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Teacher Training Program for Translation Technology against the Background of Industry-Education Integration

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Abstract

As neural machine translation technology has entered a stage of rapid development and large-scale application, people's understanding of translation technology has also undergone significant changes, and translation technology has become a major social phenomenon in the new era. This article analyzes the current situation and the main problems faced by the translation technology curriculum and faculty in universities within China. Taking the teacher training program in the shape of university-enterprise cooperation as an example, this article discusses the contents, methods, values, expected outcomes and suggestions on optimization of the program, aiming at providing references for the cultivation of translation talents and the training of translation teachers.

Keywords

teacher training program, translation technology, industry-education integration, university-enterprise cooperation

1. Introduction

The rapid development of information and communication technology has changed the way of human communication. As an important medium of multilingual and cross-cultural communication, translation is deeply marked by technology both in theoretical construction and practical application. Translation technologies in the digital era are becoming richer in types and wider in application, with cloud translation, cloud sharing, translation memory, term recognition, crowdsourcing translation, and human-assisted machine translation fast becoming the norm. On November 3, 2020, "New Liberal Arts" construction working group of the Ministry of Education of China issued the *Declaration on the Construction of New Liberal Arts*, clearly proposing that the development of liberal arts should attach importance to the integration of arts and sciences and to information technology empowerment. The

Teaching Guidelines for Translation Majors in General Institutes of Higher Education released in April 2020 listed "Translation Technology" as a compulsory course for translation majors for the first time, highlighting the importance of teaching translation technology in colleges and universities (Zhong, 2021, p. 23). Nowadays, translation education in China has entered a new era of "technology-led and industry-oriented". The deep integration of translation and technology has led to the foregrounding of technological elements in the translation competence system.

In the era of Artificial Intelligence, the rapid developments in translation technology have exerted a significant impact on translator education and translation industry, which put translation technology teaching on the agenda of tertiary education. In recent years, universities and colleges have started to include translation technology in their curriculum and gained experience in the teaching of this subject. However, teachers are increasingly faced with challenges on how to teach translation technology more effectively and how to integrate technology into other translation courses. Driven by both translation and educational technology, it is urgent for translation teachers to master the latest translation technology, improve their application skills in translation project management, and carry out translation teaching that meets the requirements of the times in order to cultivate high-level, specialized and practice-oriented translation talents required by society and the industry. China National Committee for Translation and Interpreting Education puts forward specific requirements for the quality and development of translation teachers, highlighting in particular the importance of translation technology, which has given rise to the need for the technical competence of of translation teachers in translation teaching.

2. Literature Review

According to the International Organization for Standardization (ISO 17100:2015) Definition of "Translation Services", "translation technology" is a set of tools used by human translators, revisers, and reviewers, as well as the tools that help them carry out their work. Specifically, it refers mainly to the technology required for machine translation and computer-assisted translation, which directly serves the production of translations. The teaching of translation technology initially focuses on the teaching of computer-assisted translation, and then related technical courses gradually appear, such as machine translation and post-translation editing, corpus and translation, localized translation, translation project management, audio-visual translation, Python and translation, and English technical writing.

Artificial Intelligence drives rapid development of translation technology and promotes revolutions in the language service industry. The strong development of translation technology has brought brand-new research topics to the academic world, triggered important changes in areas such as the subject, mode, environment, and education of translation, which has become a promising emerging areas of development. Since 2000, the iterative upgrading of the Internet, cloud computing, big data, AI and other technologies has pushed human society into an era of great technological change. At present, a

number of scholars have paid attention to the research dynamics of translation technology, and used the methods of bibliometrics or content analysis to sort out and explain the relevant results at home and abroad.

Xiao and Qian (2021) elaborated the teaching research on translation technology in a broad sense, including the research on teaching practice, assessment and countermeasures of the current teaching situation, and the investigation of translation technology based on the language service industry. By analyzing the typical features of and the differences between the domestic and overseas research with respect to the identified four main areas, namely pedagogical practices research, training evaluation and proposed strategies, process/product research, and LSP-based translation technology surveys, they provided directions for future research in pedagogy-oriented translation technology in China. Wang and Liu (2022) stated that the research of translation technology teaching is mainly divided into translation technology research study in language service industry and teaching practice exploration research. By investigating the history of translation technology teaching in China from the past 30 years, Tao (2023) found out that translation technology teaching research in the Chinese mainland presents a shallow-to-deep trend, with perspectives from simplification to diversification. To be specific, the research subjects are various and comprehensive, ranging from the study of teaching syllabus, textbooks, teaching models, curriculum designing to the explorations of teaching philosophy, teaching effectiveness and technological ethics. The above studies are based on data analysis of related academic literature, which mainly present the current status of research on the teaching of translation technology, providing significant recommendations for future research.

3. Existing Problems of the Teaching of Translation Technology

The main problems facing the current translation technology curriculum and faculty are as follows: first of all, teachers of translation technology mainly come from English-related majors rather than translation majors. There is a group of them who do not pay enough attention to translation technology, and have little knowledge of translation tools and the current development of the industry. Shulman (1986, p. 9) proposed Pedagogical Content Knowledge (PCK), which emphasizes the integration of content knowledge and pedagogical knowledge of the subject matter by teachers for the purpose of teaching specific students in the school context. Koehler and Mishra (2005, p. 133) added technological knowledge to Shulman's PCK and proposed TPACK (Technological Pedagogical Content Knowledge) which integrates the knowledge of technology as an integral part.

Second, the teaching of translation technology in some universities still follows the traditional mode, which is far from meeting the latest requirements of modern language service industry. In addition, translation technology teaching requires related supporting facilities including specialized laboratories and IT infrastructure (both hardware and software), and the lack of which also poses as one of the important factors that hinder the development of translation technology teaching.

Third, there is not enough training courses or programs available for teachers of translation technology and the relevant long-term education mechanisms are yet to be built. In recent years, some language service enterprises, organizations or universities have carried out teacher training related to translation technology, but still highlighting problems such as short training time and lacking of depth and system of training contents, which is in urgent need of further improvement.

In view of the inadequacy of universities in terms of faculty, curriculum, teaching and learning, infrastructural facilities, as well as application and practice of translation technology, it is particularly important for universities to cooperate with enterprises and jointly carry out teacher training programs for translation technology education against the background of industry-education integration. In this way, enterprises could make use of their resource-based advantages to empower the improvement of translation technology teaching in universities, jointly creating a systematic and comprehensive training curriculum, and promoting the normalization and long-term mechanism of translation technology training. This article takes the teacher training program for translation technology jointly built by South China University of Technology (SCUT) and leading language-service enterprises as an example, aiming at providing references for the cultivation of translation talents and the training of translation teachers.

4. Case Analysis

4.1 Program Background

The School of Foreign Languages (SFL) of SCUT, established in 1952, has successively brought BA, MA, and MTI (Master of Translation and Interpreting) programs into a full play to cultivate tens of thousands of graduates who work in fields like international trade, education, science and technology, language service and the like. The SFL is now generally recognized as one of the pioneers dedicated to interdisciplinary education of English professionals with either BA or MA degrees, and its contributions to the reform of College English Teaching are also universally acknowledged in China. Up to this moment, the SFL has profitably obtained a lot of research achievements in Linguistics & Applied Linguistics, Foreign Literature, Translation Studies, and Comparative Literature & Cross-cultural Communication.

Approved by the Academic Degrees Committee of the State Council in 2010, SCUT has been granted the Master's Degree in Translation with two specialties, English Translation and Japanese Translation, with its MTI Education Center among other things prominently stands out in the relevant fields around the country. Based on the geographical advantages of Guangdong, Hong Kong and Macao Greater Bay Area and the disciplinary advantages of the "Double First Class" university, MTI Education Center is oriented towards national strategies and regional economic and social development, aiming at the cultivation of inter-disciplinary, application-oriented and professional translation talents with international vision, knowledge of international rules and industry norms, professional qualities and ethics. The translation faculty of MTI Education Center are composed of professors and instructors,

including experienced professional translators from the industry, who are able to offer students comprehensive and specialized professional training and guidance. Students also benefit from lectures and training sessions given by a team of visiting professors who are also practitioners from international and regional organizations, government agencies, and professional industries.

The MTI curriculum includes courses such as Translation Skills and Practice, Translation Technology, Contextual Studies for Translators, Professional Translation for Science, Engineering and Technology, etc. Training and coaching are tailored to be as effective and goal-oriented as possible, a pedagogical approach which is well received by the students. The center has built a computer-aided translation training room, a simultaneous interpretation room and a business training room, equipped with various kinds of mainstream CAT software at home and abroad, which provide a strong guarantee for the teaching and personnel training of MTI courses. MTI graduates and alumni of SCUT work as translators and multilingual professionals in China and around the world, contributing to better cross-cultural communication.

Targeting the needs of society and industrial development, MTI Education Center actively connects with high-tech enterprises and industrial associations in the Greater Bay Area, aiming at the cultivation of students' professional and practical abilities, while actively building the platform for industry-university-research cooperation. The MTI Education Center offers a variety of featured courses and special programs including computer-aided translation, translation project management, localized translation, technical communication, conference interpreting, advanced interpreting, etc. It has jointly established 8 training bases, both national level and university level, with leading language-service enterprises. Moreover, the Center strives to promote the university-enterprise cooperation in MTI education by inviting specialists and experts from relevant enterprises to serve as off-campus tutors through various programs such as the "Industry Experts in the Classroom". The Center also participated in the training of translation teachers organized by Translators Association of China and cooperated with China International Publishing Group (CIPG) to provide a short-term training for interpreters and translators. After years of exploration and practice, the quality of MTI talent training has been widely recognized and praised by the society, with a large number of high-end translation talents being delivered to universities, enterprises, government departments, and so on.

4.2 Program Description

The teacher training program for translation technology is based on the information-based teaching platform jointly built by MTI Education Center of SCUT and leading translation companies focusing on the development and application of cloud corpus data products and technologies. The program adopts a combination of online and offline methods.

Online training makes good use of the advanced teaching platform provided by the enterprise and formulates reasonable learning plans, which allows the participating teachers to conduct systematic learning, online discussion and other learning activities in a collaborative and effective manner.

Offline training is conducted by industry experts and specialists from the cooperative enterprises with

rich practical experience in relevant fields. In accordance with the actual needs of universities and translation teachers and with the assistance of the latest and most popular teaching technologies and tools, industry experts and specialists effectively assisted the partner institutions in improving the curriculum system, teaching methods and professional practices, while motivating teachers to actively participate in training, research and other academic activities related to translation technology.

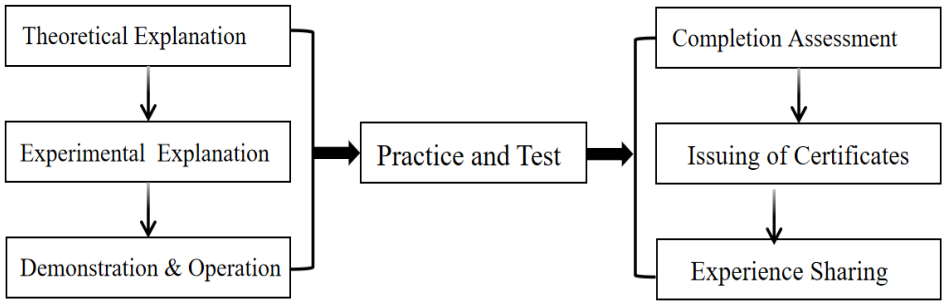

Figure 1. Implementation Process of Teacher Training Program for Translation Technology

4.3 Program Implementation Approach

Deep involvement of enterprise resources to empower teacher training. By cooperating with leading domestic translation companies to carry out teacher training for translation technology, this program creates a multi-faceted joint training mode of "industry + profession", utilizes the resources and technology of enterprises to assist the cultivation of teachers in universities, and provides a strong support for the effective organization of training and the enhancement of the professional level of training.

The building of collaborative training platforms. By introducing the intelligent platforms, such as featured corpus management system, corpus retrieval and exchange platform, corpus mall trading platform, massive corpus data management platform, all of which are self-developed by the cooperative enterprises, this program helps to provide comprehensive support for the teaching of translation technology in terms of software and hardware, practical platforms and experimental environment.

Cross-border integration between the educational and industrial circle. University-industry cooperation has become a general trend, in which context, collaborations between higher institutes and enterprises to carry out teacher training is an inevitable choice. Through university-industry cooperation, the scientific research advantages of universities and the resource advantages of enterprises will be transformed into the advantages of talent training and cultivation, together realizing the cross-border integration between education and industry.

4.4 Program Highlights

Project-based teacher training mode. This mode enhances the continuity of learning process and involvement of participating teachers as opposed to the former individual case studies. This task-driven

training approach allows participants to solve problems through independent inquiry and group work, making it easy to form a learning community among teachers, which in turn greatly improves the actual effectiveness of training.

Evidence-based evaluation system. Through the behavioral recording of the learning process of participants such as behavioral observations, evaluation scales, homework assessments, and quiz tests, this program is able to obtain stage-specific learning data, which in turn generates formative and performance evaluation results.

Electronic archive of participants. Efficient class management helps to enhance training effectiveness. With the support of the cloud platform, this program realizes unified and traceable management by establishing electronic archive of participating teachers, which facilitates process and summative evaluation, while enabling teachers to review the training contents.

4.5 Program Objectives

The overall objective of the program is to train teachers with interdisciplinary knowledge, which requires teachers to possess both theoretical and practical experience as well as scientific and technical thinking in translation, and to be proficient in using a variety of translation technology tools during the teaching process.

Translation teachers will be proficient in modern translation technologies including the basic principles, core functional modules, and related techniques of mainstream computer-assisted translation tools, mainstream Internet information retrieval technology and corpus retrieval technology, and be able to manage common types of translation and localization projects.

To create a new mode of teacher training combining online and offline training activities. Translation technology course is a course combining software and hardware, both in theory and practice. On the basis of traditional offline theoretical training, this program utilizes online resources for practical training to realize the complementary advantages of online and offline teaching and build a balanced and sustainable teacher training program.

Based on modern teaching principles and philosophies, the program makes full use of the software and hardware resources of university-enterprise cooperation with the aim at bringing together excellent teachers to practice modern translation technology teaching and innovative thinking, promoting the construction of curriculum system and sharing of teaching resources among various institutions, and effectively enhancing the teaching and management ability of teachers in modern translation technology.

4.6 Expected Outcomes of the Program

The wave of technology promotes systematic changes in translation practice and teaching, and puts forward more and higher requirements on the competence of translation teachers. Against the background of integration of industry and education, this teacher training program on teaching and application of translation technology starts from the characteristics and teaching principles of the translation profession, combines the latest development of the current language service industry, and

adopts a combination of online and offline methods to carry out teacher training, with the following expected results.

To guide translation teachers to pay attention to the impact of technological changes on translation practice and teaching, to establish correct technological cognition and beliefs, to form problem-oriented technological thinking, to master translation technology tools, to seek technological solutions for translation practice, and to use technology to improve translation practice and teaching efficiency.

To establish a long-term mechanism for teacher training for translation technology through close cooperation between universities and enterprises. On the one hand, enterprises could go deeper into universities and participate in their teaching process; on the other hand, universities could organize teachers in a regular basis to go deeper into enterprises for on-the-job training of advanced translation technology. The positive interaction between universities and enterprises helps to promote the reform and innovation of translation education.

5. Conclusion

In the era of Artificial Intelligence, new technologies such as neural machine translation, automatic speech recognition, video remote interpreting, cloud-based translation and content automation have been widely used in the language service industry, which calls for more translators and interpreters with strong technological competence. In order to meet the demands of translation markets, it is necessary for universities to cultivate students' technological competence and to develop their information literacy by strengthening translation technology teaching. Therefore, issues about translation technology teaching competence, teaching methodology, and teaching resources are to be investigated theoretically and practically. This article takes the teacher training program for translation technology jointly built by South China University of Technology and leading language-service enterprises as an example, with the hope that it will serve as a reference for the future teacher training carried out by university-enterprise cooperation, as well as for the future transformation of the resource advantage into the talent advantage in accordance with the needs of the university and the enterprise.

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