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ORIGINAL RESEARCH

Evaluation of translation technology textbooks compilation from the perspective of translator's technological competence*

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Abstract

The development of technology has prompted the translation from an "empirical" practice to gradually show its "technical" feature. Translation technology has been one of the necessary competences for professional translators and has been incorporated into current translation education. As the basis of college teaching and curriculum construction, the quality of textbooks directly affects students' learning efficiency and ability acquisition. This paper selects fourteen translation technology textbooks and analyzes their compilation under the guidance of the Translator's Technological Competence (TTC). It finds three problems: illogical compelling principle, unbalanced contents of practice and theory, and lack of learning resources. Then, this paper proposes solutions to those problems respectively. This study provides references for teachers to choose the appropriate teaching materials and helps to improve future textbook compilation to achieve better teaching results.

Keywords translation technology; translator's technological competence; translation education; textbook compilation; textbook evaluation

1. Introduction

The continuous development of information technology, network technology, and cognitive science has brought radical changes in social production, information dissemination, communication, and lifestyles. As an old profession, the way translators work and the paradigm of translation studies have also undergone a dramatic change. The intervention of technology not only enhances the productivity of the translation industry but also has a gradual and deep impact on the translation practice, translation education, and translation research, which is manifested in changes in ten aspects, including translation objects, translation roles, translation abilities, translation strategies, translation methods, translation processes, translation standards, translation environments, translation educations and translation research (Kong & Cui, 2018).

As a medium of communication, translation technology education bears the burden of cultivating skills for future translators and plays an irreplaceable role in translation studies. At the beginning of its establishment in 2007, MTI had already incorporated translation technology into its curriculum system. According to the latest survey, more than half (125) of the 249 MTI universities in China have offered relevant courses (Wang et al., 2018). Scholars have published a series of papers on the following topics: the cultivation of translation technology competence (Wang, 2017), the setting of a translation technology curriculum (Ren, 2013), and the career orientation of translation technology (Miao & Wang, 2010). As shown in James Holmes's (1988) framework of translation studies, translation education includes not only educational theories but also educational resources. The textbook is an important educational resource that guides teachers and directly affects the teaching results. This paper will collect mainstream translation technology textbooks in an attempt to show the situation and identify problems in conjunction with TTC and propose corresponding countermeasures.

2. Translation Technology, Translation Competence, and TCC

2.1. Translation technology

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There are two different definitions of translation technology. For example, Bowker (2002), who holds a broad definition, believes that tools that can help translators in translation work can be called translation technology (p, 5-9). The narrow conceptualization of translation technology refers to two key technologies, machine translation (MT) and computer-assisted translation (CAT). This conceptual division is also reflected in the names of translation technology textbooks. It is found that some of them are named CAT, but in fact, they also cover the contents that should be covered by translation technology. This paper will adopt the concept of translation technology in a broad sense to evaluate the compilation of the textbooks.

2.2. Cognitive theory of multimedia learning

The cultivation of students' translation competence is the ultimate goal of translation education. Scholars such as Bell (1991), Beeby (2000), Neubert (2000), and Kiraly (2003) proposed different interpretations of translation competence. Through years of empirical studies, a research group in Spain, The Process in the Acquisition of Translation Competence and Evaluation (PACTE), put forward a model of translation competence. After continuous revisions between 2000 and 2005, a model of translation competence was finally formed with strategic subcompetence as the core and bilingual subcompetence, extra-linguistic subcompetence, instrumental subcompetence, knowledge about translation subcompetence, and psycho-physiological component (PACTE, 2005).

Unlike the model proposed by previous scholars, the PACTE group first mentioned instrumental subcompetence which refers to a translator's ability to use various resources and media, including translation tools, information technology, and resources.

2.3. TCC

With the rapid development of artificial intelligence and big data, the ability to use tools has been transformed from a subcompetence to a major competence that associates with others to facilitate translation practice. Based on previous studies, Wang and Qin (2018) proposed a TTC system. This system contains four main competencies: technical knowledge, instrumental ability, technical thinking, and information literacy. Among them, technical knowledge refers to the essential understanding of translation technology; technical thinking refers to the awareness of using technology in solving problems; information literacy provides support for this system and is mainly reflected in the search ability of translators; instrumental ability is the result of technical knowledge and technical thinking.

3. The Current Status of Translation Technology Textbook Compilation

In order to present the current status of translation technology textbook compilation, the author searched the website of the National Library of China, the third largest library in the world, with the keywords of translation technology and CAT, and collected a total of fourteen relevant textbooks. Their basic information such as textbook title, editor, publisher, year of publication, and length was plotted in Table 1.

Table 1. Basic Information of Selected Translation Technology Textbooks

No.	Textbook Title	Author (Editor)	Publisher	Year of Publication	Length
1	*Electronic Tools for Translators*	Frank Austermuehl	St.Jerome Publishing	2001	192 pages
2	*Computer-Aided Translation Technology: A Practical Introduction*	Lynne Bowker	University of Ottawa Press	2002	220 pages
3	*Translation and Technology*	Chiew Kin Quah	Palgrave Macmillan	2006	248 pages
4	*CAT-A New Horizon for Translating Research and Practice*	Xu Bin	Shandong Education Press	2010	109 pages
5	*Computer-assisted Translation*	Qian Doxiu, ed.	Foreign Language Teaching and Research Press	2011	306 pages
6	*Computer-Assisted Translation: Theory and Practice*	Zhang Xiaojun, Wang Huashu, eds.	Shaanxi Normal University Press	2013	319 pages
7	*Introduction to Computer-Assisted Translation*	Lv Qi, Yang Yuan Gang, eds.	Wuhan University Press	2015	385 pages
8	*A Practical Guide to Computer -aided Translation*	Wang Huashu, eds.	National Defense Industry Press	2016	506 pages
9	*Computer Aided Translation Course*	Pan, Xuequan, ed.	Anhui University Press	2016	192 pages
10	*A Practical Guide to Translation Technology*	Wang Huashu, ed.	Foreign Languages Press	2016	334 pages
11	*Computer-Aided Translation*	Tang, Xuri, Zhang, Jibiao, eds.	Wuhan University Press	2017	147 pages
12	*A Practical Course in Translation Technologies*	Wang Huashu, ed.	Shanghai Foreign Language Audio -Visual Publishing House	2017	424+398 pages
13	*Introduction to Computer-Assisted Translation*	Zhou Wei, ed.	Harbin Engineering University Press	2018	132 pages
14	*A Project-Based Approach to Translation Technology*	Rosemary Mitchell-Schuitevoerder	Routledge	2020	200 pages

In terms of time, translation technology textbooks have been released every year since 2001, especially in 2016 and 2017, when there was a publishing climax. In terms of the identity of the editors, most were jointly edited by teachers with teaching experience and practitioners in the industry. In terms of length, there are great differences among those textbooks. The shortest one with only 109 pages, while the longest one covers 822 pages.

In order to further evaluate the compilation of the textbooks, this paper reviewed them from the perspective of TTC. Since the instrumental ability is the most important part of this course, the eight specific skills (knowledge of corpus, CAT, MT, localization, terminology, translation management, technical writing and other tools) involved are counted separately, and finally the coverage of each textbook is calculated, and the specific information is shown in Table 2.

Table 2 The Coverage of TTC in Selected Translation Technology Textbooks

No	Textbook Title	Technical Knowledge	Instrumental Ability								Information Literacy	Technical Thinking	Coverage
			Corpus	CAT	MT	Localization	Terminology	Translation Management	Technical Writing	Other Tools			
1	*Electronic Tools for Translators*	√	√	√	√	√	√				√		63%
2	*Computer-Aided Translation Technology: A Practical Introduction*	√	√	√			√						36%
3	*Translation and Technology*	√		√	√	√							36%
4	*CAT-A New Horizon for Translating Research and Practice*	√		√						Technology Teaching			27%
5	*Computer-assisted translation*	√	√	√		√	√			Desktop Publishing, Quality Control			55%
6	*Computer-Assisted Translation: Theory and Practice*	√		√		√	√			Document Processing			45%
7	*Introduction to Computer-Assisted Translation*	√		√			√	√					36%
8	*A Practical Guide to Computer-Aided Translation*	√		√		√		√		Subtitle Translation, Quality Control	√		55%
9	*Computer Aided Translation Course*	√	√	√			√	√		Quality Control	√		64%
10	*A Practical Guide to Translation Technology*	√	√	√		√	√			Quality Control			55%
11	*Computer-Aided Translation*	√		√		√	√			Quality Control, Document Formatting			45%
12	*A Practical Course in Translation Technologies*	√	√	√	√	√	√	√	√	Document Processing	√		91%
13	*Introduction to Computer-Assisted Translation*	√	√	√	√	√				Desktop Publishing			55%
14	*A Project-Based Approach to Translation Technology*	√		√	√	√				Quality Control		√	54%
	Coverage	100%	50%	100%	35%	72%	64%	29%	7%		29%	7%	

4. Problems and Countermeasures in the Compilation of Translation Technology Textbooks

4.1. Illogical Compiling Principle

Through Table 2, we can find that all textbooks cover the technical knowledge. They all introduce the definition, essence, and history of translation technology, the composition of translators' competence, the application of basic electronic tools, and the language service industry. Technical knowledge is the foundation, and its detailed interpretation helps students set up an objective understanding of the historical development, the current situation, and future prospects of the industry, thus laying a solid foundation for the acquisition of translation technology. CAT is another key for all textbooks, and mainstream CAT softwares are introduced at length. Except for the two contents mentioned above, the coverage of other competencies is quite different. Most of the textbooks introduce corpus, localization, terminology, and translation management. However, only one textbook, *A Practical Course in Translation Technologies*, devotes a special chapter to technical writing, and the coverage of information literacy is not promising either. For example, post-editing has become a routine for professional translators. As Ivanova (2016) points out, the knowledge of MT not only helps to understand the types of errors but also directly improves the efficiency of post-editing. The absence of MT-related knowledge in textbooks does not satisfy the purpose of professional orientation. From the above analysis, it can be found that among these textbooks, except for *A Practical Course in Translation Technologies*, which can basically meet the requirements for cultivating students' TTC, the rest do not present a clear compiling principle. To address this problem, this paper put forward the following three suggestions.

First of all, a clear compiling principle should be

adopted. This course is required to extensively cover techniques that students may employ in future translation practice. The author suggests that textbooks should be compiled under the guidance of TTC, thus enabling students to have a macro understanding of translation technology.

Secondly, TTC system should be improved. Quality is the key to a service or a product. As a language service, the quality of translation also plays a crucial role. Translation quality has two meanings, linguistic quality, and format quality. In view of the importance of translation quality control, it should be included in the system of TTC and covered by textbooks. Students need to understand the basics of translation quality assessment and analyze the factors influencing translation projects in the context of national and international translation quality standards.

Finally, the importance of technical thinking should be valued. Technical thinking, as a kind of tacit knowledge, is difficult to explain with words, but integrated into the overall process of translation technology application. However, with the intervention of technology, a series of contradictions also occurred. How to balance the relationship between humans and technology is an urgent question that requires us to answer. In order to guide translators' attitudes toward technology, and to break the barrier between technology development and technology use so as to realize "humanized" translation technology, it is necessary to strengthen students' awareness of technical thinking in conjunction with the content of philosophy of technology and ethics of technology.

4.2. Unbalanced Theoretical Framework and Practical Applications

As a medium of human communication, translation is a highly practical human activity. With the intervention of linguistic theories, translation is gradually forming its theoretical framework and has thus become a discipline. Current translation technology education focused on its practical applications. As shown in Table 2, specific CAT tools are introduced in detail in textbooks. According to the order of the frequency of the tools introduced, they are SDL Trados, Déjà Vu, Wordfast, memoQ, Transn, Yaxin, and Snowman, with specific information shown in Table 3. According to Chen (2014), there are currently 25 free and 53 paid computer-assisted translation tools available in the market (p. 221, 247). The prevalence of these tools used in translation companies then directly affects the effectiveness of classroom teaching. SDL Trados undoubtedly has an absolute advantage in both translation practice and translation teaching, so it is necessary to introduce its functions in a separate chapter. However, it is questionable whether it is necessary to explain other tools with slightly lower occupancy in detail.

Table 3. Frequency of Appearance of CAT Tools in Selected Translation Technology Textbooks

CAT tools	Frequency of Appearance in Textbooks
SDL Trados	8
Déjà Vu	3
Wordfast	3
memoQ	3
Transn	2
Yashin	2
Snowman	1

The teaching of translation technology in higher education is different from professional training, and while emphasizing the practicality of technology, the theoretical construction should not be neglected as well. However, through analysis, these textbooks all lack the overall layout of the theoretical structure, which makes the teaching contents present a fragmented posture. In response to this situation, this paper suggests that the "theoretical framework of CAT research" firstly proposed by Chen (2014) can be adopted to integrate knowledge. This theoretical framework consists of three major parts, namely, theoretical CAT research, practical CAT research, and applied CAT research, each of which is subdivided into several subsections (p. 311). The author suggests that textbooks should take into account theoretical framework while focusing on teaching technical practices, so as to make translation technology a more scientific and systematic discipline.

4.3. Absence of Learning Resources

Due to the nature of paper publications, it takes a long time to plan, write, publish, and print a textbook. In contrast, technology develops and iterates rapidly. Taking SDL Trados as an example, the versions demonstrated in the textbook cover 2007, 2011, 2014, and 2017. Although the same tool is designed and developed in adherence to a consistent principle, new features will be added in each update, while previous bugs will be optimized. This results in the dilemma that the version of the tools introduced will be outdated at the moment students get the latest published textbook. In addition, textbooks suffer from a lack of learning resources. According to the survey, only 10.44% of the teachers were satisfied with the teaching efficiency. One of the reasons was that most teachers were not proficient in technologies and had no practical experience. Although the Chinese Translation Association and language service enterprises had organized training programs, only 51.41% of the teachers were satisfied with the training results (Wang et al., 2018). The author did not find any textbooks providing supporting teaching materials. It is difficult for teachers to teach only through their own understanding, which increases the difficulty of lesson preparation. In addition, for students, textbooks do not provide sufficient learning resources either. According to statistics, all textbooks have reflection questions for students to consolidate what they have learned. However, most questions only focus on the summary of the knowledge, such as

"Characteristics and types of terms and terminology databases" and "What is computer-assisted translation?". etc. Students are not able to enhance their abilities through these questions.

In view of the above-mentioned problems, this paper suggests that future textbooks should break through the tradition, adopt diversified publishing methods, and make full use of modern technologies to realize immediate updating of knowledge. Textbooks publisher can establish online interactive communities to release the latest technical information in a timely manner, and upload videos to guide translation practice more intuitively. The editors of textbooks should also provide teaching materials and courseware for teachers, and some institutions that have achieved good results in teaching translation technology courses can also take the initiative to share their experiences. In addition, new media such as Tieba, blogs, microblogs, QQ groups, and WeChat groups can be fully utilized to strengthen the interaction among technical experts, teachers, textbook editors, and students, so as to answer the problems encountered in teaching and practice and share information to promote the teaching effect of translation technology courses in all aspects.

5. Conclusion

Textbooks are not only the carriers of teaching contents and teaching methods but also bear the important responsibility of cultivating innovative talents in the new era and play a pivotal role in many aspects such as stability of teaching order, quality assurance, and innovation of teaching contents and guidance of teaching direction. As a new module of translation studies and a necessary competence in translation practice, the importance of translation technology textbooks is self-evident. Fortunately, after decades of development, it is found that translation technology textbooks have been greatly improved both qualitatively and quantitatively. However, we should also notice that there are some shortcomings, such as an illogical compiling principle, an unbalanced theoretical framework and practical applications, and the absence of learning resources. Future textbooks should not only take TTC as the compiling principle but also balance the contents of theory and practice, and further improve the supporting learning resources. Those suggestions can improve the quality of translation technology textbooks so as to better serve the translation technology education and the cultivation of translation talents.

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