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Review Article

Research on College ESP Teaching Mode Based on POA Theory- Take English for Electric Engineering Course as an Example

Tian Dong[1], Jiaqi Cheng[2*]
[1,2]Department of English, School of Foreign Languages, North China Electric Power University, Baoding, Hebei, China

***Corresponding Author**
Jiaqi Cheng

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Abstract: "Gold Class" is a popular word in the teaching research in recent two years. Cai Jigang proposed the specific characteristics of "Gold Class" in 2018, and pointed out a new way of thinking for the construction and development of foreign language teaching. As a highly prized teaching method in China, Production-Oriented Approach (POA) shows many advantages. In order to combine POA with ESP courses better and then achieve the goal of "Gold Class" and effective teaching, this article try to build the teaching mode of ESP courses based on POA. This article takes the "English for Electric Engineering" course as an example, and interprets the practice process from several aspects such as input materials, motivating section and enabling section. In addition, this article also includes the evaluation and reflection of the constructed teaching mode.

Keywords: POA, ESP, Gold Class, English for Electric Engineering.

INTRODUCTION

The concept of "Gold Class" was firstly put forward by Wu Yan, the director general of the Department of Higher Education of the Ministry of Education, in the International Forum on Higher Education Annual Meeting of 2018 on November 3th, 2018. Then, Cai Jigang summarized the characteristics of "Gold Class" into five aspects, and emphasized the orientation to The Belt and Road Initiative, integration of knowledge and ability, the ability to innovate, the elimination of outdated concepts and the challenge of developing students' abilities [1]. In order to achieve the goal of "Gold Class", teachers should make a detailed plan on teaching objectives, material selection, teaching design, and also make regular introspection after each class.

When Qiufang has put forward the Production-Oriented Approach (POA)[2] in foreign language teaching. Based on the actual situation of education in China, this approach puts forward innovative strategies and methods to Chinese foreign language teaching mode.

As a teaching method with Chinese characteristics, POA can provide methods and theoretical guidance for the production and development of "Gold Class" in Chinese universities. Based on the theory of POA, this article analyzes the teaching mode of ESP classes.

THEORETIC FOUNDATION

The POA theory was put forward firstly by Professor Wen Qiufang. Then, it was revised and improved by Wen's team, and finally developed into a creative teaching method with distinctive Chinese characteristics. The specific steps and theoretical basis are as follows.

Production-Oriented Approach

Innovation of POA runs through the whole theoretical system. Its teaching concept includes three parts: learning-centered principle, integration of learning and application and whole-person education. The learning-centered principle was put forward on the mixture of "student-centered theory" and "teacher-centered theory". This principle mainly aims at the rebellion of the student-oriented teaching mode. It places students and teachers in the

position of serving for learning [3], and emphasizes the importance of learning itself in class. This method approves that the focus should not be on who is playing the leading role, but on learning contents and choices for teaching methods and teaching modes according to the contents.

The integration of learning and application emphasizes the close relationship between theoretical knowledge and practical application, which seamlessly connects "output" and "input" and reduces the "inert knowledge" acquired by students; while the theory of "whole-person education" adheres to the viewpoint of humanistic teaching by holding the view of "people-oriented", aiming at cultivating talents with high comprehensive quality, which set higher requirements for teachers' selection on production tasks, input materials and teaching activities.

As for teaching hypoarticle, "output drive" is listed as the primary link, which advocates that output is not only the driving force of language learning, but also the goal of language learning. The dual role of output has been emphasized in the system.The ideological basis of this hypoarticle rooted in the traditional Chinese book *Xueji*[4]. It puts forward a positive circle mode, which emphasizes the incentive role of output in learning, and subversively puts forward the three-step mode of "output-input-output". The "input facilitation" link, which assists with the first link, aims to achieve the purpose of "output" and "input" coordination, and emphasizes the important role of teachers in the "input" part. The"selective study" link avoids the limits of the traditional learning mode of "one size fits all", and emphasizes that the limited attention should be paid to the limited focus instead of dispersing the focus [4]. And the"promoting learning by evaluation" is a favorable application of the theory of "the integration of learning and application" in teaching concept. In the practice of teaching, this hypoarticle will be mainly implemented by the"teacher-student cooperative evaluation" to achieve the purpose of promoting learning by evaluation.

According to the teaching hypoarticle, POA sets up three sections of motivating, enabling and assessing, and advocates teachers as the intermediary in teaching activities. This approach also emphasizes the role of teacher in many aspects, such as in presenting the communicative scene in the motivating section and in guiding the students to process the input materials in the enabling section. All of these show the objection and improvement of the "student-centered theory".

The Application of POA in Classes

Since Wen proposed POA in 2015, foreign language teachers have been actively applying and practicing this teaching method in classes. By October 7th, 2020, 180 search results can be found in "academic journals" for the search keywords "Production Oriented Approach" and "application" on CNKI, among which 143 search results can be accounted for "English Teaching", taking the vast majority of search results. In the exploration of English teaching, most teachers apply POA to specific English courses, such as English audio-visual and oral course, English reading course or Business English, in which 16 articles are included in English for special purpose courses. The proportion of POA's application in ESP courses is relatively small.

102 search results can be found on CNKI for the search keywords "English for Electric Engineering". Among them, the translation mode and teaching approach of this course takes a vast majority. There are only 5 articles focused on the study of the teaching mode of the course combined with ESP, accounting for about 5%. However, among the research results, there is no research on the application of POA in this course. The results show that the application of POA in English for Electric Engineering course is worth exploring.

TEACHING OBJECTIVES OF ENGLISH FOR ELECTRIC ENGINEERING COURSE

The main purpose of ESP is to improve students' practical skills in specific fields in English. Compared with other courses, ESP courses are targeted and directional, and the teaching objectives of which are mainly aimed at students' ability in output and application. According to Hutchinson and Waters, ESP can be divided into English for Science and Technology (EST), English for Business Economy (EBE) and English for Social Science (ESS) [5]. This article aims to set up a EST course, which is English for Electric Engineering. According to the previous research, there are several problems in the setting of ESP curriculum:

1. The setting of the course mode is not distinctive and innovative enough due to the lack of reformation[6];
2. The participation of students and the initiative of teachers, as the leading role, need to be changed;
3. The input materials of curriculum adaptation are not targeted enough, which is contrary to the characteristics of the curriculum itself and the efficiency of the whole curriculum needs to be improved [7].

Therefore, in order to meet the goal of "Gold Class", teaching segments with strong pertinence, high innovation and strong participation need to be

set. The objectives of this course are divided into communicative goals and language goals. Language goals are subordinated to communicative goals according to POA. In this way, it is more accurate and targeted to set the specific teaching goals, which is very suitable for ESP teaching.

As for the English for Electric Engineering course, the target group is undergraduate students majoring in electrical engineering. The teaching objective of the whole course is as follows:

1) To make students master the characteristics of professional English;
2) To improve the reading comprehension and communication ability of students;
3) To enlarge students' specialized vocabulary.

In addition, the setting of sub-objectives of the course should follow the rules of POA. For example, if the communicative goal of the course is to be proficient in English conversation with customers when visiting the power plant, the language goal should be to master the relevant vocabulary of the power plant and conversation skills.

PRACTICE PROCESS

The practice process is mainly designed according to the "teaching process" of POA, which is divided into "selection of input materials", "setting of motivating part", "setting of enabling part" and "setting of assessing part". In our practice, the concept of "teacher as intermediary" is fully implemented to guide students to carry out learning activities effectively.

Selection of Input Materials

The teaching concept of "integration of learning and application" requires students to do "selective learning" in POA. Accordingly, teachers' choice of input materials must be decided by the overall curriculum characteristics and teaching design. We will take English for Electric Engineering course as an example, and choose undergraduates of electric power university as subjects. In order to avoid the inflexibility and simplification of teaching materials, the input materials will be composed of official textbooks and optional materials.

The textbook *English for Electric Engineering* is one of the series of teaching materials for ESP in colleges and universities planned by the Ministry of Education in China. The teaching contents include professional reading, translation, writing and oral communication skills. The textbooks need to be set as the basic input materials to guarantee the integrity of the whole course. In addition to the textbooks, teachers also need to satisfy students' specific needs with more targeted screening on input materials. Therefore, the auxiliary input materials need to be appended.

Based on the above, the input material should be divided into two parts. The first part is the official textbook, and the second part is the supplementary materials created by the cooperation between teachers and students, which means, the basic range of these materials is set by teachers, and the specific content is decided by students. Firstly, the teacher selects academic journals with impact factor greater than 10 in IEEE, and then chooses 3-5 articles by keyword selection according to the output goal of each class. The academic journal articles are set as the preview task for students before class. Students are required to share in class by groups after the task is set for one week. The number of groups per week depends on the number of students in the class. The content of the presentation includes the meaning and use of rare words, the use of grammar, common sentences and related professional knowledge. This process is supervised by the teacher in the early stage of the whole course, and can be completed by the student group later. The target language is the main way of presentation, which can also improve students' speaking ability at the same time. The presentation time should be limited between 5-8 minutes. During the presentation, all students are required to listen and learn carefully, because the content presented by the groups is also regarded as input material. To sum up, auxiliary materials also include two parts, one is the authoritative journal articles selected by teachers, and the other is the content selected by students based on the articles given by teachers. The two parts are unified, which can improve students' reading ability and also expand the range of input materials.

"Selective learning" can be shown in the above steps because the teacher set the basic range of supplementary materials according to the output goals. In this way, teachers can give full play to their professionalism and dominance, thus avoiding the randomness of input materials. Students can decide the specific content by them, which means students' main role in teaching activities, can be guaranteed. In this way, teachers can realize the goal of targeted teaching. In addition, teachers' gradual loosening of supervision also caters to the purpose of reducing the "scaffolding" role of teachers in the enabling section, which can improve students' independence and also help to cultivate students' autonomous learning ability as well.

Setting of Motivating Part

In the motivating section in POA, teachers need to present the communicative scene and

interpret the tasks and objectives of the course. In order to make the course more creative, teachers can use multimedia tools to attract students' interest. The teaching plan given in this article is to make micro-lecture by using interactive videos.

Interactive video is a newly emerging product in China. The main difference between it and the traditional video is that it adds options for the audience. Interactive video provides a new option for teachers to make micro-lectures. Teachers can choose to use software tools for interactive video production, such as Epub360, or use interactive video websites. For this class, teachers can use interactive video to set practices for the end of micro-lecture.

The theme of the communication scene is mainly based on the third unit of the textbook "Communicative Conversation". The conversations include visiting the power plant, introducing electrical principles, negotiation, reporting, technical exchange and consulting, etc. Teachers should update the setting of scenes and topics in time to match output tasks.

As for the micro-lecture, we take the topic of "visiting the power plant" as an example. The language objective is "to make students master the specialized vocabulary and sentence patterns of power plant", and finally achieve the communicative goal of "being proficient in using English to work in power plant". First of all, teachers should divide the whole micro-lecture into three parts: introduction, main content and practice. In the part of introduction, teachers can use related video clips by downloading from the network to attract students' interests. In the part of main content, teachers need to reconstruct the communicative scene and present the main learning content to students, while students need to follow the lecture and learn. This scene of "visiting the power plant" can be composed of two speakers, one as a staff member of the power plant, and the other as a visitor. The visitor's task is to raise questions about the power plant, while the staff member's task is to introduce the general situation, major machines and their working principles of the power plant to the visitor. The example is as follows.

Example:

Visitor: What is this huge machine?

Staff member: This is the steam turbine. The huge circular elements revealed inside are the turbine blades. This kind of machine uses steam instead of air or water to turn giant fan blades. These fan blades are mounted on a central shaft. The high-pressure steam from the boiler is pumped into the turbine casing. As it's forced over the fan blades, the steam spins the blades and drives the shaft.

When reconstructing the scene, teachers should emphasize and explain the key words and grammar in the conversation. For example, when introducing the steam turbine in the power plant, the spelling and pronunciation of related words such as "turbine" need to be marked in the video. When introducing the principals, teachers should provide appropriate pictures or videos to help students understand better.

POA divides the output tasks into two categories. According to the time, they are divided into two types: in-class and extra-class; according to the difficulty, they are divided into review tasks and transfer tasks. The review tasks are the sub-tasks that accomplished by students in class, while the transfer tasks are the new tasks that accomplished by students using their new abilities [2].

Therefore, in the practice, teachers should provide some sub-tasks (or review tasks) that can be completed immediately in class, and inform students of the teaching objectives. In this part, teachers can provide some pictures and make students choose the right expression by using options provided by interactive videos, or make students choose the correct items according to the description, etc. These practices can improve students' reading and thinking ability. After class, teachers should provide transfer tasks or homework to students according to POA. Creativity should be the primary element in transfer tasks. Teachers can provide tasks with open-ended, such as making students design dialogues using relevant vocabulary by themselves according to what they have learned in class, and search the Internet for more information.

Setting of Enabling Part

There are three steps in the process of enabling section in POA: teachers describe the output tasks; students learn selectively under the guidance of teachers; students accomplish the tasks under the guidance of teachers. According to the composition of output tasks proposed by POA, students should choose at least one aspect from the content, language form or discourse structure to complete the output task.

Therefore, in this section, the primary problem is to make students fully understand the content and characteristics of each output task. Only in this way can students make correct choice from the different aspects. We still take "visiting the power plant" course as a example. First of all, in terms of content, in order to make students fully understand the background and relevant

information of the task, the input content of this course should include bilingual introduction of the power plant. Secondly, in terms of language form, teachers should highlight and explain the key words, sentences and grammar when describing tasks. For example, in this course, we need to highlight the names of the machines and key verbs in the principle of power generation and related fixed collocations. At last, in the aspect of extracting discourse structure, it is suggested that teachers should focus on students' initiative and their own characteristics. In the early stage, students can imitate the dialogue presented by teachers, but in the later stage, students are encouraged to create their own dialogues, which means that they can use appropriate language forms to replace or even optimize the dialogues provided by teachers. Students are also encouraged to show their achievements in class. This competitive form can provide external motivation other than tasks, which can enhance students' learning ability.

Setting of Assessing Part

The assessing section in POA consists of two parts, one is immediate assessing, the other is delayed assessing. Teachers can make immediate assessing by random quiz in class or questions asked by students.

As for the delayed assessing, it is very distinctive that the evaluation criteria are jointly formulated by teachers and students. POA pays attention to the particularity and subjectivity of students, and believes that the successful classes depend on the consensus between teachers and students. Therefore, the assessing system of this course should be completed by both teachers and students. The evaluation system should be composed of group presentation in class, output tasks accomplished by individuals, quiz scores and the final output task.

The detailed design steps are as follows. The score of group presentations should be composed of three parts: teachers' subjective evaluation (40%), students' scoring (30%), and question answering (30%). The evaluation standard should be set by teachers and students in the form of questionnaire or deliberation at the beginning of the class, so as to avoid the huge gap between the scores of teachers and students. Individual output tasks and daily performance are scored subjectively by teachers, and the specific proportion depends on teachers.

Innovation ability should be regarded as an important scoring proof in the final output task. The specific proportion can be scored by 40% (teachers), 40% (students), and 20% (questions and answers). After learning, students' understanding of the teaching design will be improved, so it is advisable to increase the proportion of students' scores in the final examination. The presentation form of the final output task is scene reconstruction in groups. Both teachers and students should give targeted feedback to the presentation after the final class.

CONCLUSION AND ENLIGHTENMENT

The feedback-taken section can be improved. In this section, the feedback is took from questionnaires and interviews. However, neither method is innovative. In the subsequent course settings, teachers can use multimedia aids to collect students' feedback, such as using some online teaching apps, to realize efficient and accurate data collection.

Pay attention to the linkage with other courses. The ESP courses emphasize the flexible use of professional knowledge, thus it would be very helpful for students if we integrated ESP courses into relevant professional courses. In the practice, teachers can expand the range of learning tasks and integrate the tasks set in the ESP courses into the professional courses to form polymerization effect and make the school education more systematic.

The proportion of online and offline courses need to be adjusted. Xie Jia has proposed that it is necessary to take MOOC resources and applicability into consideration [8]. Among the problems, the proportional distribution of online and offline courses is worth noting. Thus, we think that in the practice section, teachers should make the fixed proportion dynamic according to the students' learning feedback, and finally find the best proportion that is most suitable for students' learning.

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