

Exploration and Practice of Mixed Teaching Mode of Zoology under the Background of Double First Class

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Abstract: With the development of science and technology, great changes have taken place in the mode of talent education and training in China. Under the background of double first-class, there are still many problems in zoology teaching, which hinder the cultivation of innovative talents. In zoology teaching activities, we should break through the traditional classroom teaching mode, combine theoretical teaching with practical teaching, constantly explore new teaching methods and reform schemes, improve students' professional quality, promote students' comprehensive development, and meet the needs of biology students in the new era.

1. Introduction

As a basic course, experimental zoology is very important for cultivating the scientific literacy of Postgraduates of medicine and pharmacy, improving the ability of experimental design and management, and improving practical operation skills. It is also one of the necessary carriers for cultivating top-notch innovative talents in medicine. Therefore, serving the needs of talent training, innovating curriculum teaching mode, optimizing curriculum system design and improving curriculum education effect are the urgent problems to be solved in the “double first-class” construction of pharmaceutical discipline.

2. Problems in the Course of Experimental Zoology

2.1 The Teaching Concept Lags Behind and Does Not Change to the Direction of Cultivating Innovative Top-Notch Talents in Time

The teaching orientation of experimental zoology is vague, and the teaching purpose of cultivating people is not clear. It is generally summarized as social training talents. However, the lack of understanding of the employment needs of the society and the unclear teaching objectives of what kind of people to cultivate lead to the lack of pertinence of teaching methods and means and the low gold content of the curriculum. In addition, there is a lack of integrated thinking of mutual integration and promotion of teaching, learning and application, the teaching behavior is not closely connected with the application party, the degree of mutual docking between the supply and demand sides is not high, the course of experimental zoology is not closely connected with the needs of the scientific research team of graduate students for the experimental quality and ability of graduate

students, and each does its own thing[1].

2.2 The Teaching Mode Does Not Meet the Needs of Cultivating Top-Notch Innovative Talents

Under the background of “double first-class” construction, talent training is no longer a matter of discipline. The cultivation of top-notch innovative talents can not rely on the individual operation of teachers, but requires the collaborative innovation of multiple educational resources. The traditional teaching mode of experimental zoology course is that teachers complete all the teaching processes such as lesson preparation, teaching, question setting examination, marking statistics and so on. From the course preparation to the end of the course, there is neither a helper nor the support of the teaching team[2]. The teachers work alone and lack the mechanism of collaborative innovation, contractual operation and joint training with the students' scientific research team.

2.3 Curriculum Design (System) is Not Scientific Enough and Lacks Mutual Support among Disciplines

The teaching design is mostly teacher centered, without considering the personalized needs of the scientific research team of the graduate school for the course of experimental zoology. In the course design of experimental zoology, there is a lack of communication with the discipline of postgraduates, especially with the scientific research team of postgraduates, and they do not understand and are not familiar with the learning background of the teaching object, such as working environment, research conditions, research direction, experimental projects, experimental technical indicators and experimental skill requirements, and do not know the actual needs of Postgraduates in the process of carrying out research work, As a result, teachers carry out undifferentiated teaching for medical and pharmaceutical postgraduates according to the model of “general education”[3].

2.4 The Teaching Methods Are Old, Single and Conservative

At present, the teaching of experimental zoology is mostly indoctrination teaching, lacking the interaction of “learning”. The whole class is mainly based on the teacher's systematic and detailed explanation, supplemented by multimedia teaching, and most courseware are listed as knowledge points. Experimental zoology is a visual course. For example, the characteristics of different strains of mice are boring to explain only in language, which can not be visualized. Although students are emphasized as the center, in the process of teaching implementation, students' subjectivity is often ignored and one-sided emphasis on indoctrination is not easy for students to accept, which objectively hinders the development of students' personality. The teaching mode is based on the book, and the structural characteristics are “speak listen read remember practice”, resulting in no communication between the supply and demand side and talking to themselves, resulting in the imbalance of the supply side.

2.5 The Connection between Teaching and Learning is Not Close Enough, and There is No Effective Connection between “Teaching” and “Use”

The construction of “double first-class” puts forward higher and more detailed requirements for talent training, but the educational concepts of experimental zoology course, such as teaching objectives, teaching tasks, curriculum design, teaching means and teaching evaluation, still remain in the stage of “popular science” and “credit” teaching. Students choose courses for credit and teachers take classes to complete class hours[4]. The teaching content is not closely related to the

actual research work of students, the pertinence is not strong, the macro is surplus, the micro is insufficient, and it does not connect with the “local atmosphere” of the actual work of the research team.

2.6 Teaching Evaluation is Not Scientific Enough to Correctly Evaluate Students' Learning Effect

Assessment is an important part of teaching, which can reflect students' mastery of the course. However, the examination results of most experimental zoology courses are still examination results plus experimental results and usual results. Because the assessment and evaluation structure is not scientific enough, the proportion of theoretical assessment is too large, and the assessment of practical ability is too few, objectively, students pay more attention to theory than practice. In addition, without the intervention of external educational resources in the teaching process, the curriculum teaching behavior has become a closed behavior with teachers as the origin[5]. Whether the curriculum teaching effect matches the quality requirements of top-notch innovative talents, whether it adapts to the actual research work of postgraduates, and the timeliness of teaching effect cannot be determined without the intervention of third-party evaluation. The existing model of judging learning quality by examination results is difficult to reflect students' comprehensive quality and application ability.

3. Mixed Teaching Model of Zoology under the Background of Double First Class

3.1 Teaching Preparation

In the teaching preparation stage, firstly, accurately locate the curriculum teaching objectives according to the talent training requirements of the new era, and establish the teaching objectives of the organic combination of knowledge, ability and quality. At the same time, in order to facilitate students to clarify the learning objectives, they can learn effectively, and the teaching objectives are divided into sub teaching objectives by levels and stages. Through the design of sub level teaching objectives, it is convenient for students to refer to the design of personal phased learning objectives, and guide students to learn step by step from easy to difficult. In addition, in the preparation stage, the teaching content needs to be divided into three parts: knowledge, ability and literacy, and the three parts of teaching content should be transformed into knowledge module, project module and cooperation mechanism construction module, which should be implemented in different teaching stages of the teaching process[6]. Finally, we need to build a diversified assessment system according to the teaching design, and build a dynamic SPOC course website. The course website construction refers to the modular design of resources, communication and assessment by Pérez Marín and others, so as to realize the integration of learning resources provision, learning communication activities and assessment and evaluation in the process of students' online learning.

3.2 Teaching Process

The mixed teaching mode is carried out by combining online and offline teaching. In the implementation of phased teaching, combined with PBL teaching, SPOC and MOOC online course learning, online test, group project exploration and other forms are mainly adopted before class; Special lectures, special discussions and special reports are mainly used in the course; After class, conduct online discussion and interaction, write project summary and cooperative learning reflection, and finally complete the overall goal of the course and form the process evaluation results[7]. For the comprehensive ability and quality training of normal students, the projects

implemented by PBL in the teaching process not only involve the basic scientific research methods, operation and innovative thinking training of zoology, but also include micro course production, thesis writing and teaching investigation and research.

3.3 Teaching Achievements

For the excellent works formed in the process of PBL teaching, students are encouraged to actively apply for college students' innovation and entrepreneurship projects, participate in various competitions, publish papers, etc. according to the nature and conditions of the works, and display the results inside and outside the school[8]. For the results of social service projects, students are encouraged to directly serve the society through practice and increase students' learning confidence through the above later activities, Cultivate the habit of learning initiative and autonomy, and finally form the habit of lifelong learning.

4. Conclusion

Experimental zoology is a professional basic course for Postgraduates of life science related disciplines such as medicine, pharmacy and biology. It is a comprehensive emerging discipline introduced into China in the early 1980s. Experimental animals are the important foundation and supporting conditions of life science research, and play a more and more important role in many life science research processes. The course of experimental zoology aims to grasp the whole process of animal experiments related to life science research and help students master the basic theories and skills of experimental zoology. Practice has proved that practical participation in teaching and interaction, communication and feedback in the teaching process are important factors to improve teaching efficiency, which should be fully considered in teaching design. At the same time, the construction of a good learning environment plays an important role in improving students' learning interest, stimulating their potential and driving their internal learning power. Therefore, in the teaching reform, we should not only strengthen the construction of curriculum subjects, including teaching contents, teaching materials, teaching methods and examination and evaluation, At the same time, we also need to start from the students themselves, increase the construction of humanistic environment and emotional investment, gradually form a harmonious cooperation and exchange environment, and build a good teacher student and student relationship.

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3) Education Reform Project of Lingnan Normal University: “Research on conservation and Genetics of Water deer in Guangdong province” (Project No. :ZL1913)

4) Education and Teaching Research and Reform Project of Lingnan Normal University in 2020: “Construction and application of Zoology Digital Resources based on the learning situation of Normal University Students in West Guangdong”

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