

Comparison and Adaptability Study on Three Ways of Technological English Teaching for Automation Specialty

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Abstract. In this paper, three ways of technological English teaching for automation specialty are studied, which consist of specialized English course, bilingual course and embedding bilingual teaching. By the detailed comparison and analysis of their respective adaptable properties, some possible suggestions on how to select the more appropriate teaching ways are provided for different students who major in the automation specialty but have specific needs of their own. A case study is then demonstrated for the teaching-way selections for the technological English learning in the automation specialty from Tianjin University of Technology and Education. As a result, this study may supply with a new idea of technological English teaching for educators in the automation specialty.

Introduction

In July 2010, State Council issued “National medium and long-term education reform and development program outline (2010-2020)” and put forward that promoting the integrated development of human beings and adapting to the social needs should be regarded as the basic standard to measure the quality of education [1]. With the development of automation technology, a large number of powerful simulation software, frontier subjects related research papers, high-performance automatic control instrumentations and high-quality automation textbooks are partially borrowed from abroad in recent years [2]. As a consequence, the importance of improving specialized English ability is remarkably increasing in further study and future work.

For undergraduate education for automation specialty, the acquisition of specialized English ability usually relies on specialized English course. However the single knowledge acquisition approach can hardly meet the different requirements for automation profession English ability. Therefore, the knowledge learning and the ability cultivating of the specialized English can be improved to a great degree.

Three Teaching Ways of Specialized English for Automation

Specialized English Course

In “college English teaching outline” revised in 1999, it was proposed to give the specialized English course in college. In such course, it is required to “arrange the specialized English literature reading, the English material translating and English abstract writing, etc.” [3]. Now although it is supplemented by introducing general knowledge of specialized English, vocabulary learning, literature reading and translating are still the main contents in specialized English course.

Bilingual Course

Bilingual course are curriculums which select a foreign language as partly medium language to teach a specific subject and the medium language discussed in this paper is English. The teaching objectives

of bilingual course are not only to achieve specialized English ability, but also to realize the acquisition and construction of the specific knowledge through English, the language carrier. In China Chinese may be used more often as the teaching language than English in bilingual course. “Considering the difficulty of teaching content, the English level students have and other factors, it is adopted teaching mainly in Chinese and additionally in English” [4].

Embedding Bilingual Teaching

Take “Automatic control principle” course as an example, the specific form of the embedding bilingual teaching referred in this paper includes several points, which can be listed as follows. (i) Introduces the English vocabularies about the subject from the easy to the complicated and gradually use the words have been introduced to replace Chinese vocabularies in the class. (ii) When using matlab software in experimental lessons, make use of the whole-English language environment of matlab to guide students to apply the English expressions they have learned. (iii) Encourage students to finish the homework in English, and it will be included in the evaluation of the grades. The whole teaching process embodies the situation and interactivity, and integrates English learning into professional applications [5].

The Comparison of Three Teaching Ways of Specialized English for Automation

The Range of Specialty Domain Covered by Specialized English

The teaching contents of specialized English course include several professional articles learning of automation, covering a wide range of subjects. Every bilingual course and embedding bilingual teaching is only for one specific specialized subject of automation specialty respectively. So English is taught only in the field of this subject almost.

The Proportion of English Ability Training in Teaching

Specialized English course focus on English text learning, and the specialized English ability training is the main purpose of the course. Bilingual teaching emphasizes not only on specialized English learning, but also on the study of subject knowledge. The analysis of English sentences or passages is no longer the focus of curriculum. Compared with the specialized English course, the proportion of the English ability training in bilingual course is smaller. As for embedding bilingual teaching, English learning only serves as an extension supplement rather than the main goal and content of the course.

The Integration of Specialized English and Specialty Knowledge

Specialized English course separates the teaching of specialized English from the teaching of specialty knowledge. The specialized English and the specialty knowledge cannot promote each other obviously. The fusion of them is poor. In bilingual course, specialized English and specialty knowledge have been combined so that they can promote each other. In embedding bilingual teaching, it is encouraged for students to apply the specialized English they have already learned. Hence, to some extent, specialized English and specialty knowledge can be integrated.

Suggestions on How to Choose Proper English Learning Approaches for Different Students

Provided there is no ill effect on the normal teaching of profession courses, it is encouraged to popularize the embedding bilingual teaching since it maybe make students acquire specialized English expressions in core specialty courses and own the application ability. On this basis, according to the development targets of students and their own demands, specialized English course or bilingual course should be set up selectively.

For students who will pursue a master degree, it is necessary and important to possess strong ability of reading English scientific paper and writing. Both of them can be effectively improved through

specialized English course. From other two specialized English acquisition approaches, it is hard to make students get adequate training. As to students who would like to work directly after graduation from college, application ability of specialized English is important to help them realize the professional software application as well as read English product instructions and achieve any other work goals. In bilingual course, specialized English is related to specialty knowledge students are learning and can directly promote professional study and exercise as a language tool.

The Case Analysis about Choosing the Proper Teaching Approaches

The proper approaches should be chosen depending on the students' development targets. In Tianjin University of Technology and Education, there are two different kinds of class organizations. One of them is ordinary class and another is outstanding teacher-training class which aims to cultivate teachers for vocational education in order to make them become outstanding teachers and leaders after few years[6]. The students in ordinary class can choose different curriculum modules between education module and technology module according to their own development goals. The authors deem that outstanding teacher-training class and the education module are targeted at teachers training. Accordingly they have higher requirements for students in English literatures reading and scientific papers writing. So it is necessary for them to establish specialized English course. For students chosen technology module, what they eager to learn is the specialized English which is closely linked to specialty knowledge they are learning at the present stage and can directly promote professional study and exercise. Setting up bilingual course could enhance the application abilities of specialized English. Meanwhile, encourage teachers to consist the embedding bilingual teaching in specialty courses. It can compensate the shortcoming that the specialized English learned in bilingual course only aims at a specific subject.

Conclusion

In this paper three teaching ways of specialized English for automation have been compared and analyzed from three aspects. Under the precondition that there is no affecting the normal teaching of specialty courses, it is encouraged to popularize the embedding bilingual teaching. On this basis, according to the students' development targets and their own needs, specialized English course or bilingual course should be set up selectively. Setting up the specialized English course is suggested for someone who has high demands for scientific papers reading and writing. For someone who attaches more importance to the promotion function to specific technology and the application ability in production practice, to establish a bilingual course is more appropriate.

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