differences in the translators' consistent manners of discovering, planning, evaluating, and decision-making when faced with translation problems. Based on the four sub-competencies of strategy—identifying problem, proposing solutions, taking measures, and making decisions—the transcripts of each workgroup discussion are analyzed to track the development of these strategic sub-competencies, in conjunction with statistical and analytical examination of the learners' translation logs. The two authors verified each annotation to ensure the reliability and validity of the coding; they then organized, summarized, and supplemented other components of the strategic sub-competencies. Third, analysis was made to group discussion recordings to examine how interaction during group discussions influences translation decisions. Fourth, the authors conducted thematic analysis of interview recordings to compare and corroborate the findings from the first three steps, facilitating triangulation and multi-dimensional interpretation.

To enhance the clarity of our annotation process, a detailed elaboration is hereby provided on the four components of strategic competence. Problem identification refers to the translator's ability to clearly recognize uncertainties, difficulties, and issues encountered during the translation process and to discern or identify the type or nature of the problems they faced, such as linguistic issues, specialist knowledge problems, or encyclopedic knowledge issues. Proposing solutions means that based on the qualitative understanding of the problem, the translator can offer their views, insights, or analysis, especially in response to feedback from revision and within group discussions. The development of solutions often relies on the recognition of identified problems. Taking measures refers to the translator's ability, based on the proposed solutions, to utilize available resources such as online searches, peer consultation, or mutual aid, and to adopt appropriate translation techniques such as supplementation, simplification, transformation, reorganization, or direct translation, to resolve issues in translation. Making decisions refers to the translator's ability to settle and make final decisions about the "problems" present in the translation after revision and group discussions, that is, to produce the translated text. These four sub-elements of decision-making ability are interconnected and interdependent, but not necessarily linear, as the translation usually undergoes at least two rounds of revision. During this process, decisions are likely made twice, and the solutions proposed and measures taken by the translator may vary during different rounds of revision.

## 4. Results and Discussion

### 4.1 Improved Competence Reflected from Translation Products

Based on the data analysis, it is found that over time, the translation competence of the five student translators as a whole shows a non-linear upward trend, with some experiencing temporary setbacks. We suppose that decreasing translation errors (including lexical, syntactic and textual) in students' first draft indicate increasing translation quality and thus increasing translation competence they are more involved in the translation project. Therefore, we made a comparison of the first draft of the first translation task (T1) and the first draft of the last translation (Tf) (Note 1) for each of the five translators and the result is shown in Table 1.

Table 1. Translation errors found in Ss' first and final draft

Error type	S1		S2		S3		S4		S5	
	T1	Tf	T1	Tf	T1	Tf	T1	Tf	T1	Tf
Lexical	14	5	10	2	16	8	12	5	9	3
Syntactic	6	3	5	2	5	2	8	3	4	2
Textual	5	2	4	2	3	2	4	2	3	1
Total	25	8	19	6	24	11	24	10	16	6

Table 1 shows that, overall, the number of translation errors contained in the students' first translation drafts of their last translation task has decreased significantly, implying a better translation quality and an improvement in their translation competence. This reduction in errors is seen across the lexical, grammatical, and discourse levels, with lexical errors being the most significant in the Tf versions.

The evidence-based medicine texts contain many specialized terms which require fixed translated expressions in Chinese. For instance, "review", as a technical terms in evidence-based medicine systematic reviews, should be translated as "系统综述" rather than "回顾", "述评" or "评论". The appropriate term for "outcome" should be "结局" rather than "结果", while "certainty" corresponds to "可靠性" of evidence quality, not "必然性" in Chinese. There are also a lot of medical terms related to symptoms, diseases, cure, etc., like "schizophrenia," "Optical Coherence Tomography," "Laparoscopy," "Antineoplastic treatment," "Metabolic syndrome," "Antiangiogenic drug," "endometrial cancer," "hysterectomy".

Prior to the translation project, we have given students a list of these technical terms and asked them to get familiar with it. We also invited our collaborator, Dr. Li from Beijing University of Chinese Medicine to give students an orientation about the discipline of evidence-based medicine and the Sinicization project. Therefore, students were supposed to commit fewer mistakes in terms of professional terms. However, in reality, the first drafts of the five students' first task team with lexical errors, most of which are about evidence-based medicine, because those EBM technical terms, like "review" and "outcome" look like general terms, instead of technical terms. Therefore, students need to take some time to adapt themselves to their Chinese counterparts through different draft revisions and group discussions.

With the student translators' increasing proficiency and mastery of systematic reviews and medical terminology, the most noticeable decrease was in lexical errors. Discourse-level errors were relatively few, which may be because medical texts are more about presenting the objectivity of medical evidence, and the linguistic devices for discourse coherence involved are not common. It is also worth mentioning non-linguistic errors, such as punctuation and spacing, which have received less attention in past empirical translation studies. In this project, the instructor repeatedly reminded students to use the correct Chinese punctuations and spacing to avoid the mixing of Chinese and English symbols. Such kind of errors was also rarely seen in the final translation task. The interviews with the students also corroborate the above statistical data.

For example, S2 mentioned,

"I personally feel that I have improved in many aspects of translation, especially in terms of terminology and medical knowledge. At the beginning of this translation task, I took many terms for granted. After the teacher pointed it out once or twice, I would carefully compare with a glossary, or I would specifically search for terms on CNKI or some medical websites before deciding on the appropriate Chinese translation."

S5 said,

"I am quite interested in translating medical texts, and my sister studies medicine, specifically

clinical medicine. Through this project, I have gained a lot, such as becoming more familiar with medical terminology. I felt more at ease with the terminology in the later stages of translation. I also learned a lot about translation from other team members, such as various online translation tools for specialized terms.”

From the interviews, we find that students’ perception of the translation project is very positive in improving their translation competence, including bilingual competence, instrumental competence and collaborative spirit. The overall improvement of their competence actually facilitates their strategic subcompetence.

#### 4.2 The Development of Different Facets of Strategic Competence

We have coded the four aspects of strategic sub-competence in the five students’ translation logs. As shown in Figure 1, the sub-components of strategic competence of the five students overall display a skew, with the most significant performance in problem identification. This suggests that students are becoming adept at recognizing translation problems during their work process. It should be noted that Subject 5’s data are generally sparse, which does not imply a lack of ability in discovering or resolving problems. It, on the opposite, indicates her translations are generally of higher quality, and consequently, she encounters fewer errors, which is also validated from her error data in Table 1 as she performed the best among the five. However, there is a lag in decision-making related to translations, which may be associated with the gradual atrophy of the students’ Chinese proficiency due to years of English language study. This is echoed by S3 in an interview:

After learning English, I feel as if I can’t speak human language anymore, oh, that is to say, I can’t express myself adequately in Chinese. So, when converting to Chinese, I always feel that my expression is not sufficient, not as precise as you [the instructor] in choosing among the many possible Chinese expressions.’ Since making decisions ultimately concerns choosing the Chinese translations, English majors feel their Chinese expression is lacking due to daily immersion in English. This has practical implications for English language teaching, highlighting that while fostering English proficiency, the foundation of students’ Chinese language skills must not be neglected.

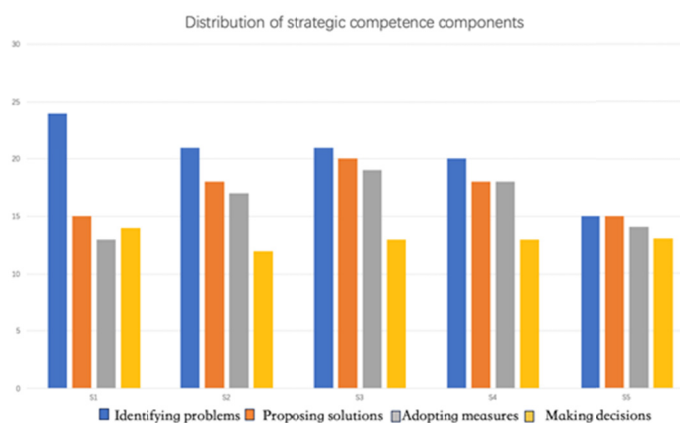


Figure 1. Overall distribution of strategic competence components

The general trend of strategic sub-competence development can be observed by comparing the distribution of students’ problem identification, solution proposal, adopting measures and making decisions between students’ Log 1 and Log 8 in the following figures.

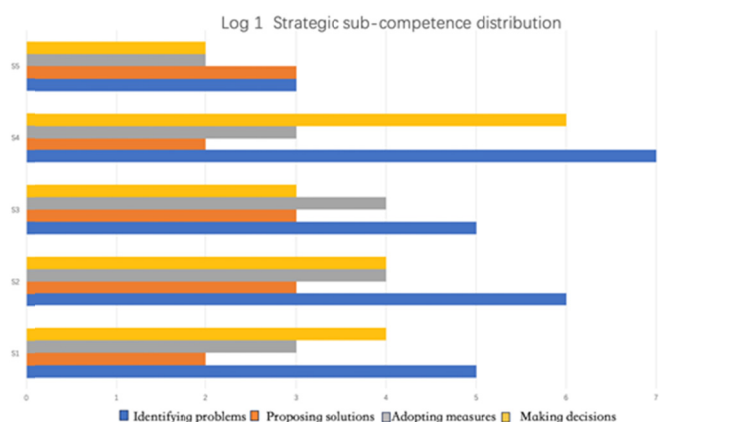


Figure 2. The distribution of strategic competence components in Log 1

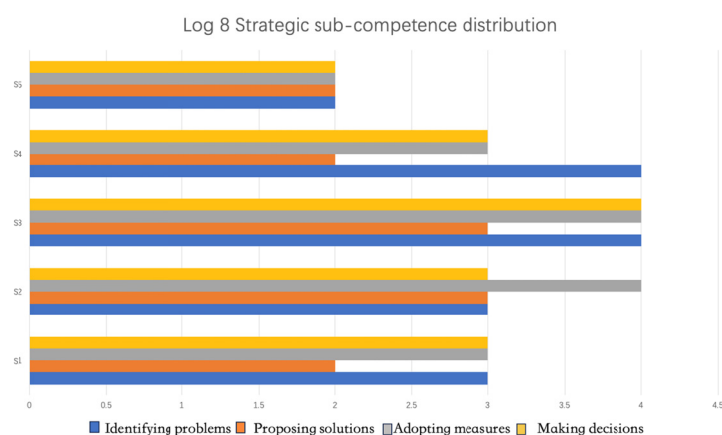


Figure 3. The distribution of strategic competence components in Log 8

Figures 2 and 3 illustrate the change of various strategic sub-competencies in one of our student translator's first and last translation logs, respectively. While the numerical values may not reveal substantial differences, a clear observation can be made regarding the overall distribution of sub-competencies. In Log 8 (the last log), the percentage of identifying problems, proposing solutions, taking actions, and making decisions is more balanced. This suggests that with the accumulation of translation experience through a series of tasks, the student's strategic competence has improved overall. Ideally speaking, these four elements should be in balance, as the ultimate resolution of identified problems is reflected in the decision-making for those translation problems. As students enhance their strategic competence, they are more capable of proposing possible solutions for the translation problems they have identified, taking pertinent measures to address them, and ultimately resolving them, resulting in more informed translation decisions. After all, translators have to arrive at their translation decisions to accomplish their translator identity. This is also evidenced in the student's interview.

"Before, when I came across difficult issues in translation, I know my problem, and I have tried to search for the solution. In particular, I got to know a lot of sources from my peers. I have found those potential answers, but I'm afraid of deciding on which one because I have no idea of it. I relied more on you [the teachers and reviewers] to decide on a translation, but now that changed. I think I am a translator, and I need to give an answer to show that I am a translator."

## 5. Conclusion

Throughout the translation teaching process of this project, we have examined the development of students' translation abilities and found the change of their strategic subcompetences. The development of various sub-competencies and strategic abilities shows particular inclinations, with the most notable improvements in identifying, evaluating, and taking measures to address problems, although there is still a need for improvement in

decision-making.

From this pedagogical practice, we propose the following directions for future educational reforms. First, we should enhance interaction between teachers and students, as well as among students themselves, in translation teaching. The use of specialized training and the input of professional glossaries are the most direct and effective for developing professional knowledge skills. In specific translation teaching, students could first be introduced to the background knowledge of a particular topic before beginning translation practice, which can yield more effective results. Second, an ideal translation classroom should integrate teaching with project practice. For students, engaging in real translation projects can bring a tangible sense of achievement, experience the responsibilities of a translator, cultivate professional translation literacy, and help them quickly understand the role of professional translators. Third, translation educators and MTI tutors must participate conscientiously in students' translation tasks, guiding them hands-on through their translation tasks, effectively aiding students, and cultivating linguistically capable, responsible language service professionals with correct values.

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## Note

Note 1. The number of translations completed by the five student translators varies, and therefore the numerical sequence of their last translation differs. Here, 'Tf' is used to denote the sequence number of the last translation they completed, with 'f' representing 'final'.

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## Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

**Informed consent**

Obtained.

**Ethics approval**

The Publication Ethics Committee of the Canadian Center of Science and Education.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

**Provenance and peer review**

Not commissioned; externally double-blind peer reviewed.

**Data availability statement**

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

**Data sharing statement**

No additional data are available.

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