

Pros and Cons of Corpus in Lexical Teaching of English for Specific Purposes

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Abstract. Since most college English teachers are lack of ESP lexis, ESP teaching in China, one trend of college English teaching reform, is still in an awkward position. The paper explores a feasible solution, applying the research methods of contemporary corpus linguistics to ESP teaching, which involves constructing classified ESP corpus, developing applied software of ESP corpus, and promoting ESP lexical teaching with data-driven learning mode, so as to help teachers and students master the core lexis of ESP as soon as possible, reduce the blindness of teaching, improve teaching efficiency and eventually accelerate the pace of college English teaching reform.

Keywords: Corpus, ESP, Lexical Teaching, College English Teaching Reform

1. Introduction

Lexical teaching is a field that the resources and research methods of corpus applied to foreign language teaching with the most fruits [1]. The advantages of applying corpus to English lexical teaching are as follows. First, applying corpus to lexical teaching meets the Constructivism Learning Theory. In corpus-based lexical learning, learners are not passive recipients of information from teachers and textbooks, but construct language knowledge through their own observation, analysis, summary and insight of large real corpus. Second, corpus-based lexical teaching helps to cultivate students' self-learning ability. Mastering corpus, the powerful tool and method, students do not have to over-rely on teachers and teaching materials, and can conduct autonomous learning at anytime. Third, corpus can help students learn real and natural language and master authentic match of words. Finally, corpus can help students understand the semantics and pragmatic norms of words in communication, and be aware of the language features of domain variants.

With the growing development of national economy, science and technology, international exchanges become more frequent. "To effectively improve the professional English level and the ability to make scientific research with English of university students" has become one of the main tasks of college English teaching reform [2]. Currently, it is practical and wise to carry out ESP teaching when it is too early to open bilingual classes [3]. It is also clearly stated that the main point of making a strategic adjustment of foreign language education is to fulfill the general English teaching task in secondary schools so that students can focus on professional English learning after they enter universities [4]. Cheng Yumin also emphasized that China was in the stage of foreign language teaching transformation, so basic foreign language ability should be trained in secondary schools and professional English ability in universities [5].

ESP teaching is the requirement of social development and an integral part of college English teaching. English teachers should prepare for "transition" as soon as possible, determine their own direction of development, and develop their professional learning and training programs, making good preparation for carrying out ESP teaching in terms of ideology and knowledge structure.

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2. Problems of ESP teaching

According to “College English Syllabus (Revised Edition)” in 1999, professional English classes (ESP) in principle are taught by professional teachers, and foreign language department (ministry, teaching and research section) can cooperate in accordance with specific circumstances and assistance. Over the years, actually ESP teaching is basically undertaken by professional teachers, and college English teachers only take fundamental English teaching in the first two years of undergraduates. Although professional teachers have advantages in profession, most of them feel powerless in language training and proficiency. The results of survey show that students want to realize language and profession win-win in the process of professional English learning [6]. On the other hand, college English teachers have significant advantages in English language teaching theories and expression in English, but they are lack of professional knowledge. The biggest difficulty they face is unfamiliar with specialized lexis, especially the special meaning of basic words in professional English. All these discourage college English teachers to ESP teaching, and lack of qualified ESP teachers has been the main crux of ESP teaching.

It is claimed that ESP teaching faculty should be stable, with English teachers as the main body, since ESP courses prepare students for professional learning, an extension of language courses. Theoretically, ESP teaching, as a branch of applied linguistics, is language courses, so ESP teachers should at first be the qualified teachers of fundamental English [7]. Cai Jigang put forward that the content ESP courses should not be too professional, but the language should be representative [8]. It is necessary to develop special English teaching staff with English of a high standard and certain professional knowledge.

ESP teaching the trend of college English teaching reform. College English teachers should successfully transmit into ESP teachers with both language advantages and certain professional knowledge, so as to continue to survive and develop in the fierce competition of universities. In the process of transformation, ESP lexis loaded with professional meaning are the bottleneck of college English teachers to enhance professional knowledge. In corpus-based data-driven learning model, lexical learning occupies a central position. Corpus-based central word retrieval and contextual co-occurrence can create conditions for ESP learners and English teachers to eliminate lexical obstacles and learn professional knowledge as soon as possible.

3. Corpus-based Data-driven ESP Lexical Teaching

Corpus, a giant database integrated of a large number of language information used in real cases, available for computer search and specific for research, plays an increasingly important role in modern linguistics research and language education for its unique advantages of large capacity, authentic corpus and quick and accurate research.

The construction of ESP corpus helps college English teachers and ESP students to break through the bottleneck of being lack of specialized lexical knowledge, which is also the most important task in our education reform project. From collecting corpus, selecting high frequency professional lexis, translating high frequency professional lexis and developing and applying retrieval software, we refer to the previous successful experiences of others and form an orderly corpus constructing procedures and methods in the light of teaching reality.

3.1 Collecting Corpus

According to the basic principles of constructing corpus and taking into account that the objectives of ESP corpus are mainly English teachers and undergraduates in the fundamental stage of universities, we select professional literature as sample corpus. Most of the corpus are selected from professional English textbooks, reference books, manuals, general journals, books and internationally recognized academic authority EI databases such as ScienceDirect. The number of various types of language materials accounts for a certain proportion, aiming at introducing for readers an overview of the profession and its specific application in a particular area, whose subject content is close to the profession, covering more representative professional lexis. The number of collected corpus comes up to a certain scale. Each classified lexicon has attained 2.5-3 million token, and constructed four classified lexicon have attained altogether 10 million token. “So that the accounted lexis are representative to reach a certain size of language samples, representing language applying totality on behalf of a certain institute” [9].

3.2 Selecting High Frequency Professional Lexis

To transform the entire corpus into a plain text form, one of the most commonly used tools in corpus research WordSmithTools 4.0 is applied to process the text, account the top 5000 words of frequency and lock in the valid words of frequency to more than 30 times, to generate glossary. According to the glossary generated on the basis of BNC and American General List (common glossary, 2186 words in total), automatically block the statistical result of selected corpus with computer software (such as block functional words of very high frequency in all corpus like “the”, “of” and “his”), and professional staffs conduct artificial screening, extracting and merging according to their experience, to ensure screened entries of certain profession and representation. Take the construction of classified corpus of structural engineering (containing 2.5 million word frequency and 320 texts) as an example. In the first stage, after processing with software and artificial screening, the representative 600 professional words of top word frequency and extending professional phrases or word strings of more than three or four words are selected. According to statistics, the total frequency of the 600 professional words of high frequency occurring in the structural engineering classified corpus of 2.5 million word frequency is 220, 805 times. After the functional words in the corpus (such as articles, prepositions, conjunctions) and some special symbols are blocked, the total frequency of the 600 words of high frequency takes about 41% of the total frequency of the rest over 536000 content words after blocking. Accordingly, from a rough point of view, the high-frequency words cover about 40% of the content in a structural engineering professional article in general, which indicates that the mastery of these professional core lexis is quite helpful to the reading comprehension of professional articles. About 2500 professional words have been extracted from the constructed 4 classified corpus. In the second stage, further extract and translate the professional lexis in each classified corpus, so as to broaden the coverage of the high-frequency words in their professional content, helping English teachers and ESP students to break through the bottleneck of being lack of professional knowledge and lexis in a more effective way.

3.3 Translating High Frequency Professional Lexis

To conduct manual translation of selected 2500 professional lexis. Mainly consulting various professional and general English dictionaries, the selected words are translated one by one, and the meanings of the word in professional English and in general English are respectively indicated, to facilitate ESP teachers and students make comparative study and understand the professional meaning and usage of the word or phrase as soon as possible. The selecting and translating processes of professional lexis are based on interdisciplinary cooperation, in which professional staffs play an important role. Currently, four groups of classified corpus have respectively translated 600-700 high-frequency words and completed the translation of selected 2500 professional lexis. The professional lexis have been probed in a small scale of structural engineering ESP teaching, and questionnaires including corpus application software were conducted, which received high acceptance of students and teachers (see Table 1).

Table 1. The occurrence frequency of the words in the literature of the profession

Rather high	General	Not high
71. 4%	28. 6%	0%

3.4 Developing and Applying ESP Retrieval Software

Corpus integrates language and computer technology as a whole. Without certain retrieval software to analyze and process the mass text information, it is hard for the corpus to play its desired effects. To obtain valuable information with corpus, computer technology plays a pivotal role. According to ESP teaching objectives, ESP classified corpus tool software ESP small assistant is independently developed.

The main function of the software is to search retrieval-word-centered index lines with KWIC and reach contextual co-occurrence, to clarify the specific meaning of the word. Take “displacement” as the example. Just by clicking the word in the professional glossary on the top left of the interface, all the example sentences containing the word in the corpus will be displayed in the lower left, while on the right interface, the frequency of displacement-centered three words will be automatically counted and displayed. It can be seen

that “horizontal” and “lateral” are the words of the top frequency matching with “displacement”, respectively forming “horizontal displacement” and “lateral displacement”, the professional terms in structural engineering. In addition, it can be found that the first word on the right next to “displacement” is “component”, to form “displacement component”, and thus professional term like “lateral displacement component” can be found. In this way, teachers and student can constantly tap ne terminology and learn new knowledge.

In addition, ESP corpus processing software also has other features, such as openness, allowing expanding the existing glossary, adding new words, and editing existing words and meaning at any time. Teachers or students can load their selected professional literature and then understand word meaning, read texts and search sample sentences with the help of the software, as well as construct their own sub-corpus to conduct corpus analysis of lexical statistics and match research.

4. Investigation on the Effectiveness of Applying Corpus to ESP Lexical Teaching

4.1. Students' Attitudes

Most students hold a positive attitude towards applying corpus to English lexical learning. 79.4% of students agreed or strongly agreed that “corpus is a very good tool for learning English lexis”. 87.7% of students agreed or strongly agreed that “it is a good way to correct errors in writing by searching the corpus”. 80.8% of students agreed or strongly agreed that “the corpus is a good teacher when we are not sure about the usage of the word”. 75.3% of students agreed or strongly agreed that “I propose college English teachers apply corpus in teaching”.

4.2. Involvement Level

The majority of students can seriously complete the required learning tasks. 65.7% of students agreed or strongly agreed that “I can earnestly fulfill the task each time teachers assign me to search words with a corpus”. 86.3% of students agreed or strongly agreed that “our entire group is very serious when teachers ask us to communicate word usage within the group”. It is also found from classroom observations that most students can seriously fulfill the relevant learning tasks.

4.3. Learning Effect

Most students think the effectiveness of applying corpus to lexical learning is rather good. 72.2% of students agreed or strongly agreed that “I have learned a lot of lexical knowledge from other group members”. 69.9% of students agreed or strongly agreed that “lexical learning with corpus makes me a better grasp of word usage”. 64.4% of students agreed or strongly agreed that “I can correct most of lexical errors in writing by retrieving corpus”. 69.9% of students agreed or strongly agreed that “generally, the effect of applying corpus to lexical learning is very good”. It can be seen from the above results that although most students hold a positive attitude towards the effect of lexical learning with corpus, there are still a considerable number of students who have difficulties and need help and guidance of teachers.

4.4. Cultivating Self-learning Ability and Habit

Lexical learning with corpus is of great help to cultivate self-learning ability and habit of students. 80.9% of students agreed or strongly agreed that “lexical learning by retrieving corpus improves my self-learning ability in English”. 86.3% of students agreed or strongly agreed that “in the future, I will learn English lexis with corpus if conditions permitted”.

4.5. Existing Problems

It is shown in the survey that students encountered some difficulties in learning lexis with corpus. 84.9% of students agreed or strongly agreed that “the inconvenience of internet surfing is an important reason that hinder me from using corpus”. 58.9% of students agreed or strongly agreed that “I have not found English corpus suitable for my level”. It is also found from the interviews that another reason affecting corpus use is that universities charges students to use machines. In addition, a number of other issues students encountered are found in open questions of questionnaire and interviews, such as “being not used to learning English lexis

with corpus”, “new words in sample sentences are too many and difficult to master” and “too much information is sometimes not easy to sum up”. If corpus is further applied to lexical teaching, these are the problems to be solved.

5. Conclusions

The position of ESP teaching in China college English teaching reform becomes more and more outstanding, so transiting to ESP teaching as soon as possible is the challenge that college English teachers must face. Constructing large-scale ESP sub-corpus with the research methods of corpus linguistics and digging out specialized lexis, lexical patterns and even the stylistic features of professional essays with statistical theory and computer technology will effectively help English teachers to change into ESP teachers through removing the main obstacle to implementing ESP teaching, grasping the meaning of commonly seen technical lexis and increasing the understanding of professional knowledge. However, the continuous development of science and technology determines that the construction of ESP corpus and its application in ESP teaching is not a matter once and for all, but rather a progressive process of continuous improvement. The exploration of ESP teaching in this paper aims at initiating the research in this field. Colleges and universities can construct their own ESP corpus in accordance with the characteristics of their own professional disciplines. It is also hoped that ESP corpus share of similar disciplines can be achieved through inter-school exchanges to create a new situation of ESP teaching and college English teaching reform.

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