

# Preliminary Exploration of All-English Teaching in Pathology for International Students

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## Abstract

With the development of medical education in China, the education of international students has gradually become an important part of China's higher education. Pathology is a bridge course connecting basic medicine and clinical medicine, and is a compulsory course for international medical students. In order to improve the quality of all-English teaching in pathology, according to the characteristics of international students and the discipline characteristics of pathology, this paper discussed the problems existing in the pathology teaching of international students, such as language communication, teacher training, textbook selection, teaching content arrangement, etc., aiming at exploring ways to solve these problems and improve the learning effect of international students from teaching practice.

## Keywords

Pathology, Teaching Quality, International Education

## 1. Introduction

In recent years, with the deepening of the opening to the outside world and the development of medical education in China, the international exchange and cooperation of medical talents have been increasing [1]. As the language of international communication, English is widely exposed to all aspects of our society, the issue of medical education and international integration is prominent in front of us. With the internationalization of education, clinical medicine and scientific research, it is imperative to carry out and popularize all-English teaching.

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Since 2010, Yangtze University has been recruiting undergraduate students in clinical medicine from India, Ghana, Pakistan and other developing countries. The curriculum and teaching plan of these international students are the same as the requirements of five-year clinical medicine undergraduate in China. Since the enrollment of international medical students in Yangtze University, the Department of Pathology has been undertaking the teaching of pathology courses for international students. In the course of teaching practice, we have made some beneficial explorations and attempts on the teaching content and teaching methods of pathology, from which some experiences and lessons have been gained and some inspirations have been obtained. However, all-English teaching is a new educational mode, the work is still in its infancy, and there are many difficulties in teaching mode, teacher staff training, selection of teaching materials and teaching management. As the backbone course of medical education, pathology is an important basic course in medical education. Therefore, it is of great practical significance to explore the effective ways to improve the teaching effect of pathology in English in various aspects to promote the internationalization of higher medical education in China.

Based on the teaching practice of pathology in Yangtze University and the main problems existing in teaching in recent years, this paper summarizes some relevant experiences on how to improve the effectiveness of pathology teaching for international students.

## **2. Problems in Pathology Teaching for International Students**

### **2.1. Language Problems**

International students in our school are mainly from India, Pakistan and other countries. English is the official language of these countries, so most of the students have a good foundation in English and can read and write well. However, the spoken English of international students in these countries has different degrees of local accent, which is quite different from the standard “American” or “British” English, this difference increases the language communication barriers between teachers and students. Therefore, the language problem is the main factor affecting the teaching effect of international students.

### **2.2. Problems in Textbooks Selection**

As the material carrier of teaching content and knowledge transmission, textbooks have a direct impact on the progress and quality of teaching in colleges and universities. In-depth study of textbooks and careful preparation of lessons are the premise of improving teaching quality. Due to the influence of education system, history and culture, there are great differences between foreign pathology textbooks and Chinese current pathology textbooks in knowledge structure and organizational form [2]. At present, there are few English textbooks of pathology in China, most of which are bilingual textbooks, The content is too con-

cise with few illustrations, which cannot meet the need of preparing for the course in English teaching. Furthermore, with the continuous development of medical science, emerging immunopathology, ultramicro pathology, molecular pathology and so on have penetrated into every field of pathology, therefore, for international students, how to choose textbooks with appropriate depth and difficulty has become a key issue.

### **2.3. Problems in Teaching Content Selection**

For international students, they are mainly engaged in the profession of doctors after returning home and need to pass the medical practitioner examination in their own country. The syllabus and content requirements of the medical practitioner examination in different countries are different, moreover, some diseases have geographical and climatic characteristics, some of the common and frequent diseases in China may be rare in countries such as India. For example, colorectal cancer is a common malignant tumor in China, and the incidence of which is increasing year by year, however, it is rare in India, and the incidence is only 1 - 3/100,000 [3]; while some neglected content in pathology teaching in China is still the focus of pathological study for international students. This determines that international students must choose the teaching content and teaching requirements that meet their actual situation.

### **2.4. The Characteristics of International Students Themselves**

Due to the differences in living environment and cultural background, international students have their own unique characteristics compared with Chinese students [4]. Laziness and casual habits are common, late arrival and absenteeism occur from time to time. In addition, the classroom learning habits of international students are a little different from those of Chinese students, they will ask various questions at any time in class and discuss them with each other, which will easily disrupt the teachers' thinking and teaching rhythm and make it difficult to guarantee the teaching effect. Moreover, students from different countries have great differences in knowledge level and learning ability, which increases the difficulty of improving the classroom teaching effect of international students.

## **3. Strategies in Solving Teaching Problems and Improving the Teaching Quality for International Students**

### **3.1. Construction of the Teaching Staff**

We will cooperate with experienced and interdisciplinary teachers in forensic pathology, pathophysiology, oncology and other multidisciplinary teaching teams for pathology to break the traditional discipline boundaries. Teachers of various disciplines cooperate sincerely to select teaching content, promote the connection and penetration of basic medical knowledge and clinical medical knowledge in the teaching process, and realize the integration of basic and clini-

cal teaching. At the same time, invite internationally pathologist and professor to guide and train team members. Team members can also go to all-English teaching colleges and universities with national key discipline platforms to observe and study.

### **3.2. Formulation of the Syllabus, Selection and Compilation of Teaching Materials**

In order to ensure the teaching quality, the department of Pathology has formulated a complete teaching syllabus and teaching plan according to the requirements of the undergraduate syllabus of clinical medicine in China and the requirements of medical education in the countries where international students come from. According to the syllabus and plan, and in combination with Chinese teaching habits, "Text book of Pathology", published by Science Press, was adopted as the teaching textbook. This textbook is adapted from the original medical English textbook "Concise Pathology", the content and chapters are in line with Chinese teaching habits, but maintain the style of the original book. In addition, "Robbins and Cotran Pathologic Basis of Disease", the original English pathology textbook, serves as a reference textbook for all-English teaching in pathology.

In addition to traditional pathology textbooks, the abundant teaching resources on the Internet are also indispensable for all-English teaching in pathology. Teachers can make full preparation for lessons and obtain some multimedia materials or pictures through the network pathology resources, so as to enrich and interest the teaching content and help students to master relevant knowledge. Students can directly click the link to the website of foreign medical colleges through the network platform to learn the relevant knowledge of pathology and experience the wonderful content of foreign pathology.

### **3.3. Determination of Scientific and Reasonable Teaching Objectives and Teaching Content**

Pathology, which belongs to both basic medicine and clinical medicine, is a bridge course connecting basic and clinical education, and occupies a very important position in medical education. Pathology teaching for international students has its own unique teaching purposes and requirements, and the teaching content must be consistent with the teaching purpose and requirements of pathology in the medical practitioner syllabus of the country where the international student come. Therefore, we have determined the teaching objectives of pathology for international students according to the school's educational orientation and international development plan: The total credit hours of pathology course for international students in clinical medicine are 128, including 96 theoretical hours and 32 experimental hours. The theoretical teaching content is divided into general pathology and systemic pathology. General pathology explores and explains the development of basic pathologic mechanisms without detailing the additional specific changes occurring in different organs, while in

systemic pathology, the pathologic mechanisms discussed in the general pathology section are related to the various organ system. In addition, the teaching content should also be combined with the characteristics of the climate, region and disease spectrum of the country where the international students come, and focused on the pathological changes of common and frequently occurring diseases. For example, malaria, typhoid fever and dysentery are less common in China, but more common in African countries; gastrointestinal malignant tumors are common in China, but rare in Pakistan [5]. Therefore, the teaching content should be adjusted according to the disease spectrum of the student's own country.

### **3.4. Understand the Characteristics of International Students and Teach According to Their Aptitude**

The course "Pathology" is for full-time international students majoring in clinical medicine, these students come from Asia, Africa, America and other countries, with different cultural backgrounds and knowledge structure, which leads to the difference between the knowledge level and individual quality of students. In addition, compared with Chinese students, international students have a relaxed learning environment, poor discipline and poor self-control since childhood. They often express their personal opinions freely in class, and ask questions at any time, which enlivens the classroom atmosphere and strengthens the interaction between teachers and students to some extent, however, it often causes chaos in the teaching process and even leads to disruption of the teaching plan [6]. Therefore, in the all-English teaching in pathology, we have adopted various forms of teaching methods.

#### **3.4.1. Changes from Traditional Pathology to a "Student-Centered" Teaching Model**

We are gradually transitioning from a "teacher-centered" teaching mode to a "student-centered" teaching mode that promotes students' active learning. Under the background of clinical medical professional certification, we take the educational concept as the guide, take students' learning and growth as the center, emphasize students' "self-learning", and fully mobilize the enthusiasm of international students.

#### **3.4.2. Development of PBL Teaching Method**

PBL teaching method originated from medical education in the 1950s was founded by Barrows, an American professor of neurology. The PBL teaching method is very different from the traditional subject-based teaching method, it places special emphasis on students' active learning and advocates new teaching methods of problem-based discussion and heuristic teaching [7]. In the teaching process, we will select typical clinical cases and design comprehensive questions of moderate difficulty before theoretical study of each systemic disease in pathology according to the requirements of the teaching syllabus and students' learning basis. Students are required to fully preview the pathology textbooks

according to the questions raised by the cases, and collect relevant materials through the library, the Internet, and the reference material. Then in class, students work in small groups to discuss, show each other the information they have collected and answer questions, at last, teacher will make a final summary.

### **3.4.3. Introduction of Clinical Case Discussion into Experimental Teaching**

The practice teaching of pathology plays an important role in students' understanding and recognition of pathological features, including gross and histological pathological changes. Experimental course is a very important practice of pathology. Only when theory and practice are well combined can better teaching effect be achieved. The Department of Pathology of Yangtze University has adequate disease specimens and histological sections, which ensures the teaching effect of the experimental course. In the teaching process, we will collect typical clinical cases matching the content of each experiment, conduct detailed discussion and carefully observe their morphological changes, so as to help students better grasp the knowledge.

## **4. Conclusion**

In the teaching practice in recent years, the Department of Pathology of Yangtze University has accumulated some teaching experience. We know that the teaching of international students should not be confined to the mode of Chinese teaching, but should be flexible and adaptable in the teaching process. However, our all-English teaching practice in pathology is still in its infancy, and there are still many shortcomings, how to improve the quality of all-English pathology teaching still requires us to continue to explore in practice. In the future teaching, we will gradually summarize the all-English teaching model in pathology suitable for international students, and further promote the development of medical education for international students in China.

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## **Conflicts of Interest**

The authors declare no conflicts of interest regarding the publication of this paper.

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