Construction of Foreign Language Translation and Training Platform Based on Computer Technology

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Abstract

The demand for foreign language translators is increasing in the context of information globalization. The computer technology has injected new vitality into foreign language translation. A comprehensive translation and training platform is built using foreign language translation combined with computer technology and under the principle of foreign language translation platform, to promote the transformation of foreign language translation model and form system translation, so as to enhance the translation quality and level.

Keywords: Computer Technology, Foreign Language Translation, Training Platform.

1. BACKGROUND

1.1 Introduction

Foreign language translation is gradually integrated with computer technology during development, helpful for construction of foreign language translation and training platform. An information-based foreign language translation learning and teaching system is established with information technologies such as database, so that users can learn foreign language translation knowledge through mobile network terminals (Lv and Wang, 2017). Moreover, the evaluation system is optimized combining computer technology to form a system learning process, so that learners can learn online and form a new learning model (Fan and Liu, 2017). Learners can access to network information platform via mobile terminals and computer technology to learn and practice foreign language translation, so as to improve their ability of foreign language translation. At present, the research literature in this field mainly focuses on computer technology and foreign language translation. The study of these literatures also provides an idea for researchers to explore the computer technology and construct foreign language translation platforms (Wang, 2016).

1.2 Purpose

Based on the theory of foreign language translation platform, this paper studies how to build a foreign language translation platform using computer technology to change the traditional foreign language translation and training methods, so that learners can learn and practice in the translation platform to enhance their translation ability (Wei, 2016). A real-time learning approach forms via integration of computer technology and foreign language translation, enhancing the learning efficiency and promoting the development of translation.

2. THEORY FOR CONSTRUCTING FOREIGN LANGUAGE TRANSLATION PLATFORM

2.1 Translation practice base

The exchange of information is rapid with economic globalization, and the demand for translators is growing. Under such circumstances, foreign language translation has become a key part of teaching (Dong and Zhang, 2016). The development of computer technology combining foreign language translation provides a new development idea for foreign language translation teaching. Computer technology provides a theory for the construction of foreign language translation and training platform. First, the traditional translation teaching focuses on the translation of articles by the learners, and the ability of the learner is determined based on the translated work, which also reflects that the theory of traditional translation teaching is behaviorism (Liu, 2015).
The traditional translation teaching focuses on grammatical features in translation knowledge and translators' mastering of these grammars. Subject to this, we should strengthen practice of grammars to improve their foreign language translation ability. However, due to strong practicality of translation in teaching, it is not feasible for teachers to carry out only technical explanations. In class teaching, repeated explanation of knowledge can lead to fatigue and distraction of the learners, failing to achieve the expected goal and the desired effect (Hu and Dong, 2015). The use of computer technology in foreign language translation and training can greatly change this state. The online translation platform can combine online teaching with classroom teaching. In the foreign language translation platform, learners can carry out autonomous learning via online teaching. The translation platform can provide sufficient online resources and corpus, so that learners can access and learn knowledge. In classroom teaching, teachers are still the main participants and guides in the classroom. The teachers have to ensure learning of foreign language translation knowledge and enhancing their translation ability (Wei, 2015).

2.2 Theory of English/Chinese translation

English-Chinese translation is a key part in foreign language translation, containing not only the translation between the two languages, but the presentation of the languages and cultures of the two countries. Therefore, we must understand the difference between the two countries in language and culture to ensure high quality translation. The key point of contrastive studies of English and Chinese is the synchronic and diachronic comparison, describing and explaining the similarities/differences between English and Chinese for high quality translation. Therefore, the comparative results of English/Chinese vocabulary, syntax, idioms and context should be applied to the translation teaching and research platform to set up special subject training model, so as to enhance learners' attention to language differences and promote more accurate grasp of the law of language usage, thus overcoming the negative transfer of native language thinking in foreign language translation and promoting the translation of sentences in conformity with the expression of English-speaking countries (Yang and Teng, 2014).

2.3 Translation corpus base

With the development of computer technology, corpora also emerge and are applied to foreign language translation. The application of corpus in foreign language translation provides a great deal of linguistic translation data. Learners can acquire rich vocabulary and context from corpus, and can operate and think independently. The corpus approach places much emphasis on usage rather than abilities, focusing on the description of the translated article instead of use of non-common grammars, and on quantitative analysis instead of qualitative analysis. A corpus should be set up for construction of a translation platform, so that learners can search translation corpus to carry out translation learning activities to enhance the accuracy and adaptability of translation. A large number of foreign language corpora can create a real language environment for learners, train their thinking, and cultivate their reasoning ability and autonomous learning ability, which in turn stimulates learners' exploration spirit (Zhu, 2014).

2.4 Interlanguage contrast theory

![Figure 1. Translation Platform Operation Mode](image)

The final is the interlanguage contrast analysis. It is found through the study that, the language acquisition comes from three aspects: language application by the learner, the information from the research object obtained by the researcher for a certain goal and the information provided by the learner through the introspection. The direct
material for interlanguage contrastive analysis and error analysis comes from the learner's output language (Shen, 2013). For this, the translation platform should have the function to batch extract linguistic information, master learners' translation learning progress and rules through real-time monitoring, and find problems on translation, grammar, vocabulary and other knowledge for improvement (Zhang and Song, 2013).

3. METHOD TO BUILD FOREIGN LANGUAGE TRANSLATION AND TRAINING PLATFORM BASED ON COMPUTER TECHNOLOGY

3.1 Construction of training platform

The computer technology also provides technical support for the construction of foreign language translation and training platform. The foreign language translation platform is built using computer technology. First, a base training platform is built. The base training platform comprises of different systems, which enables learners to improve their basic translation skills (Liu and Chen, 2011). One is the language base system which mainly emphasizes the role of learners. The learner-centered principle should be followed to build a reasonable platform for online autonomous learning of foreign languages, so as to stimulates learners' interest in the autonomous learning platform, increase their extra-curricular reading volume and improve their translation skills based on their interest in online learning and computer technology (Yi, 2010). Interest is the best teacher to guide learners; the extra-curricular reading should mobilize the interest of learners, so that learners' attention is highly concentrated on the autonomous learning of translation. As a result of popularization of information technology, the network has become an indispensable tool in life and learning. The language base system is combined with computer technology to not only attract learners' interests, but enable learners to master the basic knowledge of translation via the online platform, and read the extracurricular content corresponding to the translation content (Li and Wang, 2016). The database is adopted to build the reading data base to enrich reading materials, so as to establish an extensive, hierarchical and personalized reading database, which can meet various needs of users, achieve personalized reading and improve learners' translating ability. The materials in pages in the language base system can be updated in real-time. Learners can learn new translation knowledge via the platform to form the spirit of inquiry. Figure 2 shows the translation attitude model. The translation and training platform can provide translation training during operation combining the attitude model.

![Translation Attitude Model](image)

Meanwhile, teachers should communicate with learners via the online translation platform to know and answer any problems during learning of foreign language translation, and improve their translation ability, so that they can view the translation process from different perspectives, thereby enhancing their comprehensive ability. When a language base model is built, the computer technology shall be used to form a learning supervision system to supervise the state of foreign language learning and master the learning progress. You can learn from the foreign language extracurricular reading and others to understand their translation methods. The learning progress can be recorded in the online system. With the learning platform, two-way feedback is enabled both to the learner and to the teacher. Teachers can adjust the content of translation teaching according to the learning state. Learners can make learning plans based on the learning progress so as to improve the ability of foreign language translation. Second, build the cultural base system using the computer technology. Foreign language translation is not only a transformation of language, but should be combined with context, cultural background and other factors. We can find that culture is the most important component of translation. The cultural base system can be built combining
the foreign language corpus to form a huge cultural database. Users can understand and master the cultural knowledge using the cultural base system, and access the translation platform via the mobile network to retrieve knowledge and enrich their cultural base. Third, build a translation evaluation system. The learners’ translation learning progress can be known through combination with the cultural base system and the language base system, so as to prepare the training questions for them, judging their learning state through their answers and finding the weaknesses, proposing corresponding recommendation to enhance their efficiency.

Establish training matrix model to evaluate translation training.

Assume $x = (x_1, x_2, \ldots, x_n)^T \in \{-1, 1\}$

$v_i (i = 1, 2, \ldots, n)$ is the input for the $i$-th neuron.

$w_{ij}$ is the connection weight between the $i$-th neuron and the $j$-th neuron.

$v_j$ is the output of any neuron different from the $i$-th neuron.

$\beta_i$ is the threshold of the $i$-th neuron, take it into the formula

$$h_i(t) = \sum_{i=1}^{n} w_{ij} \cdot v_j - \beta_i, j = (1, 2, \ldots, n)$$

$$v_i(t) = h(t)$$

$$o_i(t + 1) = \text{sgn}[\sum_{j=1}^{n} w_{ij} \cdot v_j(t) - \beta_i]$$

$$o_i(0) = x_i$$

$$o_i(t + 1) = o_i(t)$$

We can obtain the training results.

### 3.2 Build a comprehensive training system

The combination of computer technology and foreign language translation has led to another development model of foreign language translation, which has led to the development of foreign language translation in the direction of information. Under such circumstances, a comprehensive training system of foreign language translation is constructed. Students should not only learn the knowledge of foreign language translation, but carry out corresponding training to enhance their ability. The establishment of comprehensive translation training system is the key. The comprehensive translation training platform comprises of two subsystems: the translation theory knowledge system and the comprehensive translation training system, which can promote learners to combine the theory knowledge and practice more accurately and enhance their translation ability. First, build the translation theory knowledge system. The goal of translation is to establish complete theory that contains enough components to interpret and predict all phenomena associated with translated works, while excluding all other irrelevant issues. This also reflects the importance of translation theory. We find through the study that translators expect the theory knowledge can guide and even regulate the translation. Therefore, a theory knowledge base should be constructed based on the data information base for constructing the theory knowledge system, so as to form a knowledge retrieval entry. Users can access the translation theory knowledge through the retrieval entry in the online platform and grasp the theory. The learners can also master the latest theory for translation. Meanwhile, a translation evaluation system is built for systematic evaluation of the translation ability of the learners. Figure 3 shows the online translation evaluation system.

In the process of building translation platform, a translation text analysis system shall be built using the computer technology to distinguish the translation text according to the text features. There are three types of translation texts: operation text, expression text and information text. The translation methods used in different texts are also different. Learners will select the learning direction using the foreign language translation platform combining the type of translation text, and carry out online translation learning, so as to grasp the translation method and features of different translation texts, and thus to form an efficient translation process. Second, build a comprehensive translation training system. Build a comprehensive simulation platform using computer
technology. The platform is a cross-disciplinary comprehensive simulation platform that simulates and constructs a vertically complete cross-disciplinary system so as to simulate the industry market. The learners who participate in the simulation practice must make full use of their professional knowledge and skills, otherwise they will become the fetters of the entire cooperative team. Therefore, the foreign language learners shall work closely with learners of different disciplines on the same simulation platform using the platform. Learners can develop the science and technology knowledge necessary for technology translation using this platform. In addition, professional development courses are set in the translation platform using computer technology to encourage personalized development of learners, creating cross-disciplinary lectures, and enrich the theory knowledge of learners. Build a translation training room to provide learners with autonomous learning space, so that they can better understand translation knowledge. Establish a competitive translation platform and carry out translation competition activities regularly. Organize learners to translate the text. Carry out transparent and fair evaluation using the information evaluation system to stimulate learners’ enthusiasm. The evaluation system is used during the operation of the platform.

![Figure 3. Online Translation Evaluation System](image)

$s$ is the college English self-learning ability set.

$$s = \{s_1, s_2, ..., s_i\}$$  \hspace{1cm} (5)

$s_i$ denotes the $i$-th groups of factors in $s$, $i=1, 2, 3, ..., n$

Take into formula $r = \frac{w_i}{\sum_{j=1}^{m} u_{ij}}$

$$b_i = w_i \cdot a_i = [b_{i1}, b_{i2}, b_{i3}, ..., b_{in}]$$  \hspace{1cm} (6)

$$b_{ij} = \sum_{k=1}^{m} (w_{ij} r_{ij})$$  \hspace{1cm} (7)

$$s = \sum_{i=1}^{k} u_{i} b_{i} / \sum_{i=1}^{k} b_{i}^{n},$$ we get the evaluation results.

4. BRIEF CONCLUSION

The combination of computer technology and foreign language translation provides a new development direction and idea for foreign language translation. A foreign language translation and training platform is built using computer technology to form an information foreign language translation learning model, which provides convenience for learners to acquire knowledge of foreign language translation and improve their translation ability, promoting the development of foreign language translation.
REFERENCES


