German Translation Teaching Reform Based on Computer Aided Translation Software

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Abstract. With the rapid development of the times, the role of computer in all aspects of society is becoming more and more obvious, and the translation industry has also been greatly affected. Now the traditional translation no longer meets the requirements of the society, the emergence of computer-supported translation software. Relying on the powerful computing and translation storage functions of computers, translation can be managed more effectively. As a new research field, computer-aided foreign language research has been widely concerned by scholars from all walks of life. Among them, due to its application value, computer-aided translation research has been paid more attention by scholars. Computer assisted translation is computer-assisted translation. The basic operation principle is to search the existing translation language reference room, compare the original text with the translation language group, and select the language materials most similar to the original text. In this paper, through the analysis and understanding of computer-aided translation and its software requirements, as well as the investigation of the current application status and future development forecast, and the understanding of the application defects of computer-aided translation, we can know the operability of computer-aided translation software in practical translation work.

Keywords: Computer Aided Translation; Translation Software; German Translation; Computer Teaching

1. Introduction

With the continuous advancement of globalization, a large number of foreign non literary works are pouring into China, and the requirements for the accuracy and effectiveness of such literature translation are also constantly improving. The traditional manual translation has been unable to meet the growing needs of people [1]. In the face of this situation, the computer-aided translation software (CAT) is also born, which not only greatly improves the accuracy and efficiency of translation, but also has a very positive impact on Translation Teaching [2]. However, due to the limitations of cat and other external factors, its application in the teaching of German non literary translation has not been paid attention to. Language translation is a complex process. Due to the differences of culture and language structure in different countries, translators are faced with many difficulties. For people with different translation styles. For example, translators focus on chefs, primary and secondary school
students or entrepreneurs, and there are obvious differences in translation content. The issue of language structure needs to take into account the cultural factors of the country so that everyone can understand and understand the information. Therefore, when translating German, from the perspective of readers, mastering the core elements of translation can effectively improve the attention of readers and the value of translation.

Computer aided translation (CAT) is a kind of technology that relies on the functions of computer operation and memory, so that translators can effectively complete the translation work. Full time staff are mechanical translators, but they are smarter and more advanced. Machine translation is based on language rules and fixed sentence patterns, which is fully automatic by the computer. The translation is hard to read. Computer supported translation depends on the translator's conversion of the language. The software has a powerful translation memory (TM) that can store or access translation materials in the database. Through intelligent memory and learning, the database system can effectively accumulate and manage translation. Therefore, on the one hand, the translator can actively search for conversation through translation memory, actively translate and control the translation quality, reduce unnecessary repeated translation and reduce the workload of the translator [7]. In addition, the software updates the latest translated text into the translation storage system to form a translation storage system. The more translations, the richer the storage space [8].

The main purpose of German teaching in Colleges and universities is to cultivate talents who can master and skillfully use German, so that students can have a further understanding of German translation, and can treat cultural differences with dialectical thinking from different angles, and have strong cross-cultural communication ability [9]. Most of the students only deal with the German learning in the narrow scope of the examination, and do not go deep into the law and deep meaning behind it. No matter for teaching or learning tasks, it will be boring and meaningless to lose cultural connotation. Cultural communication and dissemination need to rely on the media role of cross-cultural awareness [10]. It is necessary to develop the contents and teaching methods of German course, so that students can learn to internalize foreign excellent culture on the basis of mastering language skills under the guidance of cross-cultural awareness. In order to make students have better cross-cultural communication ability, it is necessary to improve the cultivation of cross-cultural awareness in German teaching.

2. Method

2.1. SVD Algorithm

Prediction function representation

$$\hat{r}_{(i,j)} = q_j^T p_i (1)$$

Define the loss function

$$E = \frac{1}{2} \sum_{i=1}^{n} \sum_{j=1}^{m} (r_{(i,j)} - \hat{r}_{(i,j)})^2 + \frac{k}{2} \sum_{n=1}^{n} \| p_i \|^2 + \frac{k}{2} \sum_{j=1}^{m} \| q_j \|^2$$

(2)

The relative deviation is as follows:

$$\hat{r}_{(i,j)} = \mu + b_{c_j} + b_{u_i}$$

(3)

Combined with (1) and formula (3), there are:

$$\hat{r}_{(i,j)} = \mu + b_{c_j} + b_{u_i} + q_j^T p_i$$

(4)

The loss function can be reformulated as follows:
2.2. Training Mode of German Translation Talents

The education of German translation talents needs to cultivate German generalists. Therefore, students majoring in German translation should not only have a relatively broad knowledge of German translation and a higher level of German interpretation and translation, but also be able to adapt to cross-cultural language communication and text communication. Although there are differences between specialized German translators and compound German translators, there is no unbreakable and fixed boundary between them. In terms of training methods, it is necessary to guide students to achieve comprehensive and coordinated development in the aspects of German translation knowledge, German translation ability, professional ethics and personal character. At the same time, it is necessary to pay attention to the stage of training German translation talents. It is necessary to lay a solid foundation for the students of German translation to lay a solid foundation for their bilingual translation. In the improvement stage of German translation ability, students’ interest can be taken as the basis for diversion, such as offering elective courses related to German translation, such as political courses, news courses, literature courses, science and technology courses, or giving students more practice opportunities to improve students’ German translation application ability. The specific course proportion can be set according to the characteristics of colleges and universities and majors.

In addition, in order to further improve the students’ ability of German translation, it is necessary to attach importance to the realization of five combinations in the teaching process: one is to realize the combination of domestic and foreign. For qualified universities, excellent students can be selected to study in Germany. At present, many colleges and universities in China have carried out cooperation with foreign universities, and it is necessary for German translation major to select excellent students to study in Germany on the basis of making full use of teaching resources and optimizing teaching conditions, so as to enable students to better understand and understand German language and German culture; second, it is necessary to realize the combination of in-class and out-of-school. On the basis of the combination of extracurricular practice and classroom teaching, we should provide students with opportunities for interpretation practice and translation practice; the third is to realize the combination of group cooperative learning and tutor responsibility; the fourth is to realize the combination of task exploration and special lecture; the fifth is to realize the combination of thesis writing and oral and written examination. This is related to the specific arrangement of the course, German translation education philosophy, academic evaluation and teaching management and many other issues, so the realization of this point needs to be based on the actual teaching, through continuous adjustment in practice to optimize.

2.3. Innovation of Teaching Methods

In the teaching of German translation, in order to cultivate students’ exploration spirit and innovation ability, it is necessary to create a cooperative and interactive learning atmosphere for German translation based on the characteristics of German translation, using linguistics, psychology, pedagogy and other theories, taking students as the theme, relying on modern educational tools and driven by tasks, Thus, it can encourage students to reflect on their study and guide them to test their own German translation learning effect. At present, the students of German translation major are basically zero starting point, but there are also some students who have been exposed to German teaching. In view of this situation, the teaching of German translation should be student-oriented, with the motivation and interest of students as the starting point, so that students can realize the development of theoretical knowledge and professional skills in the process of cognition and awareness. Once students realize that their learning content and learning behavior are related to their pursuit of the goal, then students will learn independently and make the process produce learning significance. Most of the

\[
E = \sum_{i=1}^{n} \sum_{j=1}^{m} I_{(i,j)}(r_{(i,j)} - \mu - b_{i,j} - q_{j}^T p_{i})^2 + \lambda(\|p_{i}\|^2 + \|q_{j}\|^2 + b_{i,j}^2 + b_{i,j}^2) (5)
\]
students are just in contact with German translation major when they enter school, and they do not have a deep understanding of German and German culture. Even some students do not enter the German translation major out of personal will, so the guidance of German translation teachers to students is very important.

3. Experiment

3.1. Investigation Objects

In this paper, the number of students in a university is selected as the research object, and the current situation of German translation of computer-aided software is proposed. In terms of the current situation of computer-aided software related education in domestic colleges and universities, the focus is on the in-depth understanding of computer industry related translation. In order to understand the situation of computer-aided translation, this paper makes an in-depth investigation on the software translation in Colleges and universities. Through detailed data support and case analysis, this paper emphasizes the importance of computer-aided software for today's translation assistance needs.

3.2. Experimental Research Methods

Literature research method: through the collection, research and collation of relevant computer-aided translation software related book information to improve the ability of this paper. From the perspective of today's computer science, combining theory with practice, combining the status quo of translation industry with advanced computer technology, and then analyzing and elaborating from the aspects of improvement, combing out the research context and establishing the basic point of view of the research.

Questionnaire survey method: in this paper, a questionnaire survey was conducted among students in local colleges and universities. With the help of many students and teachers, 325 valid questionnaires were collected.

Course investigation method: through random interviews of some college students, we can understand the teaching status of computer related courses of students and the application level of auxiliary software translation in teaching, and carry out the teaching research of computer-aided software translation based on this.

4. Results

4.1. Investigation and Analysis of Test Data

With the development of globalization and the promotion of China's international status, the demand for translation in today's society is more and more urgent. The emergence of computer-aided translation has brought great convenience to translation work, reducing the time consumption of translation and the burden of translators. With the increasing demand for computer-aided translation in the translation market, the demand for translators is also increasing. The change of translation market pattern and the innovation of translation activities call for a new generation of translators.

4.2. Investigation Results of Experimental Data

Table 1. Advantages of using translation tools in students' eyes
The data in Table 1 shows the advantages of translation tools. From the data, it can be seen that nearly 32.6% of students agree with the function of "maintaining translation consistency", and nearly 25.2% of students agree with its advantages in "automatic adjustment". It is unnecessary for students to adjust the order of translation so as to reduce unnecessary trouble. 20.3% of the students also paid attention to the automatic quality inspection of translation tools, because they could not check the grammar and translation errors in the translated sentences by themselves. In addition. There are also "support multi text translation, other" and other functions, but the proportion is relatively low.

| option                              | Number of people | proportion |
|-------------------------------------|------------------|------------|
| Consistency in Translation          | 106              | 32.6%      |
| Automatic adjustment                | 82               | 25.2%      |
| Automatic quality inspection        | 66               | 20.3%      |
| Support multi text translation      | 53               | 16.3%      |
| other                               | 18               | 5%         |

Figure 1. Sources of students' use of computer-aided software tools

Figure 2. Students' self-evaluation on the application of translation tools

5. Conclusion

It can be seen from Figure 1 that the source of the tools used by contemporary students is the "school provided" translation tools accounting for the highest proportion, nearly 45.7%, followed by students
looking for and downloading from the Internet. However, most of the computer-aided translation tools downloaded from the Internet are trial versions, which may be dangerous and unsafe. About 21% of the students choose to buy by themselves. In order to avoid unnecessary trouble, they use the way of paying their own money. In addition, only 9.7% of the students' translation tools came from others and gave them to themselves without using them. This is because the price of computer-aided translation tools is often high, which is a heavy burden for students, so the number of people who buy them is not large, and it is more practical to use the ones that others do not use.

According to the data in Figure 2, the above figure reflects the students' self-evaluation on the practical application of computer-aided translation tools. Although students generally have a high awareness of the importance of computer-aided translation, only 18.2% of the students said "they can skillfully use the translation tools", and nearly 41.6% of the students "can realize the basic use of translation tools", 23.4% of the students think that they just lack of the use of computer-aided translation tools; finally, 18.2% of the students rated their practical use as "not good, hardly using translation tools". From the above data, it can be seen that most college students are still at the basic level in the use of computer translation tools.

To sum up, the above materials reflect the effect of the teaching of computer-aided translation course in most colleges and universities, find out the problems existing in the computer-aided translation course, analyze the causes, and analyze the information obtained, so as to put forward feasible suggestions for universities and teachers. For the future computer courses, we should pay attention to the practice of students, not just stay in the classroom knowledge teaching, should let students participate in the actual use of computer translation software, let them please self-experience, research the use of tools, so that students can realize their own shortcomings, stay on the surface of translation tools.

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