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A Research on the Impact of Artificial Intelligence Translation Tools on the Translation Ability of Third-Year English Majors

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ABSTRACT

From the perspective of teachers' teaching, this study delves deeply into the impact of artificial intelligence translation tools on translation ability of third-year English majors, taking the Chinese-English translation course as an example. Through teacher interviews, student interviews and student questionnaires, the study reveals that artificial intelligence translation tool is double-edged sword. On the positive side, the use of artificial intelligence translation tools in teaching enriches teaching resources and improves the accuracy and fluency of students' translations. However, students' excessive reliance on translation tools dampens their enthusiasm for independent thinking and translation practice, thus hindering the formation of translation thinking. Based on these research findings, this paper proposes corresponding countermeasures to help teachers better integrate artificial intelligence translation tools into teaching and cultivate professional translation talents who meet the needs of the times.

KEYWORDS

Artificial intelligence translation tools; Third-year English majors; Impact on.

1. INTRODUCTION

1.1 Background of the Research

With the rapid development of artificial intelligence technology, the application of artificial intelligence translation tools in the field of language has become increasingly widespread, exerting a profound influence on translation teaching and practice[1-4]. In the field of higher education, the cultivation of the translation ability of English majors is facing new opportunities and challenges[4][5]. Artificial intelligence translation tools can improve translation efficiency and quality, but at the same time, they may also lead to students' excessive dependence, weakening their ability of independent thinking and translation practice. Therefore, how to make rational use of artificial intelligence translation tools to optimize translation teaching and balance the relationship between technical assistance and ability cultivation has become an urgent issue to be explored in the field of translation education.

1.2 Objectives of the Study

This study takes the Chinese-English translation course for third-year English majors in a certain university as an example. From the perspective of teachers' teaching, it explores the influence of artificial intelligence translation tools on students' translation ability. The objectives of this study are:

(1) to reveal the dual role of artificial intelligence translation tools in translation teaching;

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(2) to analyze specific impacts on students' translation accuracy, fluency, and the formation of translation thinking, etc.;

(3) to promote the deep integration of artificial intelligence technology and translation teaching.

1.3 Significance of this Study

The significance of this study lies in the following aspects. On the one hand, this study can provide practical examples and references for translation educators, helping teachers to more scientifically utilize artificial intelligence-assisted tools to design translation teaching models. On the other hand, this study can promote the innovation of translation talent cultivation models, enabling students to not only make full use of the advantages of technology, but also consolidate their language foundation and cultivate translation thinking, so as to meet the needs of the times.

1.4 THESIS

Artificial intelligence translation tools bring both numerous opportunities and challenges that cannot be ignored to the students in the teaching of the Chinese-English translation course for third-year English majors. Through reasonable guidance, the optimized application of these tools in teaching can be achieved, and translation talents meeting the requirements of the times can be cultivated.

2. RESEARCH METHODOLOGY

2.1 Research Questions

In order to deeply explore the actual application of artificial intelligence translation tools in Chinese-English translation teaching, this paper is mainly to answer the following questions:

(1) How do teachers apply artificial intelligence translation tools to carry out teaching activities in Chinese-English translation classes?

(2) Based on teachers' teaching applications, what specific impacts do artificial intelligence translation tools have on the translation ability of third-year English majors?

(3) What feedback and suggestions do teachers and students have on the application of artificial intelligence translation tools in the teaching of Chinese-English translation courses?

2.2 Corpus Description

The translation text corpus selected in this study covers the translation texts of in-class exercises, after-class assignments, and periodic tests in the Chinese-English translation course for third-year English majors in universities. The subjects of the questionnaire survey are the students participating in the Chinese-English translation course, and the interviewees are the teachers teaching this course and some students, ensuring that the results can comprehensively reflect the views and experiences of teachers and students on the application of artificial intelligence translation tools in teaching.

2.3 Research Instrument

2.3.1 Teacher Interview

Design structured interview questions and conduct interviews with the teaching teachers. The interview content focuses on teachers' understanding of artificial intelligence translation tools, their usage experience in teaching, the problems encountered, as well as their expectations and suggestions for the application of the tools in teaching, so as to have an in-depth understanding of teachers' thoughts and feelings in teaching practice.

2.3.2 Student Interview

Design structured interview questions to conduct interviews with some students. The interview questions mainly focus on the usage scenarios of artificial intelligence translation tools, changes in learning behaviors, paths to improving translation abilities, and potential challenges, in order to uncover the hidden learning processes and psychological feedback.

2.3.3 Questionnaire Survey

Design a student questionnaire including multiple-choice questions and short-answer questions. The multiple-choice questions cover aspects such as the frequency, purposes, and evaluations of students' use of artificial intelligence translation tools to collect students' feedback information.

2.4 Research Procedure

This study adopts a multi-dimensional data collection method. By combining teacher interviews, student interviews and questionnaire surveys, it systematically examines the impact of the application of artificial intelligence translation tools in the classroom on students' translation ability.

First is the interview stage. After the classroom observation was completed, according to the observation results and research needs, the teaching teachers and some students participating in this course were invited for interviews. The teachers' and students' opinions and viewpoints were recorded in detail during the interview process. After the interview, the interview content was promptly transcribed and analyzed.

Second is the questionnaire survey stage. In the middle of the semester, the researchers distributed questionnaires to the students participating in the Chinese-English translation course. Before distributing the questionnaires, it was ensured that the students understood the purpose of the survey and the filling requirements. After the questionnaires were collected, the valid questionnaires were sorted out and statistically analyzed. Data analysis software was used to conduct a quantitative analysis of the data of the multiple-choice questions and a qualitative analysis of the data of the short-answer questions.

Finally, it is the comprehensive analysis stage. The data and information obtained from teacher interviews, student interviews and student questionnaire surveys were integrated. The application of artificial intelligence translation tools in Chinese-English translation teaching and their impact on students' translation ability were analyzed from different perspectives. The feedback from teachers and students was compared, and the patterns and problems were summarized, thus providing a strong basis for the discussion of the subsequent research results.

3 RESULTS AND DISCUSSION

3.1 Results

This section will be presented in two main ways, one is analysis of the impact of AI translation tools on translation proficiency and the other is feedback from teachers and students on the use of AI translation tools. Part one will focus on the two dimensions of positive impacts and potential problems, and part two will be presented from the results of the interviews and questionnaires respectively.

3.1.1 Analysis of the Impact of AI Translation Tools on Translation Proficiency

The study found that AI translation tools have some positive significance in enhancing the translation proficiency. Firstly, it improves the language accuracy. The results of the questionnaire survey show that more than 90% of the students feedback that AI translation tools have a positive impact on improving grammatical accuracy and perfecting the structure of translated sentences, especially in the ability to find and correct some grammatical errors. The grammatical accuracy of the translated

texts provided by AI translation tools is relatively high, and the correct usage examples can effectively assist students in improving the accuracy of language expression.

Secondly, AI translation tools also increase the efficiency of translation. It is found that by providing the first draft of the text translated by AI in the classroom, when students are dealing with some texts of longer length and more complex content, students do not need to spend a lot of time consulting dictionaries and grammar books to solve the basic linguistic problems, but they can directly make modifications and perfections on the basis of referring to the first version of the translation provided by AI. When translating highly specialized texts, which involve specialized terms and complex sentences, the AI tool can quickly provide English expressions of the relevant terms, which greatly saves translation time and improves translation efficiency.

Thirdly, the post-translation editing capacity is enhanced. From the qualitative analysis of the traces of revision of students' translations, it is clear that students' post-translation editing ability has improved after referring to AI translations. In terms of sentence adjustment, the sentence structures mastered by students tend to be diversified, such as trying to combine simple sentences into compound sentences or using special sentence styles such as inverted sentences and emphasized sentences to enhance the expressiveness of the translations. In terms of vocabulary substitution, students also pay more attention to choosing more precise and contextualized vocabulary. For example, when translating the sentence "He is very happy", students can use "extremely delighted" to replace the simple expression. By constantly referring to and revising the AI translations, students gradually mastered some post-translation editing skills and methods, which played a positive role in improving their own translation level.

At the same time, the study also identified some potential problems. The first is the lack of cultural adaption. In the translation of words with Chinese cultural loads, the proportion of AI translations with cultural misalignment is high. For example, when translating "马面裙", the translation given by the AI tool is detached from its meaning in the Chinese cultural context and simply translates literally, which makes it difficult for foreign readers to understand its unique cultural meaning, and students fail to accurately convey the cultural connotation due to its interference. This indicates that the AI translation tool has limitations in dealing with culturally loaded words and lacks in-depth understanding of the cultural context and the ability to deal with it appropriately[6][7], whereas the students, due to their over-reliance on the AI translations and their lack of independent thinking, have also neglected to a certain extent the excavation of the cultural connotations.

Secondly, through teacher interviews and observation of students' classroom performance, it was found that some students overly relied on AI translations, and there was a lack of independent thinking and independent sentence construction ability. In the classroom, when students were asked to practice translation without the help of AI tools, the translation speed of some students dropped dramatically, and the quality of their translations was also reduced. For example, when translating some long and difficult sentences with complex inter-sentence logical relationships, students' ability to think independently and construct sentences decreases because they are used to referring to the logical framework sorted out by AI. This over-dependence phenomenon seriously affects the cultivation of students' independent translation thinking, and makes it difficult for students to complete the translation task independently when they are completely detached from the AI tool.

Lastly, students' critical thinking is limited. The study found that many students have blind trust in AI translations, and even if the AI translations have problems such as logical errors and hard expressions, students often adopt them directly without thinking. When translating a text about the causal relationship of events, the AI translation had difficulty in appropriately presenting the underlying logical relationship of the text, but most of the students did not realize it and still translated according to the wrong logic. This reflects students' lack of critical thinking when referring to AI translations and their inability to make an objective and comprehensive assessment of AI translations, which is not conducive to the long-term development of students' translation ability.

3.1.2 Feedback from Teachers and Students on the Use of AI Translation Tools

(1) Results of questionnaire

In the statistical analysis of the students' questionnaires, 67.5% of the students believed that their vocabulary had increased and they had accumulated some new vocabulary after adopting the AI tool to assist translation. This is due to the fact that AI tools can help students better express the meaning they want to present in a sentence with appropriate vocabulary by providing more contextualized words. Meanwhile, the results showed that 89% of the students agreed that the use of AI translation tools can be helpful in translating sentence structure and grammatical accuracy. In terms of usage preference, students preferred to utilize AI tools for vocabulary query and grammatical correction. This reflects that students' use of AI tools at the current stage mainly focuses on solving problems at the basic language level, which is regarded as an auxiliary tool to make up for their lack of language knowledge[3]. As for the functions of AI tools in translation strategy, culture transfer and other higher-level aspects, students' attention and utilization rate are relatively low. For example, when dealing with the translation of culturally loaded words, although students are aware of the possible deficiencies of AI tools, they still take less initiative to explore other ways to accurately convey cultural connotations and rely more on the ready-made translations provided by AI. Students commonly use AI translation tools, recognizing the convenience but dissatisfied with the professionalism. This suggests that the technology is usable on a daily basis but weak in dealing with complex scenarios. Students' needs point to the direction of tool optimization and teaching reform, and teaching should guide the rational use of tools, cultivate critical thinking, and improve translation ability.

(2) Results of the interview

1) Teacher interview

In terms of the ways to incorporate AI translation tools in classroom instruction, the research find that in the teaching scenario, teacher mainly integrates AI tools into translation courses in two ways. One is classroom case analysis. By selecting AI translations (e.g., DeepSeek) and comparing them with official translations, students are guided to analyze the problems of mechanical translation of terms and poor translation of culturally loaded words. The second is the classroom activity design level. In the students' classroom presentations, they are required to compare AI translations with their own translations to strengthen critical thinking[8][9].

In terms of adjustment of teaching mode and evaluation system. The introduction of AI translation tools lead to changes in teaching interactions. In terms of classroom participation, compared with the direct text translation in the traditional classroom, students are more interested in the activity of finding AI translation errors and revising them, and the overall discussion is more active, which is more refreshing than the traditional translation analysis. Moreover, in terms of homework design, in order to avoid relying on AI after class, teachers changes the translation exercises to be completed in real time in the classroom, reducing the opportunity for AI intervention and ensuring the validity of the exercises.

In the future, at the level of evaluation standards, teachers also show their willingness to add "post-translation editing" questions in the final exam, requiring students to correct AI translation errors and focusing on process evaluation.

2) Students interview

Students use AI translation tools extensively for daily study. Including homework completion and independent expansion. In daily study, they mainly use it to assist in understanding vocabulary and long sentences; when finishing homework, some students directly use AI translation, but often improperly translate culturally loaded words. When studying independently, some people improve their translation ability by comparing multiple versions of AI translations, but they also face the problem of unstable quality.

In conclusion, the popularization of AI tools promotes the transformation of translation teaching from "pure manual training" to "human-computer collaboration"[2], but students' over-reliance may lead to the degradation of basic skills. Teaching needs to strike a balance between "technology application" and "thinking cultivation", and cultivate translators with critical thinking and cultural adaptability by strengthening post-translation editing training and integrating ethical education. In the future, it is necessary to further explore the reform of grading standards and incorporate the standardization of the use of AI tools into the teaching evaluation system.

3.2 Discussion

The discussion section will be organized along three dimensions, focusing on the connections to previous research frameworks, comparative analysis with related studies and implications for teaching.

3.2.1 Connections to Previous Research Frameworks

In terms of theoretical framework, this study echoes previous research. Firstly, in the mechanism of human-machine collaboration, the results of this study are consistent with the theory of "AI-driven translation is heavily dependent on algorithms and lacks cultural sensitivity in certain contexts, necessitating adjustments through human-machine coordination" proposed by Chen Jirong[10]. For example, the machine needs to manually supplement the cultural context in the processing of some terms, which confirms the necessity of human intervention in pre-translation and post-translation editing.

3.2.2 Comparative Analysis with Related Studies

By referring to a comparative study of human-machine translation quality[6], commonalities and differences were found between the two studies.

Commonalities include, but are not limited to: the AI in this study outperforms the students in terms of consistency in translation terminology, which is in line with Lee's finding that the machine translation fidelity is higher than that of the learner. However, in terms of processing culturally loaded words, the students show greater adaptability, echoing the idea that human translators are superior in terms of cultural acceptance. The difference is mainly reflected in the fact that Lee's study focuses on the objective comparison of translation quality, while this study focuses on the impact of AI on the learning process from the perspective of teaching, which is complementary to the present study.

3.2.3 Implications for Teaching

First, teachers should focus on the balance between technology and competence development. Two key pillars of human-centered AI (HCAI) approaches are "control" and "autonomy"[11]. More classroom activities combining "AI-assisted + independent translation" should be designed, such as independent translation and then comparing the machine results, focusing on the cultivation of students' independent ability, avoiding over-reliance on technology and seeking a balance between the two.

Secondly, to realize the transformation of teaching objectives and adopt the mainstream mode of "machine translation + post-translation editing", the curriculum should add post-translation editing training to cultivate students' ability of evaluating and correcting machine translations.

Besides, focus on ethical and academic norms. Teachers should reinforce students' awareness of copyright and academic integrity in the use of AI.

4 CONCLUSION

4.1 Key Findings

Firstly, the AI translation tool is effective in improving students' language accuracy and translation efficiency in Chinese-English translation. It can help students quickly correct lexical and grammatical errors, provide rich vocabulary choices, shorten translation time, and at the same time promote the development of students' post-translation editing ability to a certain extent. However, there are obvious deficiencies in cultural transmission, autonomous translation thinking and critical thinking cultivation. In terms of cultural transmission, AI tools are difficult to accurately deal with culturally loaded words, leading to deviations in the communication of cultural connotations in students' translations; in terms of independent translation thinking, students rely excessively on AI translations, weakening their ability to think independently and construct sentences on their own; and in terms of critical thinking, students' lack of sufficient ability to screen and evaluate AI translations restricts the further enhancement of their translation ability.

Secondly, the teaching mode of "AI assistance + teacher guidance" can effectively make up for the defects of AI tools and promote the comprehensive development of students' translation ability. Through the guidance of teachers, students can look at AI translations more rationally, learn to analyze them critically, and continuously improve their abilities in the process of independent translation and post-translation editing. In this mode, the guiding role of teachers is crucial, which can guide students to use AI tools correctly, avoid over-reliance, and cultivate students' comprehensive translation literacy.

4.2 Research Limitations and Perspectives

Due to limited conditions, the sample of this study is only two classes from a single institution, and the sample size is small, which cannot fully represent the situation of third-year English majors in all colleges and universities, and affects the generalizability of the results of the study. In addition, the study covers only one semester, lacks the tracking of students' long-term learning effects, and is unable to comprehensively understand the long-term impact of AI tools on the development of students' translation ability.

In the future research the sample can be expanded to cover students from several different types of institutions, in order to improve the universality of the findings. At the same time, the research cycle should be extended to track the developmental changes of students at different learning stages, so as to deeply explore the long-term impact of AI tools on students' translation thinking and professionalism.

In addition, further research can be conducted on how to optimize the application mode of AI tools in translation teaching, and explore the development of AI auxiliary tools and resources that are more suitable for translation teaching, so as to provide more effective support for English professional translation teaching.

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