



Exploration of the Cultivation of Post-editing Ability of Chinese College Student Translators in the Digital Age

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Abstract

With advancements in technology, large models such as GPT possess powerful text generation and semantic understanding capabilities following training. They have demonstrated remarkable flexibility and accuracy in the field of machine translation. In this context, the workflow and model of translation have changed. Post-editing in the context of machine translation is a very important part of the translation process, and it has been a topic of interest in recent research. Many studies have shown that the popularization of large language models has put forward new requirements for translators, especially student translators. This paper analyzes the continuous changes in translation technology in the context of the digital age and explores the construction of a training model suitable to improve student translators' post-editing ability. Based on constructivist theory and the PACTE translation model, this paper employs a hybrid "online + offline" training approach to guide student translators in establishing translation projects, conducting post-editing practices, and utilizing a three-dimensional evaluation method. This approach aims to effectively enhance students' post-editing abilities, particularly in translation efficiency, technology application, and translation skills.

Keywords

Post-editing; Large language model; Student translators

1. Introduction

With the advancement of technology, the popularization of artificial intelligence has exerted a great influence on the language service industry, especially the translation industry. Large models represented by GPT have powerful text generation and semantic understanding capabilities after training, and they have demonstrated extremely high flexibility and accuracy in the field of machine translation. In this context, the workflow and model of translation have changed. The traditional translation model can no longer meet the needs of the domestic and international translation market. The "human-machine collaboration" translation model has been widely used in the industry, and post-editing has become an important link in ensuring translation quality. Carmo et al. (2020) discussed the differentiation between editing, post-editing, and revision in the context of machine translation. They emphasized the importance of understanding the specific tasks involved in post-editing to improve translation quality. As the main force of the future in translation industry, student translators should improve themselves with the progress of the times. Therefore, this paper hopes to help students improve their automatic translation post-editing skills based on their own characteristics and needs, with the help of big language models, such as GPT, Kimi, and Doubao, and build a more intelligent and efficient training model for students.

2. Literature Review

First, in addition to having solid bilingual skills, translation post-editors in the digital age must also be proficient in operating computer-assisted translation tools and post-editing tools, parsing complex texts, retrieving information, and using the corpus. Faced with changes in translation market demands and updated translation technologies, student translators need to continuously improve their post-editing skills and have digital humanities literacy in order to adapt to the needs of industry development. Zhong et al. (2024) pointed out that ChatGPT+MTP (machine translation post-editing) can improve translation efficiency and release the productivity and creativity of post-editing. Therefore, cultivating ChatGPT+MTP skills can help to bring out the advantages of humans and ChatGPT and improve translation efficiency. Many studies have shown that the popularization of large language models has been widely recognized by translators. Xiao (2021) explored a new model for cultivating collaborative translation and post-editing capabilities among teachers and students based on "computer-assisted translation + machine translation + post-editing" (CAT+MT+PE) and driven by book translation projects. He also discussed the connotation, teaching design, implementation steps, and training effects of the model. Lee et al. (2021) introduced IntelliCAT, an interactive translation interface that incorporates neural models for post-editing machine-translation output. Their results showed significant improvements in translation quality through post-editing based on quality estimation and translation suggestions. Zouhar et al. (2021) conducted an experimental study on the relationship between NMT performance and post-editing time and quality. They found that better MT systems lead to fewer changes in sentences, but the relationship between system quality and post-editing time is complex and not solely determined by BLEU scores. Raunak et al. (2023) explored the use of GPT-4 for automatic translation post-editing across various language pairs. Their results demonstrated the effectiveness of GPT-4 in producing meaningful edits that enhance translation quality and address major errors. Jia et al. (2019) found that student translators' attitudes toward post-editing would affect their post-editing performance.

Overall, the literature on post-editing in machine translation highlights the importance of developing flexible models, understanding the specific tasks involved, and leveraging advanced technologies like neural models to enhance translation quality. Academic circles have also begun to pay attention to the cultivation of post-editing ability. Therefore, the cultivation of post-editing skills among student translators is a necessity of the times. Among them, O'Brien (2002) first proposed that post-editing should be included in translation teaching, and drafted a post-editing teaching syllabus, suggesting that post-editing courses should be offered in the senior stage of translation majors (preferably at the graduate level).

3. Theoretical Framework

Table 1. Theoretical Framework of the Training Model

No.	Current Status	Necessity	Theoretical Framework	Principle
1	The popularity of machine translation	Improve translation efficiency	Post-Editing Training Model	accuracy
2	Application of the large language models	Learn translation technology and improve translation quality	PACTE translation model	Translation tools and skills
3	Diverse translation market needs	Establish translation projects and translation processes	Constructivist theory	Teacher-student collaboration

In terms of the current research situation, Feng and Liu (2018) constructed a three-dimensional model of post-editing ability that includes cognitive dimension, knowledge dimension, and skill dimension, providing a reference for formulating the teaching objectives and content of post-editing. We will continue to improve and build a training model that is more suitable for student translators to adapt to the needs of the translation market in the digital age and achieve a teaching effect that integrates production, learning, and research. This paper combines the constructivist theory and PACTE translation model to analyze student translators' bilingual sub-competence, extra-linguistic competence, instrumental sub-competence, strategic sub-competence, and professional knowledge about translation, and on this basis summarizes the characteristics of translation ability acquisition (PACTE, 2009). With the concept of "students as the main body, teachers as the guide, and relying on large language models", we establish translation project teams through classroom translation

activities. It includes three major steps: pre-translation preparation (the establishment of the project team and terminology database), first draft formation, and modification and evaluation. Through the project teams' slide presentation and exchange of experiences, a translation training model of teacher-student collaboration is constructed. In addition, the evaluation, based on the five competencies of the PACTE translation model, is carried out from the following three dimensions, self-assessment, peer review, and teacher evaluation.

4. Construction and Evaluation of the Training Model

4.1 Construction of the Training Model

Based on the above theoretical framework and real needs, this study designed an automatic translation post-editing training model suitable for student translators. Through the joint efforts of both teachers and students, student translators' translation efficiency and technical application ability are improved through activities inside and outside the classroom.

According to the above teaching design, with the help of the large language model platform, the training model steps are as follows:

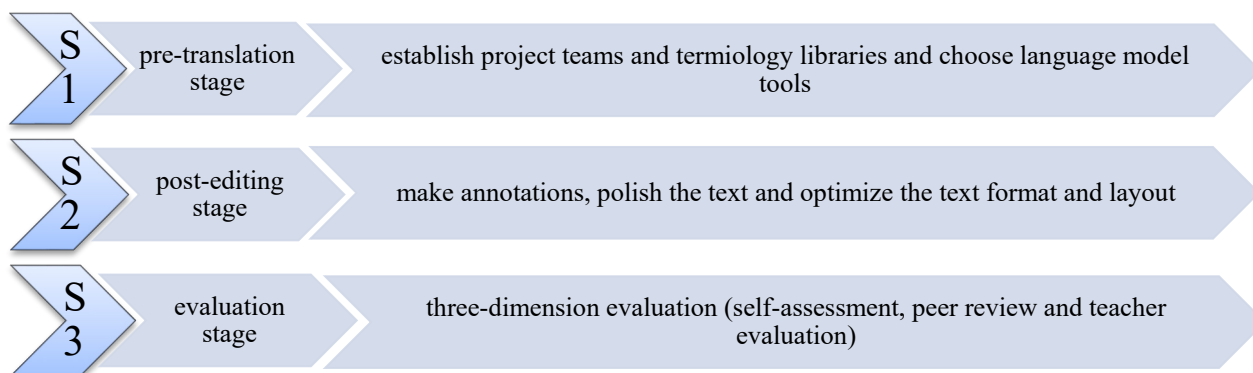


Figure 1. Construction of the Training Model

S1 is the pre-translation stage, in which project teams are formed by grouping among student translators, division of work and role arrangement is carried out, and corresponding terminology libraries are established based on different projects. In terms of large language model tools, the domestic large language models are developing rapidly and a variety of them are flourishing. Student translators can choose the one that suits them according to their own needs and usage habits.

S2 is the post-editing stage. Student translators conduct post-editing based on the machine-translated text. Teachers provide guidance before editing, focusing on the use of prompts and common errors in machine translation. Student translators make annotations and polish the text to unify the language style and finally optimize the text format and layout.

S3 is the evaluation stage. Based on the competencies of the PACTE translation model, student translators first conduct a self-evaluation of their team's translation and make a report. Secondly, it is the peer review session. Students from other groups raise questions and suggestions, which are recorded by the group leader, and a representative is designated to make explanations in the final exchange session. Finally, the teacher acts as a mentor, monitoring the task allocation and participation of each group of student translators throughout the process, and together with the student translators selects the best team for this translation project.

4.2 Evaluation of the Training Model

In order to explore the impact of this training model on the machine translation post-editing ability of student translators, this study conducted the corresponding experiments and surveys. The experimental subjects were student translators (junior students majoring in English) from the project teams and teachers of the translation courses. The survey was conducted through semi-structured interviews to get their opinions on this training model. Face-to-face individual interviews were conducted with the students and one teacher of translation courses, using the native language (Chinese). All seven students were project team managers, selected purposefully. Each interview lasted for about 20 minutes. Considering the crucial role of the teacher in the training model, the interview lasted about 40 minutes. They were asked to express their perceptions of post-editing experiences in the first translation project. After that, the focus shifted toward the difficulties of post-

editing practice through the training model. In the end, students were asked what they found in post-editing practice, and their understanding of the translation knowledge. The teacher was asked more about the advantages, challenges, and improvements of the training model.

Student translators took a positive attitude towards this model, saying that it greatly improved their translation efficiency and helped to free themselves from the practice of translating long texts. Student A realizes that post-editing is an integral part of the translation process and is crucial to ensuring translation quality and improving the accuracy and fluency of the translation, but she worries that some students might rely too much on translation. Student D believed that post-editing is not just about language correction, but also includes in-depth consideration of cultural differences, contextual adaptation, and target readers. Only one student held the view that post-editing is only a minor step in translation and is not as important as the initial translation. Such a negative attitude may stem from a misunderstanding of the role of post-editing or a lack of experience. With the help of the large language models, its language processing speed, translation tool proficiency, and professional knowledge of translation have been significantly improved. Although the effect of machine translation is obvious, student translators believed that manual proofreading and text optimization were indispensable parts of post-editing to ensure the quality of translation.

Translation teachers generally had a positive attitude towards post-editing and believed that it was an indispensable part of translation education. She emphasized the harmonious coexistence of technology and people, advocated innovative teaching models, and set high standards for student translators' post-editing capabilities. At the same time, she was also aware of the challenges brought about by technological iteration and upgrading, and the need to continuously update and improve teaching content and methods in practice. Compared with the traditional translation classroom, the innovation of this training model is a challenge for teachers. First of all, teachers should make a detailed investigation of the current large language model, so as to filter out the more suitable model for classroom teaching, summarize the prompt of artificial intelligence, and then guide students to use it reasonably and effectively in and out of the classroom. Furthermore, it is also necessary for the school to invest to set up the corresponding translation platform and make use of the advantages of the platform to achieve a multi-person online collaborative translation model (Kong & Cui, 2018).

5. Further Discussion

In response to the above survey, the author hopes that this training model can cultivate translators who are more adaptable to the technological progress and market demand in the digital age. To this end, the following suggestions are made:

1) As teachers of translation courses in colleges, the cultivation of post-editing ability should be one of the core parts of teaching. First, they need to constantly update their professional translation knowledge to adapt to the development of translation technology in the digital age. In the process of teaching, teachers should combine PACTE theory with student-centered teaching activities, such as simulated translation projects and workshops, so that students can learn and improve their post-editing ability in practice. They should also introduce modern translation technology tools, such as machine translation and computer-assisted translation (CAT) tools so that students can become familiar with the operation of these tools and guide them on how to effectively apply these tools in post-editing. In addition, teachers should establish a comprehensive evaluation system, including self-evaluation, peer review, and teacher evaluation, as well as objective evaluation using translation quality assessment tools, to provide students with timely and specific feedback to help them identify problems and make improvements. Teachers should also encourage students to engage in interdisciplinary learning to cultivate their cross-cultural communication skills and project management capabilities, thereby improving the quality and efficiency of post-editing. Moreover, Teachers should continue to explore more diversified training models for student translators' post-editing ability, such as using hybrid teaching, flipped classrooms, and other teaching models, and introduce cutting-edge technologies such as knowledge graphs, VR technology, and digital human technology to provide students with immersive and interactive learning experiences.

2) As the main body of the post-editing ability training model, students should actively participate in the class activities and take the initiative to explore and practice post-editing skills. First of all, they need to cultivate the habit of independent learning and continuously expand their professional knowledge by reading relevant books, research papers, and online resources. When practicing translation projects, students should take the machine translation post-editing seriously, carefully mark the annotation, check the errors in the translation, and strive to improve the fluency and accuracy of the translation. They should also actively use modern translation technology tools such as large language models and CAT tools to improve the efficiency of post-editing. At the same time, they should actively seek feedback from peers and teachers, accept criticism and suggestions with an open mind, and continuously improve their translation works. In addition, students should participate in interdisciplinary projects and activities to cultivate their cross-cultural communication skills and project management capabilities, laying a solid foundation for their future translation careers. Meanwhile, Students

can also be encouraged to participate in online post-editing competitions to improve their translation skills through competition-driven learning.

3) As providers of translation education, colleges assume the responsibility of cultivating students' post-editing ability. First, schools should update and optimize the translation course settings to ensure that the course content matches the needs of the industry, especially in the context of the digital age. Schools should invest in the introduction of modern translation technologies and tools, such as large language models and CAT tools so that students have the opportunity to learn and practice these tools in class. In addition, schools should strengthen cooperation with the translation industry and provide students with internships and practical opportunities so that students can exercise their post-editing ability in real translation projects. A comprehensive evaluation system shall be established, including self-evaluation, peer review, and teacher evaluation, as well as objective evaluation using translation quality assessment tools to ensure that students can receive timely and specific feedback. Teachers should be encouraged at school to engage in professional development to maintain the advancement of teaching content and methods. Finally, schools should provide opportunities for interdisciplinary learning and encourage students to participate in interdisciplinary projects and activities to cultivate their cross-cultural communication skills and project management capabilities and prepare for their future translation careers.

6. Conclusion

In the context of the digital age, the rapid development of large language models has had a huge impact on the language service industry. The "human-machine collaboration" translation model has been widely used in the process of translation. Post-editing has become an important link in ensuring translation quality. As the main force of the future in the translation industry, student translators should also adjust the new training model of translation with the progress of the times. It should be pointed out that there are still some other problems with this training model. For example, the feasibility and sustainability of this model may vary among different schools; and the training effect on student translators with different attitudes will also vary from person to person. Hence, more empirical research and quantitative analysis are needed to validate and improve this model. This requires us to continue exploring future teaching and research practices. We should always pay attention to the changes in market demand, follow the development trend of translation technology, ensure that teachers and student translators can keep up with the times, and jointly build a suitable training model that adapts to the progress of the digital age.

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