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A Research on Ideological and Political Education Strategies in Translation Technology Courses in the Age of AI: Taking E-C and C-E Translation as an Example

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Abstract: *In the age of artificial intelligence (AI), translation technologies, represented by deep learning-based Neural Machine Translation (NMT) systems, have deeply transformed the teaching content as well as teaching process of translation-related courses, with a growing number of colleges and universities providing translation technology courses. In order to meet the requirements of all-course-based ideological and political education, these courses should solve the problems of teachers being lack of awareness and capability of delivering ideological and political education, unselected teaching materials as well as teaching methods unconducive to ideological and political education. This paper discusses the elements of ideological and political education in the translation technology course from the aspects of Chinese-English (C-E) localization, machine translation post-editing of English-Chinese (E-C) content, and E-C bilingual parallel corpus, and proposes corresponding teaching strategies, including endeavoring to build a faculty with good ideological and political education competence, fully Exploring ideological and political education elements and contents, and carefully designing teaching methods that are conducive to cultivating students' awareness and competence of ideological and political education, in hope of cultivating students' ideological and political awareness and ability.*

Keywords: *the age of AI; translation technology; ideological and political education; teaching strategies*

1. Introduction

The rapid development of artificial intelligence (AI) technologies represented by deep learning and neural networks has brought profound changes to all aspects of our society, and the translation industry is no exception. Various translation technologies driven by AI have made translation activities undergo great changes in terms of work field, content, form, means, media, standards, etc[1].This reflects the characteristics of informatization, standardized processes, collaboration, standardization, and multimodality [2], which in turn presents new requirements for translation teaching. AI-driven translation technologies, such as online bilingual dictionaries, terminology databases, corpora, machine translation systems, terminology management systems, have become the teaching content in translation technology courses delivered in colleges and universities. What's more, AI products such as intelligent teaching monitoring systems and intelligent school assignment marking systems are also more and more widely used in translation technology classes, which greatly changes the teaching environment and improves the teaching effect. Therefore, whether from the perspective of teaching content or teaching methods, AI technologies has greatly influenced the translation technology courses.

In 2020, the Chinese Ministry of Education called for the all-course-based ideological and political education, which focuses on political identity, national sentiment, cultural literacy, etc. This initiative aims to cultivate talents with high level of morality and improve the quality of talent training in China. All colleges and universities and all disciplines and majors across the country are required to increase the intellectual and humanistic elements in the curriculum from the perspectives of professions, industries, nations, globalization, cultures and histories, which are expected to help the curriculum become more knowledge-based, open, up-to date as well as humanistic. As far as the translation technology courses are concerned, it is an inevitable requirement to practice all-course-based ideological and political education by fully exploring the relative elements and cultivating students' ideological and political awareness and ability. This article tries to explore the ideological and political education elements in translation technology courses from the aspects of Chinese- English localization, post machine

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translation editing of both English-Chinese and Chinese-English content, and English-Chinese bilingual parallel corpus, and puts forward the specific ways to cultivate students' ideological and political awareness and ability in the teaching process of translation technology courses.

2. Analysis of the Current Situation of Ideological and Political Education in Translation Technology Courses

Translation technology refers to the information technology and all available resources involved in the translation industry. The PACTE translation competence model refers to online dictionaries, terminology databases, corpora, machine translation, translation memory, terminology management systems as translation tools. Translation technology teaching, which aims at improving students' technical literacy and competence in translation process, started with computer-assisted translation (CAT) teaching, after which its teaching content gradually included machine translation post editing (MTPE), corpus and translation, localization translation, translation project management and so on. From the perspective of ideological and political education, there are mainly the following prevailing problems in translation technology courses.

2.1. Teachers being lack of ideological and political education awareness and ability

In the age of AI, which is featured by new technologies such as AI, 5G, big data and so on, the technology anxiety of teachers prevails and reaches a high level[3]. As far as teachers of translation technology courses are concerned, they are affected to a greater extent than their counterparts of traditional translation or interpreting courses. After collecting questionnaire data from 224 teachers from 249 universities and colleges that provide MTI (Master of Translation and Interpreting) courses across China, Wang Huashu concluded that most of the teachers of translation technology courses are inexperienced in teaching, lack the academic background combining both arts and sciences, and have a low overall computer technology literacy[4]. In this context, teachers of translation technology courses usually need to spend more time and energy on overcoming technology anxiety and improving technology literacy, and have no time to explore the ideological and political education elements in the courses or study relevant teaching methods.

2.2. Teaching Materials without proper screening and selection

According to the results of Wang Huashu's survey, the vast majority of translation technology teachers use textbooks in their teaching, among which two textbooks, Computer Aided Translation and A Practical Coursebook on Translation Technology, are used the most; in addition, 32% of the teachers use internal materials or self-edited teaching materials[4]. However, neither the textbooks nor the related teaching materials have fully explored and embodied the ideological and political education elements.

In addition, the technical resources in the translation technology courses cannot meet the requirements of ideological and political education. For example, as far as corpus is concerned, few multilingual parallel corpora available across the globe have Chinese as the center language; and many scholars have pointed out that the performance of machine translation systems in English-Chinese translation is not good as that of Chinese-English translation. For example, according to the test results, Qin Ying concluded that the quality of English-Chinese translation of neural network machine translation system is not as good as that of Chinese-English translation [5]; Li Fengqi, by examining the overall performance of the five major online machine translation systems(OMTs) in both English-Chinese and Chinese-English translation, concluded that the OMTs are better at translating from Chinese to English on the whole than translating from Chinese to English[6].

2.3. Teaching methods are not conducive to ideological and political education

In the age of AI, the emerging technology-empowered forms of translation practices, such as localization, MTPE, and creative translation seem to be inconsistent with the traditional translation principle of fidelity, but they are still essentially translation practices [7], and therefore cross-cultural communication practices. Since the core of culture is value, the issue of value orientation in the process of translation practices is inevitable[8]. Most translation technology courses focus on technical practices, and value education has not been fully emphasized and explored. Since mastering translation technologies requires a lot of practices, teachers usually focus on giving instructions of technical operations, and seldom include the analysis or guidance of translation content as well as technical ethics.

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3. Analysis of ideological and political elements in translation technology courses in the age of AI

In terms of terminology, neither algorithm-based machine translation nor corpus-based CAT can deal with the subtleties of languages, not to mention the cultural metaphors behind the language. In order to enhance students' ideological and political awareness and competence in translation technology courses, it is necessary to fully explore the ideological and political elements in the courses.

3.1. Analysis of ideological and political elements in localization Translation Practice

Localization is the process of linguistically and culturally adapting a product or digital content so that it can be sold and used in the target region or country. Localization translation is a key component of localization and is a relatively complex process compared to traditional translation practices, combining and optimizing multiple activities[9].

Although many multinational enterprises have introduced the machine translation plus MTPE mode into the localization process in order to reduce translation costs and improve translation efficiency, the terminology provided by machines is usually limited by specific texts, which is prone to cultural stereotyping and even cultural misinterpretation[7].Therefore, only integrating human translation and machine translation can enhance the quality and cultural communication effects of localization translation products.

Localization translation is also of great significance for spreading Chinese culture and establishing a good national image. Chinese culture is rich in cultural resources, but due to linguistic and cultural discrepancies, the loss of content and information is inevitable in Chinese-English localization translation, so it is necessary to make up for this kind of loss as much as possible and present the meaning of the original text as much as possible. In addition, localization translation must also take the demand of the target market into consideration. Since the ultimate goal of localization translation is to provide good user experience for target language users to promote the dissemination or sale of the products, learners must abide by the user-centered principle and take the initiative to search for localization methods that are easy to be accepted by target users.

3.2. Analysis of ideological and political elements in MTPE

After decades of development, machine translation has been constantly upgraded in terms of technology and algorithms. Nowadays, corpus-based machine translation has gradually become the mainstream of the industry, of which the most typical is the neural machine translation (NMT) based on artificial neural networks. Based on deep learning technology, NMT is a kind of end-to-end computational process, whose essence is still to explore the translation rules in a mathematical and statistical way. It treats the language and meaning as data that can be counted by formalized computation[10]. However, translation activities involve not only the internal structure of language, but also various factors such as common sense, social-historical-cultural knowledge, emotional and psychological factors, etc. [11]. Therefore, although NMT is a great improvement over the previous machine translation systems, it is still unable to be truly semantic because it is involved in the highest level of human intelligence and technology has not yet been able to unlock the ultimate mystery of human brain[10].

As far as Chinese-English translation is concerned, corpus-based machine translation is unable to translate content with Chinese characteristics or newly emerged popular expressions in Chinese society. Deep learning-based NMT requires a large amount of corpus for training in order to achieve satisfactory translation products, and its performance is closely related to the size, quality, and breadth of the parallel corpus. In order to control costs, NMT generally uses only 30,000-80,000 high-frequency words in model training, and the uncovered words are out-of-vocabulary words. Compared with high-frequency words, out-of-vocabulary words are a big challenge to NMT, and its translation quality for the latter is usually unsatisfactory. The number of Chinese speakers is large, and the Chinese language is rich and varied. What's more, with the further development of information technology, old Chinese words are added with new meanings, and new expressions are constantly emerging. Al of these have brought great challenges to NMT in C-E and E-C translation and put forward higher requirements for native Chinese translators. Therefore, Chinese native-speaking learners of translation technology must improve their Chinese language proficiency and fully understand the current hotpots of China' social development, so that they can comfortably cope with the problems of omission or even mistranslation in machine translated texts caused by out-of-vocabulary words.

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For instance, I input a Chinese sentence with the meaning of "Grain in ear closely follows grain buds", which contains two solar terms in traditional Chinese culture: "Grain Buds" and "Grain in Ear", the most popular NMT system Deep L gives the translation as "After Xiao Manchu turned away, Mango arrived in a hurry." Obviously, Deep L fails to accurately translate the solar terms, and regards the expression as people's names. And I continue to input a Chinese sentence with the meaning of "working hard does not always pay back, but giving up trying must be comfortable", the translation given by Deep L is "efforts do not always have results, but the pendulum must be very comfortable". The problem here is that the NMT system cannot understand the hot word "bailan (give up trying)" in the current Chinese society, and mistranslated it as "pendulum".

As translators' dependence on translation technologies will increase as they become more familiar with the latter [12], learners of translation technology are more easily influenced by output of machine translation due to their relatively low level of English language and technical literacy. if they are always accommodating to the machine, their native language will be continuously eroded by the machine[13]. The phenomenon of Europeanization of Chinese language is a case in point. Europeanization refers to the change of Chinese language under the influence of western language and culture, which can be divided into positive Europeanization and negative Europeanization, the former is actively absorbing the vocabulary and sentence patterns in English to enrich Chinese language expressions, while the latter is copying the English forms, which leads to the loss of characteristics of the Chinese language. The phenomenon of Europeanization is very common in Chinese nowadays. For example, as pointed out by Zhang Ke, the phenomenon of Chinese using the prefixes that equal to "non-", "anti-", etc. and the suffix that equals to "-ism" to form new words, as well as the direct application of English sentence patterns to Chinese sentence patterns are all examples of Europeanization[14]. E-C translation is closely related to the Europeanization of the Chinese language, and Wang Li believes that translation is the source of Europeanization of Chinese, and translated texts are most likely to be Europeanized[15]. Wang Kefei also clearly points out that direct translation is the main source of the influence of translation works on the Chinese language [16]. In addition, the bilingual parallel corpora used for training by mainstream machine translation systems for E-C and C-E translation, such as Google and Microsoft, all have English as the central language, which further strengthens the trend of Europeanization of Written Chinese.

3.3. Analysis of ideological and political elements in E-C Bilingual Parallel Corpora

A corpus is a large-scale electronic text database that has been scientifically sampled and processed to store linguistic materials that has been used in the real life. Corpora can be divided into monolingual corpora, bilingual parallel corpora, and multilingual parallel corpora. Corpora are not only pre-training materials for machine translation, but also tools for translation technologies, translation teaching and translation pedagogical research. Many scholars have pointed out the important role of corpora in improving students' translation ability. Sun Dongyun takes the application of BBC Chinese corpus in E-C translation teaching as an example, pointing out that monolingual corpora can help students to verify their native language intuition, verify the terminology accuracy, accumulate collocations and accurately choose the specialized general words[17]. And Han Lu et al. take C-E bilingual parallel corpora in the field of Chinese medicine as an example, pointing out that bilingual parallel corpora help to improve students' vocabulary learning strategies, vocabulary collocation awareness, and attention to and understanding of the context[18].

In the teaching of E-C bilingual corpora in translation technology classes, teachers tend to focus on explaining the technical operations and application of bilingual parallel corpus retrieval and management, and seldom pay attention to the cross-cultural content in the corpora. To change this situation, for example, the aforementioned phenomenon of Europeanization of the Chinese language can be visualized in front of students with a large number of examples in the corpora.

4. Analysis of ideological and political education teaching strategies in translation technology courses in the age of AI

4.1. Endeavoring to build a faculty with good ideological and political education competence

One of the key reasons why it is difficult for the current translation technology courses to meet the requirements of ideological and political education is that the most of the teachers lack relevant awareness and competences. To address this problem, universities and colleges offering this course should emphasize on-the-job training for teachers. Firstly, they should provide theoretical learning

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opportunities for translation technology teachers on ideological and political education, and improve their relevant competences through demonstration lectures given by expert teachers and sessions given by experts and scholars. Secondly, contests of ideological and political education teaching should be carried out among translation technology teachers, so as to promote their activeness in practicing ideological and pollical education in their teaching. In addition, colleges and universities should cooperate closely with enterprises, and encourage teachers to participate in foreign exchange translation projects in enterprises on a regular basis, such as translation projects related to the infrastructure construction of countries along the Belt and Road, and translation projects for cooperation and exchange between China and Central Asian countries, etc., so as to help teachers gain a deeper understanding of the background and current situation of China's foreign exchanges, improve their cross-cultural awareness and communication ability, and enhance their ability to explore and practice ideological and political education.

4.2. Fully Exploring ideological and political education elements and contents

To practice ideological and political education in translation technology courses is not to add additional content to the original teaching materials, which is superficial and rigid. Instead, the ideological and political education content should originate from and be integrated into the existing teaching materials. Before the class, translation technology teachers should screen and filter the teaching content and add related ideological and political elements to it. For example, teachers should check whether the texts, pictures or video content for students to translate are not in line with socialist values, or damage or even smear the image of the Chinese nation. In addition, teachers should make full use of the rich ideological and political education resources on the Internet and skillfully integrate them into their teaching, so as to subconsciously influence their students. In project-based teaching, teachers need to carefully select the source texts of the projects, appropriately add content of social hot issues, as well as materials that incorporate Chinese traditional culture, and present the content in a way conducive to ideological and political education in their classes. For instance, when learning the division of labor and collaboration in translation projects using computer-aided translation (CAT) tools, teachers can adopt project teaching method to simulate the practice of translation projects in the real workplace. During the projects, teachers can use materials that reflect socialist values and the ideas of Chinese leaders as the source texts in the form of texts, pictures, etc., ask students to summarize their choices of translation strategies as well as understandings of the translation, and provide guidance and evaluations according to students' feedbacks. Finally, teachers can also integrate ideological and political elements into new forms of teaching materials, including online courses, dynamic textbooks and teaching materials, electronic courseware, course forums and so on.

4.3. Carefully designing teaching methods that are conducive to cultivating students' awareness and competence of ideological and political education

In addition to conventional teaching methods such as demonstration and explanation, teachers of translation technology courses can also adopt online and offline blended teaching mode, integrating ideological and political content into online micro-classes and MOOCs (massive open online courses) for students' self-learning online, using the functions provided by online teaching platforms like message, pop-ups and commentaries to help students explore and summarize the ideological and political education content involved, and evaluating students' awareness and competence of ideological and political education through group presentations, simulation projects and other class activities. In addition, teachers can also choose some unconventional teaching methods. For example, translation workshops can be adopted to help students explore the ideological and political elements in specific teaching contents, and teachers can guide and evaluate the discussion. The Flipped Classroom is also a good choice. Teachers can ask students to discuss the ideological and political education materials in groups before class and present their discussion results in class, solving their puzzles and answering related questions. The discussion topics can involve knowledge and translation strategies of ideological and political education contents, such as the comparison of western and Chinese languages and cultures, strategies for disseminating Chinese culture, etc., so as to cultivate students' cross-cultural communication awareness and ability. Teachers should pay attention to students' learning features and weaknesses, cultivate their learning independency and adjust the teaching content as well as strategies accordingly.

5. Conclusion

In the age of AI, translation technologies such as NMT systems based on deep leaning have greatly

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changed the teaching of translation, with colleges and universities across China delivering translation technology course as a core course for translation majors. Although the translation technology course is distinctively different from traditional translation and interpreting courses in terms of the teaching content, methods, media, etc., it still focuses on translation activities and inevitably involves the issue of vale orientation. However, the existing translation technology classes fail to meet the requirements of ideological and political education. For this reason, this article analyzes the ideological and political education elements in translation technology courses and proposes corresponded teaching strategies, hoping to provide reference for translation technology teachers.

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