

Analysis on Professional Development of English for Specific Purposes Teachers at a Medical University in China: Problems and Strategies

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Abstract

The acceleration of economic globalization and world integration has greatly promoted the development of English for Specific Purposes (ESP). In China, institutions of higher education bear the heavy responsibility of cultivating ESP professionals. And the professional development of ESP teachers is closely related to the quality of ESP professional cultivation. Therefore, it is particularly important to pay attention to the professional development of ESP teachers in universities. In view of this, this article takes the professional development of ESP teachers in universities as the research theme, ESP teachers from a medical university in China as the main research object, and questionnaire survey as the data collection strategy to investigate the structure of teaching staff, industry experience and training, teaching, scientific research, and self-identity of ESP teachers, etc. Based on this, the professional development problems of ESP teachers in the medical university are summarized and the development strategies are proposed. Through analysis, this article finds that ESP teachers face many difficulties and problems in the process of their professional development: the need to optimize the structure of teaching staff; the Lack of industry experience and the need to improve awareness of participating in training; the unsatisfactory teaching effect; the relatively narrow research field; the low sense of self-identity, etc. In response to the above problems, this article proposes some practical strategies: optimizing the structure of teaching staff; strengthen the training awareness and industry experience; expand the research field; increase policy support for ESP teachers, and so on. This article aims to contribute to the professional development of ESP teachers to enrich the professional development theories, and help the policy makers and teacher educators understand the needs of ESP teachers to better promote their professional development.

Keywords: English for Specific Purposes, Teacher Professional Development, Problems and Strategies, Medical University, Higher Education

Introduction

Since its emergence in the 1960s, English for Specific Purposes (ESP) has gained an indisputable and widely accepted position in both theoretical and practical aspects of ontology research and curriculum teaching abroad (Elks & Johnson, 1994). According to Hutchinson and Waters (1987), ESP refers to English courses related to a specific profession or discipline, designed according to the specific goals and needs of learners, such as tourism English, medical English, business English, etc. In recent years, the higher education in China has gradually paid attention to the development of ESP. General English is no longer the main focus of English teaching in Chinese universities, and the focus of English teaching in universities will shift to ESP teaching (Sun, 2024). It can be seen that ESP is gradually becoming the mainstream of English teaching in the 21st century. The Outline of National Medium and Long-term Professional Development Plan in China (2010-2020) proposed that universities should cultivate a large number of international compound professionals with international perspectives, understanding of international rules, and the ability to participate in international affairs and competition. The professional development of ESP teachers is closely related to the quality of cultivating compound English professionals in universities (Cai, 2023). It can be seen that one of the key factors for the success of ESP teaching is the development of ESP teaching staff. Currently, ESP teaching in China is still in its early stages of development, and most ESP courses in universities are undertaken by general English teachers (Sun, 2022). Although some universities have hired external experts and introduced relevant professionals to promote ESP teaching reform, the main force of ESP teaching is still general English teachers. ESP teachers are different from general English teachers, they are called "practitioners". The professional development of ESP teachers is an important aspect of research on ESP. Studying the current situation of ESP teachers in China has practical significance. Therefore, this article conducts a questionnaire survey on 40 ESP teachers at a medical university in China to understand their professional development. Based on this, it summarizes the problems in the professional development of ESP teachers and focuses on proposing corresponding development strategies.

Literature Review of Research on ESP Teacher Professional Development

Research abroad

Since the rise of ESP teaching, research on teachers undertaking ESP courses has always been a hot topic (Shawer, 2010). Research on ESP teachers in foreign countries (compared to China) mainly focuses on five aspects: teacher roles, teacher qualities, problems in teacher development, suggestions for teacher development, and teacher training.

Research on the role of ESP teachers

Shavelson and Stern (1981) believes that ESP teachers should play the following roles in teaching: facilitator, organizer, proposer, coordinator, and friend. Hutchinson and Waters (1987) tends to refer to ESP teachers as "specialized practitioners". British scholars Dudley-Evans and St. John (1998) also agreed with this statement. In addition, Dudley-Evans and St. John (1998) believed that competent ESP teachers should actively play the following five roles as well: traditional teachers, curriculum designers and textbook writers, researchers, collaborators, testers and translators.

Research on the Quality of ESP Teachers

Wahaibi and Tuzlukova (2023) believed that ESP teachers should possess the following nine basic skills: analyzing teaching language and situations, evaluating textbooks and other teaching resources, evaluating students, designing learning ability goals, designing and interpreting teaching plans, designing teaching strategies, writing teaching materials, organizing teaching, and evaluating teaching objectives. British scholars Hutchinson and Waters (1987) also believed that ESP teachers should first possess the abilities and levels required by English teachers, and then actively learn ESP-related knowledge, understand the relevant theories and principles in the ESP field, and be aware of the knowledge they have learned. In a sense, Hutchinson and Waters (1987) prefer ESP teachers to become students who are curious about ESP and eager to learn.

Research on the Problems in ESP Teacher Development

Burns (1999) listed a series of difficulties and problems encountered by ESP teachers in their professional development process, including weak time planning, limited communication with professional content teachers, lower status than general English teachers, limited communication with general English teachers, and a lack of respect from students towards ESP teachers.

Research on the Suggestions for ESP Teacher Professional Development

Li (2022) compared ESP teaching with general English teaching and suggested that ESP teachers should collaborate with professional content teachers in teaching, and may also collaborate with students if necessary.

Research on ESP Teacher Training

In recent years, foreign researchers have increasingly focused on ESP teacher training, exploring the necessity and effectiveness of training courses from different perspectives. Some researchers e.g., Cai et al (2021) have proposed the scientificity and feasibility of the design plan for ESP teacher pre-employment training. Some researchers e.g., Jiang (2020) mainly studied the training needs of ESP teachers. Some researchers e.g., Deng (2020) have conducted research on the effectiveness of ESP teacher training courses. There are also some researchers e.g., Wang (2022) mainly studied the evaluation of ESP training programs.

Research in China

The research on ESP teacher development in China is relatively late. Most researchers in China analyzed the professional development problems and difficulties caused by the personal limitations of general English teachers in universities, and proposed strategies for transformation and development. A few researchers Guo (2001) have proposed development strategies from the perspectives of college English teachers, universities, and society.

Yang (2018) put forward some opinions on how general English teachers can prepare for their transformation in advance: first, they need to reflect on themselves, find the specialty that suits them, and then prepare according to the type that suits them, whether to become a cooperative or independent ESP teacher. Jiao & Liu (2019) explored the professional development of ESP teachers from both theoretical and practical perspectives, and proposed a phased transformation development model from general English teachers to ESP teachers. And the significance of this model was analyzed from the perspectives of ESP teachers,

professional content teachers, enterprises, and universities, and the prerequisites for the successful implementation of this model were discussed. Li (2019) proposed that school-based teaching and research is an implementation approach for good professional development of ESP teachers. Chen (2020) pointed out that general English teachers lack sufficient psychological preparation and confidence in the transformation towards ESP teaching direction, and there is no clear direction and method. In response to many such difficult problems, Chen (2020) proposed feasible solutions during the transformation process. For example, universities should increase the training of English teachers, enhance their teaching staff, and the country should also carry out examination reforms to adapt to the reform of the English curriculum. Zheng (2022) analyzed the demand for ESP teachers, the current development status of ESP teachers, and the feasibility of ESP teacher development. The feasible ways for the development of ESP teachers mainly involve ESP teachers' own knowledge reserves, market research, practical ability, teaching ability, and other aspects.

Research Design

Research method and Content

This article mainly adopts quantitative research methods. A questionnaire survey was conducted on 40 ESP teachers from a medical college in China to understand the structure of their teaching staff, industry experience and training, teaching, scientific research, self-identity, and so on. The questionnaire was adopted from the mature scale validated by (Xu et al., 2020). A total of 40 questionnaires were distributed and collected, with the response rate of 100%. The number of valid questionnaires is 40, with the effective rate of 100%.

Research Aim

This article aims to investigate and understand the status quo of professional development of ESP teachers at a medical university in China, find out the problems that ESP teachers encounter in their professional development, and provide practical and feasible strategies for the problems.

Research Questions

This article focuses on two important questions:

- (1) What are the current problems in the professional development of ESP teachers at the medical university?
- (2) What are the solutions to the problems that arise in the professional development of ESP teachers at the medical university?

Research Results

The need to optimize the structure of ESP teaching staff

This article first focuses on the investigation of the structure of ESP teaching staff, which specifically involves the age, professional title, and academic degree of ESP teachers. The results showed that there are the following problems in the structure of ESP teaching staff at the medical university.

Unreasonable Age Composition

Table 1

Age composition of ESP teachers

Item	Age	Number of ESP Teachers	Proportion to the Total Number of ESP Teachers
age composition	25 and below	1	2.5%
	26-30	3	7.5%
	31-35	20	50.0%
	36-40	10	25.0%
	41-45	3	7.5%
	46-50	2	5.0%
	51-55	0	0.0%
	56 and above	1	2.5%

According to the above table, it can be seen that the above table that the age range of ESP teachers is relatively large, covering the youth stage, middle-age stage, and elderly stage. However, the age of ESP teachers is mainly concentrated between 31 and 40 years old, and there are very few middle-aged and elderly teachers over 40 years old. That is to say, young ESP teachers make up a large proportion of the ESP teaching staff, and the age structure is not very reasonable.

Low professional title

Table 2

Professional title composition of ESP teachers

Item	Professional Title	Number of ESP Teachers	Proportion to the Total Number of ESP Teachers
professional title composition	professor	1	2.5%
	associate professor	5	12.5%
	lecturer	24	60.0%
	teaching assistant	10	25.0%

According to the above table, it can be seen that the main professional titles of ESP teachers are lecturers (60.0%), and with 25% of teachers serving as teaching assistants. The proportion of professors and associate professors is very low, especially professors, which can be said to be very small (only accounting for 2.5%). Therefore, from the above statistics it can be inferred that the professional title of ESP teachers at this medical university is relatively low and needs to be improved.

Low Academic Degree

Table 3

Academic degree composition of ESP teachers

Item	Academic degree	Number of ESP Teachers	Proportion to the Total Number of ESP Teachers
academic degree composition	bachelor	22	55.0%
	master	18	45.0%
	doctor	0	0.0%

According to the above table, it can be seen that more than half of ESP teachers in this medical university have bachelor's degrees (55.0%), and the proportion of master's degrees is relatively small (45.0%). There are currently no ESP teachers who have obtained doctoral degrees. Therefore, from the above statistics it can be inferred that the academic degree of ESP teachers is relatively low and needs further improvement.

The lack of awareness of participating in training and industry experience*The lack of awareness of participating in training*

Table 4

ESP teachers' understanding of the necessity of participating in training or further education

Item	Choices	Number of ESP Teachers	Proportion to the Total Number of ESP Teachers
the necessity of participating in training or further education	very necessary	5	12.5%
	necessary	10	25.0%
	unnecessary	22	55.0%
	indifferent	3	7.5%

According to the above table, only about 37.5% of the 40 ESP teachers in the medical university believe it is necessary to participate in ESP-related training or further education, while more than half of English teachers believe it is not necessary to participate in ESP related training or further education (55%). And there are even 7.5% ESP teachers that do not care about this issue. Therefore, from the above statistics it can be inferred that ESP teachers lack awareness of participating in ESP related training or further education, which needs to be improved.

The Lack of Industry Experience

Table 5

ESP teachers' industry experience of participating in enterprises

Item	Choices	Number of ESP Teachers	Proportion to the Total Number of ESP Teachers
industry experience	frequently participate	0	0.0%
	sometimes participate	4	10.0%
	occasionally participate	0	0.0%
	never participate	36	90.0%

According to the above table, among the 40 ESP teachers, only 4 ESP teachers participated in the enterprise on-the-job training for one semester, accounting for only 10.0% of the total ESP teachers. Among them, one ESP teacher went to the tourism management department in a city in A province to learn about tourism management and participate in practical activities; two ESP teacher went to a pharmaceutical company in a city in S province to work on translating drug instructions, translating contracts, and building the company's English website. The remaining 38 ESP teachers have never participated in any form of on-the-job training and have no industry experience, accounting for 90.0% of the total number of ESP teachers. Therefore, from the above statistics it can be inferred that the industry experience of ESP teachers is quite lacking.

Single ESP teaching methods

Table 6

The usage of teaching methods by ESP teachers

Item	Choices	Number of ESP Teachers	Proportion to the Total Number of ESP Teachers
ESP teaching methods	focusing on lectures	30	75.0%
	focusing on cases	4	10.0%
	focus on questioning	3	7.5%
	focus on translation	3	7.5%

According to the above table, among the 40 ESP teachers, 30 of them believe that they mainly use the teaching method of lectures in class, accounting for 75.0% of the total number of ESP teachers. 4 ESP teachers focus on cases as their main teaching method, accounting for 10.0% of the total number of ESP teachers. 3 ESP teachers mainly use questioning as their teaching method, accounting only for 7.5% of the total number of ESP teachers. 3 ESP teachers mainly use translation as their teaching method, accounting for 7.5% of the total number of ESP teachers. As shown in table 6, the teaching methods of ESP teachers are mostly traditional lectures, which are relatively single. And the single method directly leads to unsatisfactory teaching results. Therefore, ESP teachers need to introduce diverse methods in the classroom to further enhance their abilities and skills in ESP teaching.

The narrow scientific research field and weak awareness of reforming teaching content***The narrow scientific research field***

According to statistics, 40 ESP teachers have led or participated in 103 scientific research projects at all levels and types in the past decade, and have published 112 papers of various types. Most of these scientific research projects are related to general English teaching, English and American literature, and linguistics, whereas there is little research that truly involves ESP courses and ESP teachers. Among the 40 ESP teachers, only 6 have a small amount of ESP-related research achievements. 2 ESP teachers has four ESP-related research projects and 4 ESP teachers have published ten ESP-related papers in journals. Table 7 shows the statistical results and forms of research achievements of ESP teachers in the medical university over the past decade.

Table 7

Statistical results of scientific research achievements of ESP teachers

Item	Forms	Total Number of Achievements	ESP-related Achievements	Number of ESP Teachers	Proportion to the Total Number of ESP Teachers
scientific research achievements	scientific research projects	103	4	2	5.0%
	papers	112	10	4	10.0%

According to the above table, it can be seen that the scientific research achievements of ESP teachers are mainly concentrated in the field of general English, with little involvement in ESP. Therefore, from the above statistics it can be inferred that the scientific research field of ESP teachers is relatively narrow and needs to be expanded.

The weak awareness of reforming teaching content

Table 8

ESP teachers' understanding of the role of scientific research in promoting teaching

Item	Choices	Number of ESP Teachers	Proportion to the Total Number of ESP Teachers
the role of scientific research in promoting teaching	great effect	4	10.0%
	certain effect	9	25.0%
	little effect	24	60.0%
	no effect	3	7.5%

According to the above table, 60.0% of ESP teachers believe that scientific research has little effect on promoting teaching. A very small number of ESP teachers (7.5%) believe that scientific research has no promoting effect on teaching. Only 25.0% of ESP teachers believe that research has a certain promoting effect on teaching. 10.0% of ESP teachers believe that research can greatly promote teaching. Therefore, from the above statistics it can be inferred that ESP teachers have insufficient understanding of the role of scientific research in promoting teaching. ESP teachers need to enhance their awareness of reforming teaching content combined with the scientific research.

The low sense of self-identity of ESP teachers

Table 9

ESP teachers' level of understanding of ESP

Item	Choices	Number of ESP Teachers	Proportion to the Total Number of ESP Teachers
the level of understanding of ESP	extremely understand	1	2.5%
	basically understand	8	20.0%
	little understand	27	67.5%
	not understand at all	4	10.0%

According to the above table, it can be seen that among the 40 ESP teachers at the medical university, 67.5% of ESP teachers believe that they have little understanding of ESP. 20.0% of ESP teachers believe that they merely have a basic understanding of ESP. Some ESP teachers (4 teachers) believe that they have no understanding of ESP at all. Only one ESP teacher thinks he is very familiar with ESP. Therefore, from the above statistics it can be inferred that ESP teachers believe that their understanding of ESP is very insufficient.

Table 10

ESP teachers' understanding of their professional knowledge in assisting competency in ESP courses they teach

Item	Choices	Number of ESP Teachers	Proportion to the Total Number of ESP Teachers
the level of professional knowledge	more than sufficient	0	0.0%
	fully sufficient	0	0.0%
	basically sufficient	4	10%
	insufficient	36	90.0%

According to the above table, it can be seen that among the 40 ESP teachers, 90.0% of ESP teachers believe that their professional knowledge level is insufficient to be competent in the ESP courses they teach. Only 10.0% of ESP teachers believe that their professional knowledge level can basically meet the needs of ESP courses. No teachers believe that their professional knowledge is fully sufficient in teaching ESP courses. No teachers are confident that their professional knowledge is beyond sufficient in ESP teaching. Therefore, from the above statistics it can be inferred that ESP teachers believe that their professional knowledge level is still insufficient.

Table 11

ESP teachers' understanding of student evaluation on ESP teaching

Item	Choices	Number of ESP Teachers	Proportion to the Total Number of ESP Teachers
ESP teachers' understanding of student evaluation on ESP teaching	high evaluation	0	0.0%
	general evaluation	30	75.0%
	low evaluation	30	25.0%

According to the table above, 75.0% of the 40 ESP teachers believe that students do not have a high evaluation on them. 25.0% of ESP teachers believe that students may have low evaluations on them. None of ESP teachers think that students have a high evaluation on them. Therefore, from the above statistics it can be seen that ESP teachers have a relatively low sense of self-identity.

Strategies for the Professional Development of ESP Teachers

In response to the above-mentioned problems in the development of ESP teachers, this article focuses on proposing the following practical and feasible strategies.

To optimize the structure of ESP teaching staff

Firstly, strictly control the admission of college English teachers, and adjust the proportion of age, education level, knowledge structure, and professional titles appropriately. When formulating the recruitment plan for English teachers, it is necessary to fully consider the current structure of teaching staff of universities, plan reasonably based on actual needs, and make specific regulations on the age, education level, knowledge structure, and professional titles of the hired teachers, such as appropriately relaxing the age limit, increasing requirements, and introducing high-level professionals with high education level and professional titles. Meanwhile, ESP is different from general English in that it not only focuses on basic English skills such as listening, speaking, reading, writing, and translation, but also has various special requirements for a specific post or post groups. For example, in business English, teachers are required to understand basic business concepts and processes, master certain business English teaching methods, and grasp the development trends of business English. Only by establishing strict professional qualification standards, improving the teacher admission system, and regulating the professionalism, technicality, and standardization of the recruitment of English teachers in universities, can the basic quality of English teachers, especially ESP teachers, be truly guaranteed from the source (Peng, 2020).

Secondly, strengthen pre-service training for ESP teachers and enhance their awareness of ESP. Due to the fact that ESP education not only meets the requirements and standards of general English education, but also has its own uniqueness due to the requirements of different positions or position groups, which emphasizes practicality, professionalism, and direction. The requirements and standards for ESP teachers are not only related to academic qualifications, but more importantly, they are regulated from a professional perspective. Therefore, the pre-service training for ESP teachers should be targeted and purposeful, with stricter requirements for training content and curriculum structure (Wang & Gong, 2020).

Thirdly, adopt internal training and external recruitment measures to enhance the overall education level and professional titles of ESP teachers. Universities need to actively guide and encourage ESP teachers to enhance their self-development awareness. In addition to teaching, they should also work hard to learn, actively pursue further education, and improve their academic qualifications. At the same time, they need to make full use of opportunities for further education, earnestly learn from mentors, actively study, combine teaching practice experience to improve ESP teachers' own scientific research ability and level in order to strive for more conditions for professional title evaluation. Universities should also appropriately reduce the workload of ESP teachers who actively participate in professional title evaluation, and provide policy support, material and spiritual support when necessary. In addition to cultivating teachers with high professional titles and high educational backgrounds internally, universities can also actively introduce English professionals with high professional titles and high educational backgrounds (preferably with achievements in ESP) based on the actual needs to promote the development of ESP teaching staff.

To keep up with the times and constantly update teaching modes and methods

ESP teachers should update their educational theories, not only with profound academic foundation and professional subject matter knowledge, but also with advanced information technology means and timely updating of teaching modes (Tian et al., 2022).

Firstly, it is necessary to gradually transform the traditional teaching mode of "cramming" with ESP teachers as the main subject into a student-centered discussion style. ESP teachers need to encourage students to actively participate in classroom activities and transform collective listening style classrooms into personalized ones. ESP teachers can also link language components together and combine them with specific contexts to enhance students' ability to flexibly apply language (Wang et al., 2021).

Secondly, it is necessary to adopt a diversified evaluation system to enhance students' self-learning ability and comprehensive cultural competence. ESP teachers should pay attention to cultivating students' ability to use English as a language tool to solve professional problems and complete work tasks during the teaching process. For example, for the content of contract signing in business English, teachers not only require students to master common professional English vocabulary and understand the content of contracts, but also to learn how to draft contracts, understand contract signing procedures and handling methods for breach of contract. Teachers can use the Internet to search for real cases, and let students participate in the discussions and get exercise in practice.

In addition, ESP English teachers can also improve their ESP sensitivity by participating in conference training, school-based training, short-term training, mid-career studies, or on-the-job training in enterprises, laying a good foundation for becoming qualified ESP teachers.

The purpose of ESP teaching is not only to enable students to master English language knowledge, but also to enable them to learn the practical skills required by the post or industry. Therefore, building a high-quality team of ESP teachers has become the key to creating the characteristics of higher education. The Ministry of Education in China pointed out in the Opinions on Promoting the Development of Teaching Staff in Institutions of Higher Education that the proportion of ESP teachers in institutions of higher education should reach

80%. However, in reality, most universities have less than 20% (Qi et al., 2020), and there are also some cases where general English teachers serve in related ESP courses. Therefore, ESP teachers should choose relevant ESP courses according to their own foundation, interests, hobbies, strengths and the actual needs of universities, make full use of the advantages of libraries, the Internet and other resources, and strive to study, so that they can grow into real ESP teachers as soon as possible and make a contribution to the ESP teaching at the universities where they are teaching.

To build a university-enterprise cooperation platform and enrich ESP teachers' industry experience

Some researchers (Qing, 2015) believed that universities can establish a platform for university-enterprise cooperation, allowing ESP teachers to leave the campus and enter the enterprise for short-term training and on-the-job training, enriching their industry experience, and understanding the latest knowledge and development trends in the industry. This can be combined with English as a language tool to synchronize teaching with the industry.

Firstly, universities can strive to develop various university-enterprise cooperation models to enrich the industry experience of ESP teachers. In addition to dispatching ESP teachers to enterprises for on-the-job training, universities can also collaborate with enterprises through five modes to increase industry learning opportunities for ESP teachers. The five modes are: university-enterprise cooperation based on industrial parks, university-enterprise joint construction of technology research centers, team joint construction led by group centers, university-enterprise joint construction of secondary colleges, and university-enterprise joint construction of student studios (Liu, 2015).

Secondly, universities can actively introduce qualified personnels and increase learning opportunities for ESP teachers. At the same time as ESP teachers enter the enterprises, relevant departments of universities should actively establish a "bring in" talent development mechanism, establish on-campus and off-campus training bases as needed, hire industry and enterprise experts as part-time teachers or guidance teachers for experimental training in universities, or give lectures to provide training for ESP teachers. In addition, universities can also hire experienced ESP teachers from peer universities to guide or concurrently serve on courses.

To expand the scientific research field of ESP teachers

ESP teachers in universities should not only improve their English teaching abilities, but also pay attention to enhancing their scientific research abilities. More and more experts and scholars believe that ESP teachers engaging in scientific research can enhance their professionalism. Conducting scientific research means that ESP teachers are confident in their ability to construct knowledge and improve their practices (Wang, 2023).

Firstly, ESP teachers need to have a correct understanding of the relationship between teaching and scientific research. This article believes that scientific research can play a certain promoting role in teaching, especially in ESP teaching. ESP teachers participating in scientific research can broaden their horizons and enable themselves to have a deeper understanding of teaching content. During teaching, ESP teachers also inadvertently pass on these contents

to students, enabling students to better understand the knowledge they have learned. Secondly, ESP teachers can also find more and better teaching methods in scientific research. Using these methods in teaching will make the classroom colorful and enjoyable for students to accept. ESP teachers will also feel relieved and accomplished, and will work harder in future work, forming a virtuous cycle. Once ESP teachers become researchers, they are no longer just mechanical knowledge transmitters, but will gradually grow into active educational participants and even pioneers who can conduct scientific research in ESP teaching practice (Wang & Wang, 2015).

Secondly, ESP teachers need to strive to seek scientific research development ways. Scientific research is not unattainable. As long as ESP teachers can collect, organize, and analyze some of the problems they encounter in their teaching activities, they will master the first-hand information for future scientific research. ESP teachers can also expand their knowledge and understand the latest development in ESP by reading a large amount of ESP-related literature. They can humbly seek advice from experts, renowned scholars, and other ESP teachers to understand ESP and improve their scientific research capabilities related to ESP. The decline in social competitiveness of single English professionals has led to the development of interdisciplinary integration becoming a strategic choice for the development of English language major, which inevitably leads to the expansion of scientific research fields of English as a foreign language. ESP teachers should actively promote the integration of English subject and other disciplines, and promote the expansion of scientific research field into interdisciplinary fields (Zhou, 2023). This integration and expansion require ESP teachers and professional content teachers to conduct collaborative scientific research and to be in line with the actual situation of universities.

More and more ESP researchers are inclined towards studying “school-based action”. School-based action research refers to the use of scientific and reasonable research methods under normal teaching conditions to study the problems encountered in actual teaching in schools. According to Cai et al. (2021), school-based action research, along with school-based curriculum, school-based training, and school-based management, embodies the main idea of “based on the school, through the school, and for the school”. In this case, the research is more realistic and effective, and its results can be directly used to detect teaching effectiveness or actual problems encountered in teaching. This kind of research integrates teacher teaching and scientific research, without delaying each other but promoting each other. ESP teachers can utilize school-based action research to improve their ESP teaching abilities and expand their scientific research areas, thereby enhancing their scientific research level.

To develop school-based textbooks and participate in school-based training

In order to better achieve the goals of school-based curriculum, ESP teachers and other relevant teaching personnel can start from the actual situation of universities to develop and write school-based textbooks according to the characteristics of students, current educational conditions, scale, goals, and specialty, and further reflect the characteristics of universities. ESP-related textbooks require compilers not only to have a unique knowledge reserve and ability in a certain industry, understand the development trends of the industry, but also to have high English proficiency, so as to connect ESP teaching perfectly (Eva, 2022). Therefore, in the development of such textbooks, ESP teachers should work together to

complement each other's strengths and weaknesses, and jointly create practical school-based textbooks. During the cooperation process, ESP teachers will improve their knowledge and abilities to a certain extent. Before writing textbooks, ESP teachers should carefully understand the curriculum concept and objectives, study the curriculum standards and relevant curriculum theories, and fully understand the university educational conditions and characteristics as well as the characteristics of the students who will be about to use the textbooks. For ESP teachers, this is also a process of promoting personal professional growth. Developing school-based textbooks is beneficial for promoting the development of ESP and that of ESP teachers at universities.

ESP teachers can also participate in school-based training and develop together with universities (Su & Xiao, 2023). The European Association for Teacher Education defines "school-based training" as on-campus training activities initiated and regulated by schools, aimed at meeting the work needs of each teacher in schools. School-based training plays a crucial role in promoting the professional development of ESP teachers in universities. Firstly, school-based training should be combined with practical problems encountered by ESP teachers in higher education, integrating their teaching, learning, practice, and scientific research into a whole, which can improve the overall quality of ESP teachers. Secondly, school-based training is closer to the actual situation of ESP teachers, guiding them to develop unique learning plans based on different personalities and needs, so as to solve related problems encountered in ESP teaching faster and better. ESP teachers can choose to participate in appropriate school-based training based on their actual situation to accelerate their professional development.

To increase attention and support for the development of ESP teachers

The development of teachers is closely linked to the development of universities. The development of universities provides fundamental guarantees and driving support for the professional growth of teachers. Only with the continuous development of universities can there be space and possibilities for teacher development. On the contrary, the development of teachers also affects the development of universities, and the professional growth of teachers will further promote the sustainable development of universities. ESP courses will become increasingly popular in most universities in China (Deng, 2021). Therefore, the development of ESP teachers should also be given more attention. This article believes that while improving their professional development awareness and promoting their professional growth, ESP teachers at universities also need the attention of relevant institutions and the support of students.

To treat ESP teachers in the right way

Firstly, universities can provide policy support for ESP teachers, such as exam reform, teacher training, incentive mechanisms, etc.

In most current universities, practical proficiency exams such as the National College English Test Band 4 (CET-4) and Band 6 (CET-6) have almost become the bywords of college English. From the beginning of learning English to entering university, students seem to have been busy dealing with various English exams and rushing for certificates. However, when they truly enter society and enter the workforce, they realize that they are unable to solve practical problems in their work in English. For example, they cannot understand English product

introductions, cannot explain various details of foreign investment negotiations, cannot read English contract terms, cannot translate machine operation instructions, and so on (Lin, 2020). Why can't years of English learning be applied to practice? This article argues that English learning during student years is mostly focused on exams, mostly written tests, with little involvement in spoken language and its practical application. Over time, students' English proficiency can only be reflected in the exam papers. Therefore, the English examination system and methods in China urgently need to be reformed. Some universities include whether students have passed the CET-4 and CET-6 exams as criteria for student evaluation, and even directly relate them to their graduation certificates. When evaluating ESP teachers, the passing rate of their students in the CET-4 and CET-6 levels is used as a prerequisite for excellence evaluation. This to some extent encourages ESP teachers to prioritize college English knowledge in their actual teaching, whereas neglecting the transmission of professional content knowledge. Moreover, ESP teachers cannot fully immerse themselves in ESP teaching and scientific research.

Universities should encourage ESP teachers to actively lead students to participate in various ESP competitions and other activities. Of course, exam reform should not only stay at the university level, and universities cannot complete it alone. The state and society should also provide strong support. In addition, universities should provide appropriate support for ESP teachers in terms of teacher training. ESP teaching is still in the development stage in Chinese universities, and ESP teachers need further growth (Qiu et al., 2024). Going out for further education and training is one of the ways to promote the professional development of ESP teachers. The development of ESP teachers is not mature, and compared to other content teachers, they need to further expand their knowledge. This article finds that some ESP teachers believe that their teaching work is only different from that of general English teachers in subject, but their teaching methods are of no difference. This concept stems from a lack of correct understanding of ESP teaching theory. Universities can regularly hold short-term ESP training classes, invite ESP experts to give lectures, and purchase a large number of ESP books to help ESP teachers systematically and comprehensively understand the nature, teaching principles, and connotations of ESP and master the teaching methods of ESP.

Meanwhile, universities can also establish long-term incentive mechanisms guided by incentive theories. Incentive mechanisms can be divided into two types: positive incentive mechanisms and negative incentive mechanisms. For ESP teachers who have important achievements and outstanding contributions in ESP teaching and theoretical research, positive incentives (material and spiritual rewards) will be given, such as issuing certificates of honor and bonuses. On the contrary, universities can provide appropriate negative incentives to ESP teachers who unreasonably refuse to comply with arrangements and complete work on time, or do not take action in ESP teaching. Universities can encourage teachers to develop positively through criticism, deduction of partial allowances, and other means. Negative incentive mechanisms can easily lead to negative emotions among teachers, and universities should pay attention to grasping the scale. When assigning teaching tasks, universities need to fully consider the personal abilities, personality traits, and strengths of ESP teachers. In addition, universities can actively encourage ESP teachers to take mid-career studies and pursue courses related to their respective majors or interests. While improving academic qualifications, ESP teacher will expand the professional knowledge required for teaching.

Secondly, universities can establish an electronic portfolio evaluation system to help ESP teachers reflect, and promote the dynamic development of ESP teachers.

In most universities in China, they assess and evaluate teachers through peer evaluation, student evaluation, and other methods. However, this evaluation method is difficult to fully and objectively view the teaching process and professional development of teachers. In the United States, most universities use electronic teaching portfolios (Murphey & Chen, 2007). Electronic teaching portfolio is a digitalized teaching portfolio, which is an organized presentation of relevant information collected by teachers to improve teaching effectiveness during the teaching process. Its content mainly includes showcasing teachers' teaching philosophy and achievement materials, such as basic information of teachers, personal understanding of teaching by teachers, reflective materials, achievement proof, and so on. At present, the popular online log in the education field is BLOG, which is based on the Internet as a carrier. Teachers only need to write and submit daily blog every day. It provides functions such as article archiving, query and retrieval, and supports online communication with multiple media formats for input (Liu, 2008). This is a beneficial supplement to electronic portfolios, where ESP teachers can establish a BLOG based on the courses they teach, record daily work experiences, excellent teaching methods used in teaching, and even fragments of their own learning or thinking, dynamically recording their professional growth process. BLOG also has online discussion and sharing functions. Teachers can share their own insights and experiences, and people who are interested or in the same learning field can leave comments to participate in discussions, breaking the limitations of time and space and learning from each other in the online space. The establishment of an electronic portfolio evaluation mechanism for ESP teachers helps to combine reward and punishment evaluation with process evaluation, and helps ESP teachers observe, supervise, reflect, and adjust their teaching process, forming a positive dynamic development trend (Fatemeh, 2023). Due to the need for electronic portfolio to rely on computer networks and multimedia technology, ESP teachers face certain technical difficulties, and relevant departments of universities should provide corresponding technical support.

To properly treat student evaluation on ESP teaching

The implementation of "student evaluation on teaching" activities in universities can reflect their educational philosophy of student subjectivity. Through student evaluation on ESP teaching, universities can monitor the teaching quality of ESP teachers, and ESP teachers can also identify their own problems and shortcomings in teaching so as to timely improve teaching methods and modes, thereby improving their teaching quality.

This article believes that in order for universities to enable students to objectively and fairly evaluate ESP teachers, it is necessary to establish a complete and scientific evaluation system, detailed evaluation standards, and especially targeted evaluation of ESP teachers. Its content involves the teacher's classroom teaching (including whether the teacher attends and leaves classes on time; whether the spoken language is fluent; how to interact with students during teaching; whether the student's subjectivity is fully utilized; whether the teaching process is serious, etc.), the teacher's professional ethics (whether the teacher cares about students; whether they respect student's personality; whether they patiently teach students; whether they teach with integrity, etc.). In addition, students should also be asked to evaluate the teaching effectiveness of ESP teachers. That is, whether the knowledge and skills taught by

ESP teachers can help students solve practical problems in learning (such as whether the content of contracts taught by business English teachers can help students understand English contracts, clarify the contract signing process and precautions for contract signing; whether the listening strategies and skills taught by medical English audiovisual and oral teachers can help students better understand the relevant content in listening materials, etc.). On the basis of scientific evaluation standards, universities should try to choose a wider range of students when evaluating teaching, allowing all students (at least the majority of students) of ESP teachers to participate in the evaluation. If conditions permit, universities can also include graduates as members of the student evaluation team. Through the feedback from graduates, ESP teachers can have a clearer teaching direction and purpose. ESP teachers can adjust their teaching content, choose more appropriate teaching methods, and improve their teaching level and effectiveness.

Next, the relevant departments of universities should provide training to the students who participate in the evaluation before the evaluation, so that they can understand the significance, purpose, methods, content, role, and issues that should be noted in the evaluation. This will enable students to have a comprehensive and right understanding of the evaluation. Universities require students to evaluate ESP teachers and their teaching activities in order to obtain real and comprehensive information, so that ESP teachers can understand problems and shortcomings they are not aware of, adjust teaching direction, understand students' actual needs, and enable students to achieve better learning outcomes. Only objective and fair evaluation on teaching can achieve the goal and give full play to the true and effective role of student evaluation. At the same time, student evaluation on teaching can enable students to exert their subjectivity, reflecting and ensuring the equal status of students and teachers in terms of individuality. In addition, student evaluation can also supervise the teaching of ESP teachers, providing a certain external driving force for their serious teaching. Ultimately, it is still to ensure the quality of teaching for ESP teachers and provide high-quality teaching for students. Students should carefully read the evaluation rules and precautions in teaching evaluation, and truly make objective, fair, and effective evaluations on ESP teachers based on actual situations.

The relevant departments of universities should treat the results of student evaluation in the right way. Firstly, in order to avoid the arbitrariness and emotional factors of a small number of students in evaluating teaching, universities need to scientifically process the evaluation data. Student evaluation on teaching belongs to the category of subjective evaluation. According to the international rules of subjective evaluation, it is common internationally to take the average value after removing 15% of the scores before and after (Xu et al., 2020). Secondly, this article believes that if universities merely use this as an important condition for evaluating ESP teacher performance, it may lead to serious consequences of ESP teachers deliberately pleasing students. ESP teachers do not pay attention to teaching quality any more, but only focus on harmonious coexistence with students and establishing a harmonious teacher-student relationship, which will disrupt the normal teaching order.

Similarly, ESP teachers should approach student evaluation results with a positive attitude. ESP teachers should believe that most students can objectively evaluate them and their teaching activities, and should take students' opinions and suggestions seriously and make timely adjustments. For individual extreme words, it is important for ESP teachers to carefully

consider and reflect and first identify the reasons within themselves, truly achieving the objective of correcting what is wrong and maintaining what is right.

Conclusion

This study mainly investigates the professional development of ESP teachers in a medical university in China through the questionnaire survey. The results are analyzed and discussed, and the professional development difficulties of ESP teachers are summarized, and then development strategies are proposed. After reviewing relevant literature, this article found that research on the professional development of ESP teachers in China is mainly focused on vocational colleges. However, research specifically on the professional development of ESP teachers in medical universities is very rare, and medical universities are also an important constituent part of institutions of higher education in China. Especially in the post COVID-19 pandemic era, medical universities shoulder the responsibility of cultivating international and compound medical English professionals. Therefore, this article explores the professional development of ESP teachers at a medical university in order to provide suggestions for the development of professional development theory for ESP teachers at medical universities in China. The theoretical contribution of this article to existing knowledge lies in its beneficial supplement to the professional development theory of ESP teachers at medical universities in China. This article provides new insights and understanding on this field through systematic investigation and analysis. These new insights cover the professional needs of ESP teachers, teaching practice experience, scientific research and supportive policies, and are of significance for improving the training and development system of ESP teachers at medical universities.

Furthermore, the practical contribution of this article is that it provides operable suggestions and guidance for medical universities in China to improve the professional development of ESP teachers. By gaining a deeper understanding of the needs and challenges of ESP teachers, school administrators and educational decision-makers can develop targeted training plans and provide resource support to improve the quality of ESP teaching and the professional level of teachers. In addition, the findings of this article can also provide practical strategies and methods for ESP teachers, helping them better respond to the professional needs and learning characteristics of medical university students, thereby improving teaching effectiveness and student satisfaction.

Overall, this article not only expands stakeholders' understanding of ESP field in theory, but also provides useful reference and guidance for improving the ESP teaching level and teacher professional development at medical universities in practice. The findings of this article are conducive to promoting the development of ESP teaching staff at medical universities, improving the quality of medical English education, and making positive contributions to the cultivation of high-quality medical professionals.

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