Construction of Mti Technology Curriculum in the Era of Big Data

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Abstract: In the era of big data, the rapid development of translation technology has had a great influence on translation industry and translation education, and translation technology teaching has become an important part of translation education system. By analyzing the elements of modern translator's technical competence, this paper points out that there are many problems in the computer-aided translation curriculum in current education, which can not meet the demand of modern language service for technical talents. And thus, a technical curriculum system oriented to industry demand is put forward for the development of MTI education.

1. Introduction

Since the 21st century, the development of science and technology in the digital and Internet era has produced unprecedented changes in the way in which human thought is generated, expressed, and retold, the way information is produced, transmitted, and processed, as well as the way people store and use information resources. The huge data resources had started the quantitative process in various fields. Whether in academia, business or government, this process would begin in all fields. Big data is leveraging the nerves of the world, affecting business models in all walks of life, and companies and institutions of different sizes are struggling to catch up with the pace of "big data" development.

The rapid development of modern information technology and globalization has spawned an emerging industry, the language service industry. Its services cover language teaching and training, localization and translation services, language-related business consulting, language technology tool development, and its services. The category has surpassed the traditional translation industry and has become an important link in the global industrial chain. China's language service industry began to take shape in the early 1980s with the reform and opening up, and in the 1990s it began to prosper with the vigorous development of information technology. In the 21st century, driven by the big data, globalization and service out-sourcing industries, the language service market has developed speedily with great prosperity. [1]

2. Development of Language Service Industry

The explosive growth of information has led to a rapid increase in the demand for language services. According to authoritative statistics, 99% of the corporate content is currently untranslated, such as customer online consulting and product technical support, UGC (User-Generated Content), product knowledge base, and internal real-time multilingual communication information, [2] and the company's translation needs will continue to grow. In the next decade, the number of languages to be translated will increase from the current 7 source languages and 60 target languages to 200 source languages and 200 target languages [3]. Obviously, the purely human-driven translation cannot meet the surge in data, forcing companies to change their service models.

Language service technology is rapidly developing towards the trend of informationization, specialization, networking, and cloudization, which requires more and more technical capabilities of language service talents. Chen Bingfa [4] believes that mastering computer-assisted translation tools has become an important professional skill of the new generation of translation talents, of which the MTI (Master of Translation and Interpreting) education should have a clear understanding.

Under such circumstances, the new demands and new tasks faced by language services are also

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increasing. Translation, as an important part of the language service industry, has undergone tremendous changes in its connotation and extension, and is moving towards the broader field of language service. New requirements and new technologies drive traditional translation concepts and practices to change and to innovate.

3. Elements of Modern Translator's Technical Competence

The shortage of language service talents has become the biggest obstacle for Chinese companies to enter the world market. In order to support the country's "Belt and Road" strategy, it is necessary to conduct research and analysis on the demand for international language service talents as soon as possible, and strengthen the talent training in the language service industry oriented by market demand. [5] Translators in the information age must not only have traditional translation capabilities, but also have proficient translation technological competence. The following section reviews and analyzes the constituent elements of modern translator's translation technology capabilities from five aspects in order to enhance understanding and promote current translation technology teaching.

3.1 Basic Computer Skills

The basic application ability of computer technology has become a necessary quality for modern translation professionals. In modern translation projects, what is required first is to master the format conversion of complex texts (such as PDF to .doc) and the extraction of translatable resources (such as extracting XML Text), term extraction, corpus processing, etc.; in the translation process, it is necessary to understand the meaning of tags in CAT tools, master common web page code, and even learn to use Perl, Python and other language processing applications, etc.; after translation, documents usually need to be compiled, typeset, and tested. It can be seen that the level of computer-related knowledge and skills directly affects the progress of translation tasks and the quality of translation.

3.2 Information Retrieval Capabilities

In the information age, human knowledge is growing in geometric progression, new translation fields and professional terms are emerging, and even a smart brain can hardly store the large amount of professional knowledge needed for translation. Therefore, translators must excel in information retrieval, identification, integration, and reconstruct, all of which is called SQ (Search Quotient), a basic ability required in the information age. How to find urgently needed information from the vast Internet in a limited time, how to verify the accuracy of translations through a professional corpus, etc. all rely on information retrieval capabilities. Contemporary translators should be proficient in using the mainstream search engines and corpora, with the knowledge of selection of inductive words and use of search grammar, etc., in order to improve the search speed and quality.

3.3 Cat Tool Application Ability

Traditional translation work usually has a small amount of tasks and a relatively simple form, and the timeliness requirements are not very strong, so the role of the Computer Aided Translation (CAT) tool is not emphasized. In the information age, translation work is not only huge in amount and different in form, but also has many urgent tasks., Timeliness and content-oriented business practice require the use of modern CAT tools. At present, major language service companies' recruitment requirements for translators emphasize the use of cat or localization tools. According to *the Survey Report on the Living Conditions of Translators in China*, 61% of translators are using auxiliary translation tools, and 80% of translators are using online auxiliary reference tools. It can be seen that the translation professionalization process requires high levels of CAT tool application ability.

3.4 Terminology

The translator's terminology ability refers to the knowledge and skills required by translators to engage in terminology work and use terminology theory and terminology tools to solve

terminological problems in translation work. It has the characteristics of comprehensiveness and practicality, and runs through the entire translation process. It is an indispensable professional ability for translators. Terminology management is the core content of translator's terminology ability and has become an essential link in language services. Translators can use the term management system (TMS) to manage and maintain translation databases, improve the quality and speed of translation, promote the sharing of terminology information and knowledge, and inherit the assets of translation projects. Therefore, contemporary translators need to have a systematic collection, description, and processing ability to manage terminology, record, storage, presentation and query [6].

3.5 Post-Editing Capabilities

Machine translation (MT) has a strong application potential in the language service industry in the information age. It has developed with the translation memory software, and almost all mainstream CAT tools can be loaded with MT engines. Intelligent machine translation systems can help translators get free from the heavy text conversion process, the work mode shifted to post-editing. In 2010, the TAUS survey of global language service providers showed that 49.3% of suppliers often provided post-editing services, 24.1% of suppliers have specially trained post-editing staff, others distribute post-editing work to freelance translators [7], and post-editing will become one of the required professional competence for translators. Contemporary translators need to master the basic rules, strategies, methods, processes, tools, etc. of post-editing.

The above are the main components of the translator's translation technology capabilities in the information age. In essence, each of these capabilities is closely related to the translator's information literacy. Information literacy refers to "the ability to recognize when information is needed, to retrieve, to evaluate and to use information effectively, and the obtained information is processed, sorted out, refined, and innovated, so as to obtain the comprehensive ability of new knowledge" [8]. Specifically, with high information literacy, translators can recognize how to quickly and accurately obtain the information required for translation, construct information acquisition strategies, use various information technology tools to retrieve, acquire, understand, judge and use information, while also complying with the ethical requirements for information use. The essence of any of the above-mentioned technical capabilities lies in trying to use intervene information technology in the translation process, to facilitate the retrieval of related information, to automatically generate translations, and to implement management of related resources to assist translators in successfully converting source language information into target language, reduce the workload of the translator and improve translation productivity.

4. Problems with Mti Technology Curriculum System

In the course setting of *MTI Training Program Guidance*, "Computer Aided Translation" is the only translation technology course, and it is an elective course. Many schools which were in the initial stage of MTI development merely copied the course name in the instructional program, regardless of whether the content of the CAT course is reasonable, which resulted in many problems in the follow-up.

(1) Conceptual misunderstandings: the difference between computer translation and CAT are not fully identified, and even the translation teaching system is confused with CAT tools;

(2) Too much emphasis on Office: most colleges and universities have set up Office relevant courses, which obviously cannot;

(3) Too much emphasis on corpus linguistics and analysis tools: to some extent it deviates from the translation practice advocated by MTI education;

(4) Limited vision: too much attention is paid to domestic CAT, with little involvement with mainstream and representative CAT in the world;

(5) Emphasis on CAT explanation only: it ignores the practical application of industry technology in each link of the translation project;

(6) Unsystematic: Most courses independent from on another and the rest of the courses in the

training programme.

The problem reflected is that the curriculum is unitary. Translation technology courses are highly informatized and highly technical. The knowledge is updated quickly, and only one course is opened. The knowledge received by students is fragmented, which can easily cause the phenomenon of “information islands”, and it is difficult to establish the technical knowledge system that should be mastered. In addition, the class time is short, the interval is long, and the class There is little practice, and there is little knowledge and skills left at the time of graduation. This is seriously inconsistent with the characteristics and technical requirements of modern language services described above.

An overview of the current curriculum setting of domestic MTI colleges reveals that basically all focus is put on training students’ language and translation skills, with little attention on translation technological and management courses. Moreover, the development of translation skills mainly stays at the stage of “doing translation,” not caring about what kind of work is done before and after translation. In fact, These “out-of-translation” jobs raise higher requirements for the skills of practitioners, which is the result of the refinement of the socialization of language services. These detailed “new” professional positions are exactly what the industry urgently needs-- “Language service talents”. The current MTI translation courses cannot meet the needs of such language service talents, which is a problem we have to reflect on.

5. Construction of Mti Technology Course System

Translation technology is a comprehensive and interdisciplinary discipline that integrates multiple disciplines such as translation science, computer science, linguistics, corpus, software engineering, machine translation, and education technology. The knowledge structure is complex and has distinctive characteristics of the times. From the perspective of construction theory, with the continuous deepening of translation practice, the knowledge of various disciplines penetrates each other and complements each other. It is very necessary to build a scientific MTI technical curriculum system. The cultivation of technical capabilities involves many aspects, and only one course is far away from satisfaction, and it must be supported by corresponding supporting courses. The establishment of the MTI technical course system not only emphasizes the interrelationship between the courses, but also highlights the skill-focusing nature, and at the same time, it can systematize the comprehensive knowledge, establishing a highly competitive curriculum system with technological skills training. To this end, drawing on domestic and foreign experiences and combining the teaching practice of MTI and CAT in some leading universities in recent years, the author concluded a four-module technology course group as follows:

5.1 Basic Course Module

“Computer Basics” mainly solves the problem of relatively weak computer foundation for liberal arts students. “Modern Information Retrieval” focuses on cultivating students’ information literacy and the ability to make full use of modern search technology to quickly obtain translation-related professional information. These two courses belong to MTI basic technology course.

5.2 Core Course Module

“Modern Language Technology and Practice” belongs to the core curriculum, which emphasizes the application of information technology and language technology in translation practice. “Terminology Management” emphasizes the concept of terminology management throughout the translation project, and focuses on training students’ professional terminology application ability. “Machine Translation Principles and Applications” highlights the development and industrial application of MT technology in the context of big data and cloud computing. These three courses should be compulsory courses as a “Trinity”.

5.3 Localization Course Module

“Technical Document Writing” mainly solves the problem of writing source documents and runs

through the concept of “writing for translation”. It aims to cultivate technical writing talents in the language service industry. Economic globalization has promoted the internationalization of enterprises. It further promotes the localization of products and services, and localization technology is closely related to information technology. “Technical Document Writing”, “Internationalization and Localization Technology”, “Multimedia Translation”, and “Localization Desktop Publishing” are based on this background, which form an important part of the MTI technology curriculum system [9].

5.4 Project Management Course Module

The translation project management practice is rich in content, including the language service industry and management, the characteristics of translation projects, the five major stages and nine major processes of translation project managements, the translation project process design and management, the translation project quality system design and management, the language asset management, and the translation project. An overview of the management system and a case study of multilingual project management can run through all aspects of technology implementation in industry translation practice [6]. Many foreign universities also offer project management courses along with technical courses, and the former can be a useful complement to the latter.

Each of the above courses aims to solve a key problem in the practice of language services, fully reflecting the characteristics of the professionalization of modern language service and the concept of diversified talent training. On the basis of balancing language and translation skills courses, MTI colleges and universities can choose 1-3 core courses from the course group and other courses can be used as elective courses. They can be completed within 2-3 years and gradually form a relatively complete MTI technology course system.

6. Summary

With the development of the times, the language service industry is striding towards a new stage of informatization, industrialization, and professional development. The demand for language service talents is undergoing structural changes, and it is becoming more diversified and specialized. MTI colleges and universities should keep pace with the development of the times, actively adjust teaching ideas and improve teaching content to cultivate high-level, professional, application-oriented and diversified language service talents that truly meet the needs of the development of the times.

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