

Characteristics of undergraduate Education in Biomedical Specialty in Australia and its implications for Health Inspection Education

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Abstract: Under the request of the global internationalization process, the various specialties in the field of medicine in our country have carried out many kinds of exploration of international medical talents training. However, the application of cross-cultivation of laboratory medicine and other related fields in undergraduate education is still in the exploratory stage. This paper, taking Biomedical Specialty of Deacon University in Australia as an example, compares and analyzes the educational system of this specialty. The characteristics of teaching methods, educational contents and hardware and software facilities and the differences between the teaching methods and the health inspection specialty in China. Understanding these differences will undoubtedly promote the internationalization process of medical students' education, and then promote health examination in China. The development of empirical education.

Keywords: Health test; biomedicine; higher education

In recent years, with the increasing process of global integration and the increasing demand for intercountry medical talents, the training of medical students in China is facing more and more challenges. International teaching provides an effective solution to this challenge. In the past 20 years, many medical colleges and universities in China have carried out various models of international medical education, including courses that are in line with international standards, and bilingual teaching in the course of medical studies. Various forms of Short-Term Foreign Exchange between Teachers / students / Fellows Liu, and foreign schools on the basis of mutual recognition of credit on the basis of joint training^[1,2]. However, most of these attempts are concentrated in the field of clinical medicine or basic medicine. As a new field of laboratory medicine, the internationalization education of hygiene testing is still in the exploratory stage^[3].

Laboratory medicine in the twenty-first century continues to integrate the latest technological achievements in modern life sciences and make efficient use of computers and automated programs, A series of high-tech and information systems, such as library analysis of bioinformatics, are used as the supporting points for the development of science^[4,5]. With the development of many new technologies, the connotation and extension of laboratory medicine have changed^[6]. As a new field of laboratory medicine, health examination should learn from the development experience of developed countries^[7,8]. The author of this article is Deacon Australia For example, the characteristics of Australian biomedical specialty in education system, teaching content, teaching method, teaching facilities and so on are analyzed. To find a way to make up for the shortage of undergraduate education in health inspection in China^[9,10]. In this paper, the characteristics of Australian biomedical teaching system and the teaching system of health inspection in China are compared and analyzed as follows.

1. Educational system and teaching concept

Biomedicine is a 3-year undergraduate major at Deacon University in Australia. After three years of undergraduate

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studies, students can obtain a Bachelor of Medicine degree in Biomedicine. Huanjing and Jiankang, infection and immune technology and medical biotechnology four different directions, students can choose according to their different interests and hobbies to choose different majors to study. The enrollment target of the school is mainly to graduate students of the current high school, there are no too many restrictions on the students who enter the school, you can often see the senior students, but the examination of undergraduate students is very frequent. Also extremely strict, the cultivation of students belong to the "wide entry and strict output" model. Students can choose to continue their studies after graduation. It is more difficult to apply for one year or two master's degree (one year belongs to Honor.). Higher requirements for undergraduate grades and personal abilities, with only a needle for native students; or a job, that is to say, a biological company or other job in the relevant field. Deacon University has three semesters a year, and students are free to choose and arrange safely.

Courses. If the ability is strong, the first two semesters will be able to complete one year of study scores, the third semester will be free to schedule or become vacation; if you are worried that too many courses should not be paid, You can also complete one year of study in three semesters. In this respect, different colleges and universities in Australia are often not the same. Take the University of Curtin as an example, its laboratory medicine is located in the biomedical school of medicine. The major of biomedical science is a 4-year undergraduate course, with two periods of study each year. In general, the week before the first semester of the school year is adapted by students

time Most freshmen will find the resources they need this week. The diversity of semester and academic system in Australia is different from that of undergraduate education in China, which is worthy of reference.

The purpose of Australian undergraduate education is not to train outstanding talents, but to prepare students to become modern workers. This kind of teaching idea with practical as the starting point and employment as the aim makes its education system and teaching way more practical. At the same time, the school charges according to the subjects chosen by the students. If a student does not pass a certain subject, There is only one chance to restudy (full tuition is paid for the course and you have to relearn it from beginning to end), and if you fail to do so, you will be asked to drop out, and even if you are transferred to school, you will be asked to drop out Other Australian schools are not allowed to take this subject again. The combination of high tuition fees and a highly practical educational system, coupled with a strict examination system, is particularly conducive to mobilizing students' autonomous initiative in learning. Students often devote a lot of time to self-study or group discussion after school.

2. Course system and teaching content

The teaching system and content of different universities in Australia are often different. Take Deacon University as an example, its biomedical science basically covers the applied science in the field of basic medicine. From basic biological knowledge to the specific process of a particular disease. In particular, its experimental courses provide students with extensive laboratory practice in related fields, and then ensure that students can meet the diversified professional needs in theoretical knowledge and practical skills.

Its core areas of curriculum include physiology, biochemistry, microbiology, microbiology and immunology, molecular biology and molecular genetics, and microcytosis. Among them, basic chemistry, biochemistry, pharmacology, microbiology, immunology and other basic and specialized courses, no matter which major students choose to learn. Different professional courses also have certain differences. For example: fine cell and molecular biology major courses in cell and genetics, chemistry, fine cell biology Biology, biochemistry, microbiology, molecular biology and human biographies (similar to basic medicine in domestic medicine); The major courses in environmental health are cells and genes, food and nutrition, microbiology, epidemiology and biostatistics, toxicology, Risks to a healthy environment (similar to public health specialties), while the major subjects of infection and immunology include cell and gene, fine cell technology, immunology and hematology, and diagnostics. Microbiology, new Emerging infectious diseases and their prevention and treatment, medical microbiology and immunology; medical biotechnology including gene and genome technology, nanomedicine, sub-diagnosis, medical biotechnology innovation, Cell and tissue engineering.

Australian laboratory and related majors are usually set up in the School of Biology, known as Laboratory Medicine. Comparison of infectious immunity and medical biotechnology in the School of Biology, Deacon University, and

medical laboratory majors in the setting of specialized courses and the direction of employment in China

Similar. They do not have the political, physical education, and medical science courses in basic courses for medical students in China. Instead, they focus strongly on training students' professional skills from the very beginning. For example, they set up immunity in the second grade, and medical immunity in the third grade, so that students in the professional classes have a simple to difficult to learn too. This not only helps students to learn, but also helps students to counterlearn the applied major, and deepens the students' ability in this field. At the same time, they started their first year with a practical course, which is related to reality. Test is a kind of experimental knowledge that many domestic medical graduate students can get into at the stage, and this difference is difficult for many international students to adapt to. This is also worthy of our learning.

In the teaching content, Australia is more than domestic related majors, not strong enough, teachers teach in the classroom than the domestic content is simple and less capacity. The contents taught by different teachers are not all the same. In addition to this, teachers have considerable freedom in arranging examinations for the curriculum. Teachers are free to schedule multiple small tests and adjust the proportion of small tests in the overall curriculum. Strict examinations and tests in class forced students to consult a large number of reference books around the contents of the teacher's class and to study independently to reach the teacher. And the test requirements.

3. Teaching methods and facilities

For international students, they have to pass certain language tests, such as IELTS and TOEFL, before entering undergraduate studies. Without the results of these languages, students will be required to study in language schools for a period of time. After passing the language school tests, they will not be able to enter the grade. In addition to training students in listening, speaking, reading and writing, language schools also provide students with opportunities to adapt to the Australian classroom teaching model. After a few weeks and more weeks of study, Chinese students can enter the undergraduate course after passing the examination.

Undergraduate classes for biomedical majors in Australia are usually divided into two types: theoretical and experimental. The number of students ranges from dozens to hundreds of students. Teachers usually use the mode of explaining PPT. Only students who choose classes have the right to download the teacher's PPT. A large number of students with a laptop brain or tablet with the teacher's PPT synchronous learning. Partly because the Internet is easier, partly because Australian textbooks are often expensive and some students have no teaching materials. It is worth mentioning that all the universities in Australia have achieved full coverage of the wireless network. School teachers and students can access the Internet free of charge through their registered ID numbers, and the teachers of each course have a list of students who will take their own courses during the course. Students only through the authorization of the teacher can carry the corresponding courseware and information. At the same time, each course has its own special online chat room for question interaction and discussion. If students have any problems, they can also interact with the teachers through chat rooms, and some of the teachers' learning resources can be obtained. Materials and all kinds of general knowledge through the network of square transmission. This way greatly improves the efficiency of communication between teachers and students. Teachers are generally less systematic in their classroom instruction than in China. They usually choose something useful or important to talk about, and the knowledge they explain is relatively shallow. A lot of time is to play a role in guiding students to get started, if students want to learn or get high scores in the examination, they also need their own efforts after class.

In addition to the teacher's explanation, there is also the process of students reporting in groups. Example: the teacher assigned the students' lesson questions, and several students first studied a small class problem under the class. However, different students in the class were responsible for explaining different parts according to their own PPT and answering questions from other students. The latter is responsible for filling and articulating the subject. This teaching method not only exercises students' self-study ability, but also helps students to learn together. High ability to work as a team.

Experimental courses are usually conducted in small classes, usually with 1 or 2 senior teachers in one small class. Usually the teacher gives a lecture first, and then the students do exercises according to the teacher's explanation and the

accompanying teaching materials. The experimental course of Australian biomedical major is more demanding than that of domestic undergraduate students. At Deacon University, for example, students make their own tissue sections and dye their own tissues, but in China, teachers usually make films, and students can just observe the report. In their experiment, the students were confronted with various questions, which were answered by the teacher at any time, or straight. Then do demonstration exercises.

In many cases, teachers do not have a unified standard answer, which requires students to play their own initiative, after class to review a large amount of information, in order to complete their own report. Therefore, although there are no specialized literature retrieval courses in undergraduate education in Australia, students have a strong ability to consult literature.

In Australian biomedical laboratory classes, safety facilities are in place. Students must wear a full set of protective equipment, such as protective glasses, hand covers, white coats, etc., and students are not allowed to expose any part of the body. On both sides of the classroom are flush shower heads and eye-washing lavatories in case of danger. The classroom is equipped with a variety of waste storage devices, with a strict experimental waste classification system. They pay special attention to the security of the laboratory, and in the college they are all held responsible by specialized administrative personnel. All these are worthy of reference and study. Yes.

4. Laboratory safety training

There are fewer undergraduate courses in biomedical science at Australian universities than domestic undergraduates, and they have a lot of spare time to use, so in addition to studying, Students interested in scientific research can contact their teachers to participate in scientific research. But it is necessary to pass the school laboratory safety training before the laboratory work. The first step is to go to the school website to read the safety rules and test online. After passing the test, the college will have a special person to train it in theory. After the theoretical training, different equipment will be used in the experiment. Training of equipment Through the training, you can have a training equipment in the room door card. Only with an access card can access to all kinds of equipment be opened. It is more convenient for the experimenter to do the most basic cleaning work, but to put the used test tube directly in the recycling place and take the clean articles from the preparation room.

5. comparison and revelation

Through the understanding and analysis of Deacon University and Curtin University in Australia, this study finds that there is a great difference between the undergraduate education in Australia and the undergraduate education in China. First of all, the purpose of Australian undergraduate education is not to train the elite, but to train practical and practical personnel for the society. The purpose of undergraduate education in our country is to train people who have certain learning ability and thinking ability, grasp the basic knowledge, and can improve or innovate the way of work according to the actual situation after working. Second, different purposes create different sides of education The basic education of Australia and Australia pays more attention to practicability, and the systematic and theoretical nature of the theoretical curriculum is not particularly strong, but is an important content that goes back and forth and gradually deepens into. The actual test needle is more effective, repeat it again and again until the student is proficient in this important skill. The theoretical courses of domestic laboratory majors are more systematic, more close to medicine, and more extensive. Third, the way students are taught in Australia is different from that in China. Students in Australia have more freedom in their studies. The curriculum of students is not very full, so there is more spare time to arrange their own, autonomous learning ability. Domestic students usually listen to the teacher to learn, self-learning ability is weaker than foreign students, but examination-oriented ability is very strong. Fourth, different students need different education systems and methods. If their autonomy is strong enough, the students who are trained by the education methods outside the country will be more adaptable in society. A more competitive mind. But students with weak autonomy are better suited to China's education system Students who receive teaching and education may have a more complete and solid theoretical knowledge system.

By comparison, we can draw the test from the Australian biomedical education, take the long and fill the short, and

further improve the level of the undergraduate education of health inspection in our country. First, define the purpose of undergraduate education. The specialty of health examination requires that the staff in this field have both solid theoretical knowledge and strong ability of application. Therefore, the undergraduate education in our country should strengthen the cultivation of students' practical operation and application ability. In the second place, strengthen the ability of self-cultivation. In the education of students, we should pay attention to cultivating students' enthusiasm and ability to learn independently. Teachers should guide students to study actively in practice, not to learn by sudden attack of examination. At last, strengthen teachers' international field of view and organize international communication and study regularly. Only by improving teachers' teaching ability and level, can the level of undergraduate education be further improved.

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