Cultivation of Translation-Oriented Terminological Competence in the Era of Artificial Intelligence

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Abstract. Terminological competence is an important quality necessary for translators, consisting of the abilities to recognize, extract, retrieve, translate and manage terms in different fields by using terminology software and tools. Construction of terminology courses is a direct and effective way to cultivate translation major students' terminological competence. This paper mainly explores the teaching objective, content and mode of terminology courses, in order to contribute to popularization of translation-oriented terminology courses in China. Firstly, terminology courses should aim at cultivating practical translation talents with terminological competence. Secondly, the courses should cover term extraction, term translation, term management, term tools and so on, according to the teaching objectives and the composing factors of terminological competence. Thirdly, translation workshop is an effective teaching mode of terminology courses due to its remarkable advantages in technology teachers, term tool, term corpus and other respects.

Keywords: Artificial intelligence · terminological Competence · terminology courses

1 Introduction

Terminology is a group of words representing the core concepts of a certain discipline or a professional field. Since terminology is the major carrier of knowledge and information, accurate and standardized translation of terms plays a vital role in international communication of professional fields.

With the advent of the era of artificial intelligence, information technology drives the language service industry to develop in the direction of technology and artificial intelligence. Significant changes have took place in the object, means, process and environment of translation. The texts to be translated are more relevant to the fields of science and technology, such as big data, cloud computing, block chain, virtual reality, intelligent science and technology. Science and technology texts are mainly featured by containing a large number of professional terms. New disciplines, new industries and new technologies also constantly generate new terms. The translator's ability to deal with terms

directly affects the quality of his translation. Due to rapid development of information technology in the era, human-computer interactive translation has become a mainstream mode for translating scientific and technological texts, providing incomparable advantages over human translation in extraction, search, translation and management of terms in various fields. Terminological competence closely related to information technology naturally becomes an important ability that translators must possess. As long as the translator has excellent terminological ability, he or she can quickly enter a certain scientific and technological field and successfully complete the translation task. Terminological competence directly affects translation practice and determines the quality of translation work. The cultivation of terminological ability is an indispensable part of training program of translation professionals. However, terminology education is usually ignored in the majority of Chinese universities so that many translation major students are insufficient in terminological competence. For this reason, this paper will focus on exploring cultivation of translation major students' terminological competence, after analyzing the components of terminological competence.

2 Definition of Terminological Competence and Analysis of Its Components

In light of the close link between terminology and translation, terminological competence is regarded as translation-oriented. It is a sub-competence of translation competence. Meanwhile, it is also a complex comprehensive competence composed of a variety of sub-elements. The accurate definition of terminological competence and the reasonable analysis of its constituent elements are important to realization of cultivation objectives of translation talents with terminological competence.

In order to cultivate translators' terminological ability, it is necessary to make clear its concept and constitution. According to Faber (2003), terminological competence belongs to translation ability, which includes the abilities to reserve professional knowledge, acquire professional knowledge automatically, create terms and solve problems of knowledge acquisition in the process of translation [1]. Montero Martinez and Faber Benitez (2009) thought that terminological competence referred to the translator's ability to obtain the knowledge represented by terms [2]. Liang Ailin (2010: 35–36) believed terminological competence as the ability to solve problems in complicated technical terms. He thought that the premise to solve the problems was to have the systematic thinking ability to define terms through concepts and the basic skills of term management, such as technical ability. He divided terminological competence into five kinds of competence: term knowledge ability, technical ability, term application ability, professional ability and communication ability [3]. Wang Shaoshuang (2011) defined terminological competence as the system of knowledge and skills used by translators to solve term problems effectively in the process of translation, and constructed a model of terminological competence relation network consisting of seven sub-competencies:

application competence, theoretical competence, management competence, literature competence, language competence, technical competence and thematic competence [4]. Wei Xiangqing (2014: 26) argued that translators' terminological competence mainly referred to a comprehensive ability in term translation formed by translators through professional knowledge learning and practical training, mainly covering term recognition ability, term processing ability, term tool ability and term management ability [5]. Thelen (2015) believed that terminological ability mainly included term recognition ability, term matching ability and term recording ability [6].

According to the scholars above, terminological competence is closely related to translators' translation ability or activity, which is an ability to cope with the term problems in the process of translation practice. This kind of competence does not require translators to memorize terms in a certain field and their usage, but requires them to mobilize their initiative fully, such as their effort in acquiring translation knowledge and solving the term problems encountered in fulfilling translation tasks.

Although terminology competence includes different sub-competences, it is in essence a kind of instrumental competence in the era of artificial intelligence. With an increasing demand for translation of scientific and technological text, pure human translation cannot be competent for accurate and quick extraction, translation and management of scientific and technological terms. The application of various information tools and translation tools has become an inevitable choice for translation. Translator's terminological competence is deeply involved with computer-aided translation tools, so it is manifested as a kind of instrumental competence from the perspective of practice. In other words, translators should possess the ability to use expertly relevant tools to settle problems in term translation, such as online encyclopedias, online professional dictionaries, relevant translation software, search engines, online corpus, professional bilingual corpus and other tools useful to complete the translation task. Instrumental competence almost runs through the whole translation process–before, during and after translation. Table 1 shows constituent elements of terminological competence, which is helpful to determine the specific objectives in developing terminological competence.

Table 1. The Elements Composing Terminological competence (made by the author)

Terminological competence	Translation process	Composing elements	Specific tasks
Instrumental competence (in essence)	Before translation	Ability to retrieve terms	To identify and retrieve terms, analyze their meaning and function, and create glossary by using the tools such as SDL MultiTerm Extract, LingoSail TermBox

<div align="right">(continued)</div>

Table 1. (*continued*)

Terminological competence	Translation process	Composing elements	Specific tasks
	During translation	Ability to translation terms	To search and inquire terms by online dictionaries, encyclopedia, search engine, etc.; to translate terms by applying various software of term translation, such as YiCAT, Déjà Vu, Trados, Memo and Wordfast; to verify translation of terms by using internet, online collocation dictionaries, encyclopedia, etc.
	After translation	Ability to manage terms	To construct, renew, maintain and share terminological database by using desktop term management instruments, such as I-term, editgrid, MultiTerm and Logiterm

3   An Effective Route for Cultivating Terminological Competence: Construction of Terminology Courses

At present, only a minority of Chinese universities incorporates terminology courses into cultivation program of translation talents. More attention should be paid to cultivation of translation-oriented terminological competence. This can be fulfilled by constructing a system of terminology courses within the framework of the teaching plan of translation major. The core of construction lies in establishment of the teaching objectives, limiting the teaching content and selecting the teaching mode, by referring to the constituent elements of terminological competence and the teaching experience from Western and Chinese universities in this field, as well as the features of the age of artificial intelligence.

3.1   Teaching Objectives

The terminology courses for translation major aim at training practical translation talents with terminological ability for the society. Specific teaching objectives can be formulated from perspectives of theory and practice respectively. From the viewpoint of theory, the teaching objectives are to increase students' knowledge of terminology, cultivate

their awareness of terminology, and guide them to maintain the standardization and consistency of terminology in translation tasks. From the perspective of practice, the teaching objectives are to cultivate students' ability to recognize, extract, translate and manage terms by using software and tools. Due to the high dependence on technologies and tools in the era of artificial intelligence, the core objectives of terminology courses are to cultivate students' ability of applying terminology technologies and tools. By providing students with opportunities of operating computer, the courses should teach student to use specialized terminology tools or specialized terminology functions in translation software, or other online terminology resources. Once the students develop instrumental competence, they can obtain accurate and standardized term translation. In a word, through course teaching, students are guided to master theoretical knowledge about term concepts, term standards, term translation and term management, and enhance their awareness of term standardization. More importantly, driven by translation projects, the practical teaching should focus on cultivating students' technical ability and tool ability, by teaching students to use terminology tools and online terminology resources, and adapt to the mainstream translation mode of human-computer interaction.

3.2 Teaching Content

The construction of terminology courses for translation major can be solved in two ways: the first is setting up independent terminology-related courses; the second is integrating terminology courses into translation courses in the professional field.

The first way is to carry out formal, standardized and systematic terminology education, through independent courses of term translation, term technology and tools, term database construction and term management, etc. These special courses introduce basic concept and connotation of terminology, terminology schools, development history of terminology, definition of terminological competence and other terminology knowledge. The courses also combine the discipline of terminology with translation (especially computer-aided translation), dictionary compilation, and literature management. In a word, this kind of terminology courses cover theoretical and practical knowledge simultaneously. The second way is to carry out "implicit" terminology teaching based on professional content. The teachers naturally penetrate and integrate terminology knowledge into the courses teaching of professional field translation, such as translation of information engineering, computer science, medicine, physics and chemistry. This way enables students to practice translation of different text types in different specialized fields. Students can use technical tools to solve various term problems in translation practice. Compared with the first way, the second way focuses more on training translation skills in teaching content, instead of more systematically imparting terminology knowledge.

In light of core position of instrumental competence in terminological competence in the era of artificial intelligence, the teaching content of terminology courses for translation major should focus on the application of computer aided terminology tools, including the tools for term extraction, searching and management. Besides, teachers should also introduces students other online terminology resources, such as electronic dictionary, corpus, electronic databases and translation memory software, language testing

software, voice recognition systems, etc. In a word, the teaching content should focus on practice of term translation while covering theoretical and practice knowledge.

3.3 Teaching Mode

Translation workshop based on school-enterprise cooperation is the main teaching mode of terminology courses. This mode provides students a simulated translation workshop environment where college teachers, professional translators from enterprises and students cooperate like a team. This mode can better solve the problems of teachers, translation techniques and tools, as well as the glossary of professional fields.

Terminology courses involve terminology technology, which requires teachers to combine terminology teaching with computer-aided software and tools. Enterprise employees usually use translation software and tools more frequently and proficiently than college teachers do. At present, very few translation teachers have accepted systematic and professional terminology training. Most of them may be unfamiliar with theoretical knowledge, principles and methods of terminology, let alone practical application of the existing terminology technology, tools and internet resources in the process of translation practice. One of prominent advantages of translation workshops is participation of professionals into classroom teaching. They can make up for this technical shortcoming in terminology teaching since they are more proficient in using terminology tools.

In the meantime, translation workshop can provide students with abundant translation material (including glossaries for students' reference in translation practice) from real translation projects fulfilled by enterprises. Students have chances to translate a large number of texts in different professional fields. In this way, students can improve their translation skills. In translating these texts, students also have chances to create independently a glossary or term database of various professional fields, and participate in terminology management, such as the maintenance and expansion of the glossary and database. In summary, translation workshop creates more practice opportunities for students, which is beneficial to improve their terminological competence.

4   Conclusions

People construct the knowledge structure and system of the discipline through the terms and concepts of the professional field. Technical texts cannot be built without terminology knowledge. Clear and accurate terminology is also a guarantee of professional communication. It is necessary for translators to master the methods of term extraction, retrieval and management, use computer-aided software for term translation, and construct term databases to ensure accuracy, consistency and specification of term translation. Only by constantly strengthening translators' ability of identifying, extracting, translating and managing terms, especially the ability of terminology tools, they can ensure the quality of translation of scientific and technological texts and the effective exchange of information in the fields of science and technology. Construction of terminology courses is a necessary guarantee for translation major students to improve their terminological ability and satisfy the increasing demand of applied translation talents in

society. Planning and design of teaching objectives, teaching content and teaching modes are important factors to determine whether terminology course construction can succeed or not. The successful course construction is the most direct and effective means to cultivate translation major students' terminological competence, especially the instrumental ability.

Bibliography

1. Faber Benítez P. Terminological competence and enhanced knowledge acquisition [J]. *Research in Language.* 2003(1): 95-117.
2. Montero Martínez, S & Faber Benítez P. Terminological competence in translation [J]. *Terminology.* 2009(1): 88-104.
3. Liang Ailin. Approaching China's Terminology Education from the Perspective of the Nature of the Term [J]. *China Terminology.*2010 (4): 32-36.
4. Wang Shaoshuang. Translation-oriented Terminological Competence: Concepts, Constituents and Cultivations [J]. *Foreign Language World.* 2011(5): 68-75.
5. Wei Xiangqing. Cultivation of Terminological Competence of MTI Talents and Reflections on Textbook Compilation [J]. *Translation Forum.* 2014 (1): 24-28.
6. Thelen M. The Interaction between Terminology and Translation [J]. *Trans-kom.* 2015, 8(2): 347-381.
7. Dagan, I. & Church, K. *Termight: identifying and translating technical terminology.* In Proceedings of Applied Language Processing. Stuttgart, Germany. 1994. 34–40.
8. Melby, A. K. TBX-Basic: Translation-oriented terminology made simple [J]. *Revista Tradumatica.* 2008 (11): 1-14.
9. Miao Ju, Gao Qian. Construction of Terminology Teaching Model of Translation Major [J]. *Foreign Language and Their Teaching.* 2008 (10): 57-60.
10. Wang Shaoshuang. Cultivation of Translation Students' Terminological Competence: Experience, Status Quo and Suggestions [J]. *Foreign Language World.* 2013(5): 26-35.
11. Leng Bingbing, Wang Huashu, Liang Ailin. Construction of MTI Terminology Courses [J]. *Chinese Translators Journal.* 2013 (1): 55-59.
12. Sun Huan. MTI-oriented Terminology Teaching [J]. *Contemporary Foreign Language Studies.* 2017 (2): 41-45.
13. Wang Zheng (2014), Developing the terminological competence of translation learners [J]. *Foreign Studies.* 2014 (3): 82-87, 107.
14. Wang Huashu, Zhang Jing. Study on term management in Interpreting and its technical application in the Information Age [J]. *Foreign Studies.* 2017 (4): 72-77.
15. WangLei. Theoretical Issues in the Cultivation of Terminological Competence [J]. China Terminology. 2014 (6): 8-13.

16. Zhou Jie. Cultivation of Translation Postgraduates' Terminological Competence [J]. *Journal of The Chinese Society of Education.* 2017 (S1): 26-29.
17. Xue Dongyan. Studies on Terminological Competence in the Undergraduate Teaching of Translation Major [D]. Heilongjiang University. 2018.
18. Xue Dongyan. Construction of Terminology Course for Translation Major [J]. *Journal of Lanzhou Institute of Education.* 2019 (10): 145-146.
19. Zhang Pengjie, Zhou Ying. Cultivation of Terminological Competence in Translation Undergraduate Teaching [J]. *Journal of Inner Mongolia Radio & TV University.* 2021 (6): 41-44, 48.