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Exploring Construction of Online Teaching Platform Based on Self-Compiled Corpus and its Application

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Abstract: In recent years, some researches have studied applying on-line corpus in English classroom teaching and proved it helpful in improving teaching efficiency. However, the existing corpora are mainly designed and compiled for linguistic research and investigation, with large scale and a variety of topics and register, not conformed to the language teaching requirements. Besides, most corpora are restricted to the study of vocabulary, listening and oral English for General Purposes (EGP) while for English for Specific Purposes (ESP), e.g., Business English (BE), are comparatively deficient. In view of this, this study reports on a pilot program, under the guidance of College English Curriculum Requirements, mainly about how to develop a BE teaching platform system, based on a self-compiled corpus by employing the techniques of Java programming and SQL database. It is expected through the platform to realize online inquiry, retrieval and sharing corpus resources over the whole campus and facilitate the teaching and self-teaching of BE with no time and space limitation. The platform is applied to explore a corpus-based teaching model which focuses on students' autonomy meanwhile mobilizing teachers' initiative in BE teaching.

Key words: Corpus, online teaching, online teaching platform, computer-aided teaching model

INTRODUCTION

Business English is actually English used in the business environment which is a complete English system concerning international trade, finance, marketing, management, international regulations, electronic commerce and intercultural communication and it is a kind of English for Specific Purposes (ESP).

Along with the professionalization of the public English teaching and the updates of language teaching idea, English for Specific Purposes (ESP), including business English, shall become the direction of China's college English teaching reform and gradually become the mainstream of college English teaching. In China, in addition to trade and economics colleges, many comprehension, foreign language, science and engineering, normal, agriculture and forestry institutions offer business related ESP courses for the senior students. Business English reading, writing and translating are important part of this course. But in China, the circumstance at present is that the teaching classes are on the big size, ESP class hours are limited and teaching materials exploitation still lags behand demand. For these reasons, it is a particularly urgent task to innovate BE teaching model and cultivate students' autonomous learning ability.

The application of corpus linguistics research findings and the technology devices to foreign language teaching is now a remarkable new linguistic field which has unique advantages. As the language materials from the corpus are real and abundant, reflecting lively and explaining well the use of language. On the other hand, corpus research means provides technical support for inquiry learning which is beneficial to the implementation of the autonomous learning (He, 2010; Ge *et al*., 2011).

In view of this, this study is mainly about how to build a BE teaching platform system and its application. The platform is based on the campus Web network, taking the network technology as the support and relying on the self-built corpus. It is designed to realize online inquiry, retrieval and sharing corpus resources over the whole campus, thus facilitate teaching and learning with no time and space limitation. Through the platform system we will make teaching experiments and explore new teaching modes based on self-compiled corpus, so as to improve the efficiency of teaching and learning.

Corpus refers to a large electronic language database which is built by collecting naturally occurring continuous language texts or discourse segments, according to certain principles of linguistics and by using random sampling method (Yang, 2002). The emergence of the corpus not only marks the technology progress of

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language study means but also marks the major change in the thoughts of language study; it represents a new language thinking, a new career (Leech, 1997; Granger, 1998; Li, 1999; Ge *et al*., 2011).

Outside China, corpus-based foreign language teaching research mainly includes three aspects:

- **Development of teaching resources:** Coxhead, using corpus, developed an academic vocabulary to design the vocabulary of the Academic English (English for Academic Purpose) and the materials for reading and writing (Yao, 2005)
- **Study of learning tasks:** In the early 1990s, Data Driven Learning (DDL), put forward by Tim Johns, represented a new method of learning a foreign language based on the corpus and challenged the traditional teacher and textbook-centered foreign language teaching (Zhen, 2005)
- **Construction of language teaching corpus:** In 2000, Simpson, with others, established the "Michigan Corpus of Academic Spoken English" to analyze the characteristics of Academic English and to improve and develop the tutorial for Academic Oral English and materials for listening tests (Yao, 2005; Ge *et al*., 2011). In addition, a number of corpuses for the research of translation and writing was established, such as Baker (1993, 1995), Garside *et al*. (1997), Olohan (2004) and Kenny (2006)

In China, Huang Renjie and Yang Huizhong from Shanghai Transportation University built Jiao Da English for Science and Technology (JDEST) in 1982 for the reaearch of applying corpus linguistics to teaching which can be viewed as a milestone. Among the earliest domestic scholars who proposed to apply corpuses in the foreign language teaching practice were Li (1999) and Zhen (2005). They mainly introduced and discussed the thought, method and technology in foreign language learning, driven by corpus data. Li and Pu (2001) first realized in China the online inquiry, retrieval and free sharing of corpus resources and the online conversion, instant transmission and sharing of more than 700 words text resources in four corpuses and developed the database learning system (Zhen, 2010). In recent years, some people have begun to study how to use online corpuses in college English teaching and real-time classroom teaching (Zhang *et al*., 2008; Zhang and Zhou, 2009; Ge *et al*., 2011) and proved that corpuses can greatly improve the efficiency of classroom teaching.

However, the existing corpora are mainly designed and compiled for the investigation and study language which are large scaled and have a variety of topics and linguistic fields, but the contents are usually not conformed to the language teaching requirements (He, 2010). And because of the difference of teaching conditions at home and abroad, the current domestic development and application of teaching corpora are usually restricted to the vocabulary, speaking and listening, etc. of the English for General Purposes (EGP) and corpora for teaching English for Special Purposes (ESP) are comparatively deficient. In view of this, this study, based on the corpus construction of business English teaching platform and its teaching mode research arises at the historic moment. The author in this study mainly demonstrates the construction of corpus-based business English teaching platform and the corpus-based teaching mode of business English reading, writing and translating.

MATERIALS AND METHODS

Construction of corpus-based business english teaching platform: This study aims to, through the independent design and creation, establish a corpus mainly for the reading, writing and translating of general business English teaching and another for students self-tests and create a business English teaching platform system through computer programming technology. At the same time, combining with classroom teaching, we are to explore a corpus-based business English teaching mode and network-based professional skills practice. The basic framework of the corpus-based business English teaching platform as shown in Fig. 1.

This framework consists of two main parts: The campus network-based business English teaching platform software development and the application of the corpus-based business English teaching platform. Part one is construction of the campus network-based business English teaching platform. First, collect and collate the original data, labelling and processing the corpora (such as identifying data source and level, judging rules, etc.). Next, by using the computer programming language, design and construct a corpus material input system, to ensure the integrity and credibility of the data in the corpus. Then, gradually establish a corpus for general business English teaching and training, consisting of son corpora for international business English, international financial English, legal English, golf English, logistics English, tourism and hotel management English and so on and a self-test corpus for students training BE reading, writing and translating skills, with four son corpora for language knowledge,

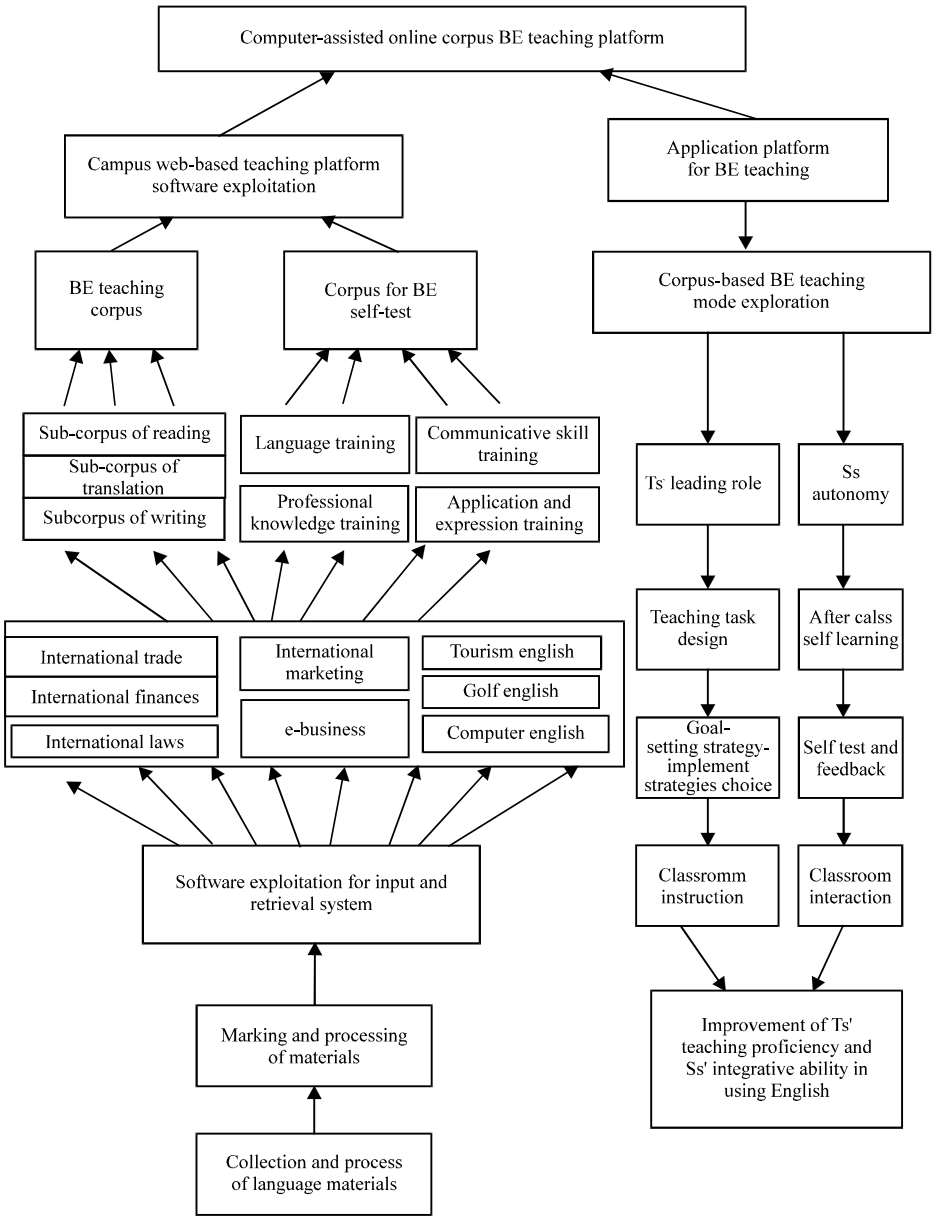

Fig. 1: Structure of corpus-based BE teaching platform framework

professional knowledge, communication skills and cultural background. Finally, with Java programming technology and SQL database technology, we develop a Web teaching platform based on the campus network and a corpus-based business English teaching platform system was developed.

Part two is the application of the corpus-based business English teaching platform. Teaching experiments were made in the course of classroom teaching, based on the self-compiled corpus and explore a corpus-based business English teaching mode-to make the process of business English teaching a comprehensive trinity for the students to improve their English level, learn professional knowledge, practise professional English and teach and learn professional English, not affected by time and the place limit in a certain extent. Therefore, the teachers' guidance and the students' subjectivity can be in full play, to achieve the dual goals of improving teachers' teaching level and strengthen students' comprehensive ability of using the language. The following are in detailed ideas of constructing the two modules.

- **Corpus design and development:** In the design of the teaching corpus, we abide by the following principles: To cultivate students' comprehensive ability of using the language, especially in reading, writing and translating in order to make them adapt to the teachers' teaching methods and choose the appropriate learning materials to carry out autonomous learning purposefully, according to their own characteristics, levels and time, so as to improve the comprehensive ability of using the language quickly. In the construction of the corpus, main focus was on reading corpora. The specific design is shown in Table 1

Table 1 shows that the corpus for general business English teaching includes eight primary corpora for international business English, international financial English, international regulations English, tourism and hotel management English etc. It fully embodies that the general business English is a dynamic and open system which has the characteristics and properties of ESP but also gradually permeate to the language context, enhancing the interaction between English and business and combination of them, making its meaning expand, extend and develop constantly. As the students already have comparatively good listening and speaking ability after learning EGP before they learn ESP courses, secondary teaching corpuses for reading, translating and writing only were established, aiming to improve students' professional skills and academic English ability. The contents of the three secondary corpora for reading, writing and translating account for 50, 30 and 20% of the whole corpus, respectively. Combining knowledge and interest, a certain video and audio materials, especially real corpora was selected, as a supplement to the training of students' listening and speaking ability, so as to cultivate students' comprehensive ability of using the language.

In the design of the self-test corpus, will be refered to the design principles of CET4 (CET is the abbreviation of the College English Test. It is a large-scale standardized test in China, with as many as 4.5 million college students taking it every year) and CET6 on the Net, introduced by Jin and Wu (2009). We will mainly refer to their design principles of test papers and the test system, aiming to test the students' language application ability in the learning process, give full play to the positive backwash effect of the tests in the course of teaching and further improve the test and evaluation system as soon as possible, to help students adapt to CET4 and CET6 online and improve their ability of autonomous learning. The contents and proportions of the secondary corpora of the self-test corpus are as shown in Table 2.

Table 2 shows that the self-test corpus for general business English consists of four secondary corpora for linguistic knowledge training, professional knowledge training, cross-cultural communication skills training and training for professional English application and expression. Our design idea is that business English learning is a comprehensive process for students to

Table 1: Design of the corpus for teaching general business English reading, writing and translating

Primary corpora	Secondary corpora	Contents and types of material	Proportions
International trade	Reading	Intensive reading	30
		Fast reading	20
International finances	Translation	Inter-translation of vocabulary/terminology	5
International laws marketing e-business		Inter-translation of sentences and paragraphs	10
Tourism English		Discourse translation	5
Golf English logistics English	Writing	Sentence paraphrase and making sentences	5
		Rewriting and completion text	5
		Writing based on context	20

Table 2: Design of the self-test corpus for general business English

Primary	Secondary	Types	Testing task	Proportion
International trade	Language training	• Filling the blanks • Multiple choices • Sentence rewriting	Vocabulary grammar syntaxes main idea details reference making judgment	20
International finances International laws	Professional knowledge training	• Definition • Recognition • True or false • Open questions	Definition concept principles professional common senses	40
Marketing e-business Tourism English	Cross-cultural communicative skills training	• Multiple choices • Filling the blanks • Dialogues completion	Cultural awareness communicative competence pragmatic competence	10
Golf English Computer English	Professional English application expression ability training	• Reordeing of sentences • Completion of a text • Case analyses • Context writing	Logical thinking ability of comprehension written expressing ability	30

improve their English level, learn professional knowledge, train professional English and cultivate their intercultural communicative awareness. It reflects that the concern of the business English teaching is not only the learners' mastering of language knowledge and professional knowledge but also their knowledge of how to solve practical problems in a different language (business) environment with the language and professional knowledge they have learned and change it into communication abilities and professional skills. We aims to explore a new corpus-based teaching mode for professional English.

- **Construction of the corpus-based teaching platform for general business english:** After the compilation of the corpus, we begin to design a Web-based teaching platform for BE. The platform, through a network server, publishes application system in the campus network, in order to ensure the safety of the teaching platform and the service quality

According to different corpora and topics, we'll adopt different evaluation modes. As the answers to the objective questions (including the traditional reading comprehension, cloze test, etc.) have the characteristics of uniqueness, we will store the standard answers in the database and through the programming, compare them with the students' answers and give them scores. The answers to the subjective questions (mainly including sentence rewriting, composition and translation, etc.) have the characteristics of diversity, so we will refere to the measures Ge *et al.* (2011) took, that is, refere to the "Link Grammar Parser4.1 analyzer" developed by the experts of computer language from Carnegie Mellon University and develop our own analyzer. This analyzer, by comparing the subjective answers with the students' answers, will make a comprehensive evaluation and give the scores, based on the syntactic analysis, from the basic information, word frequency, false words, number of sentences,, average sentence length, average word length, grammar and other aspects. At the same time, considering the analyzer may give a distorted result, we will provide an intelligent interactive inspiration mode, to allow teachers to make further analysis and modification which can not only reduce teachers' burden but also ensure the accuracy of the final evaluation results.

Exploration of a corpus-based teaching and learning model for BE: On the basis of the corpus establishment, together with live classroom teaching, we will explore a corpus-based teaching and learning model, as is shown in Fig. 2.

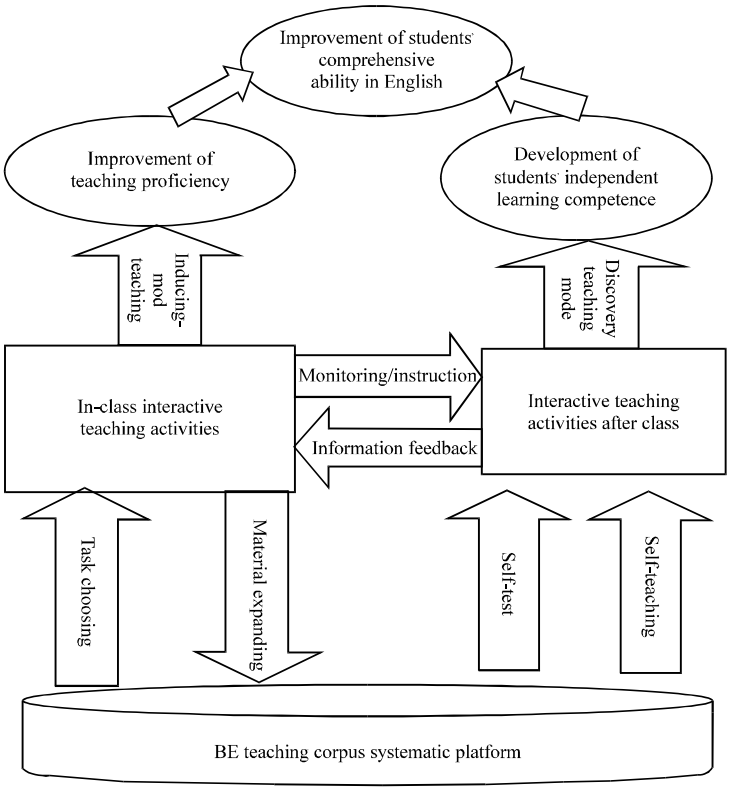

Fig. 2: Corpus-based teaching model

The model can be described as 1+2+2+1 teaching mode, that is, one base, two platforms, two effects and one goal: on the basis of the corpus, constructing two platforms for classroom interactive teaching and extracurricular autonomous learning, respectively, to improve teaching efficiency and enhance students learning autonomy, thus achieving the final goal of students' comprehensive ability improvement.

This model aims to fully stimulate the enthusiasm of teachers and students and give full play to the teachers' leading role and the students' subjectivity. On the one hand, teachers can use the online corpus system to get abundant teaching resources, better their teaching design, give full play to their leading role as a guide, assistant and supervisor as well in the classroom, carry out conductive teaching, guide students to observe, generalize and induce the language phenomenon with the help of the corpus and study in the course of self-discovery and, according to the students' feedbacks and the requirements of BE constant development, the teachers will timely increase and renew the corpus. On the other hand, in the teacher's supervision and with his guidance and help, the students can use the online corpus system in the extracurricular time to retrieve information, select learning materials, do independent learning, according to their individual needs and their study subjects. Therefore, we can improve both the teaching efficiency and enhance students' autonomous learning ability and realize the ultimate goal of improving students' comprehensive ability of using the language.

RESULTS AND DISCUSSION

After a year's application of this platform system and implementation of corpus-based "trinity" teaching model we find some notable results in teaching and learning.

Students were inclined to spend more time in English learning than before and learning became more active and initiative. Data from questionnaires and interviews show that above 80% students (including Business English majors) spent more than 2.5 h after class in learning and training language skills and relative professional knowledge through the platform system-8 more hours in total a week spent in English learning in average each, compared to the previous 1.2 h per day. "I used to complain not having sufficient time to go over what learned in class and finish homework," said one of the students in an interview, "but now I can access to the corpus-aided learning platform with a PC/ipad or my mobile phone any time to have a revision or do homework even when waiting in line for dinner." Another student said, "I like to read various kinds of articles in the reading corpus, especially enjoy the sense of accomplishment when getting high scores in doing time-limited reading comprehension exercises in the self-test section". About 78% students agreed that corpus-based learning platform made BE learning easier, more interesting and more initiative. The evidence supports (He, 2010; Ge *et al*., 2011), "The application of corpus linguistics to foreign language teaching…. is beneficial to the implementation of the autonomous learning, facilitates teaching and learning with no time and space limitation".

The prevailing wisdom (He, 2010; Ge *et al*., 2011), also the research hypothesis, is that corpus-aided teaching platform will help to optimize teaching and learning conditions and thus to improve teaching efficiency and meanwhile reduce teachers' workload. There have been positive experiments with it. But the research evidence on teachers' workload is ambivalent.

After a year's teaching experiment, students' learning outcomes are very satisfactory. CET-4 and MET-4 levels of the students involved (taking School of Foreign Languages as example) were significantly improved in 2014: Non-English majors' CET-4 one-time pass rate was 78% while the previous five-year average rate is 58%; English majors' MET-4 one-time pass rate was 65%, compared to the five-year average pass rate of 51%. We are so pleased with the results that we are going to spread the implication of the platform system in other schools of our university.

Despite such experiments, the research evidence on teachers' response is ambivalent. According to information from a questionnaire and some interviews, most teachers said they felt obvious pressure of urgent improvement of knowledge base and spent even more time in preparing lessons, though the corpus-aided teaching platform supplies teachers and students with abundant fresh materials, samples and training exercises. So, the evidence is that the application of the platform improved teaching efficiency but did not decrease teachers' working strength. But we think it is just because most teachers can not fit in with the new teaching mode for the time being and they will soon get with it, as Zhen (2005) said.

From the above, it is believed that platform and teaching model can both improve the teaching efficiency and enhance students' autonomous learning ability and realize the ultimate goal of improving students' comprehensive ability of using the language.

CONCLUSION

The online teaching platform system, based on a self-compiled corpus with sufficient authentic, fresh

language materials and skill training exercises for BE reading, writing and translation, can not only realize online inquiry, retrieval and sharing corpus resources over the whole campus, but also facilitate teaching and independent learning, with no time and space limitation The platform makes it possible for teachers to choose different materials according to students' language level, meanwhile it supplies students with personalized, interesting learning materials and matching self- test tools. The platform, with the nature of corpus' retrieval, exploitability and self-access, is expected to explore a corpus-based instructional model which will focus on students' autonomy while mobilizing teachers' initiative in BE teaching and learning.

This study is only a general idea of construction of corpus-based BE teaching platform and a rough demonstration of ideal about corpus-based teaching model. Next stage, we are going to launch extensive teaching empirical researches and put into effect our "trinity" of professional English teaching model, expecting pushing our university's ESP innovation to a new stage.

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