

Original Paper

Exploration and Practice of Online and Offline Hybrid Teaching Reform in Pharmacology Course

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Abstract

The course of Pharmacology has implemented several rounds of online and offline hybrid teaching mode reform. By implementing the “three-step-six-step learning method”, students’ interest in learning has been effectively mobilized, and their autonomous learning ability has been enhanced. The teaching of pharmacological knowledge, the cultivation of pharmaceutical service ability and the cultivation of professional pharmacists’ quality have been closely combined, which has cultivated students’ professional self-confidence, cast students’ benevolence as pharmacists, improved their professional competence and professional identity, and achieved professional education and moral education.

Keywords

Pharmacology, Pharmacy services, Pharmacist quality, The hybrid teaching

1. Introduction

With the vigorous development of modern education and teaching technology and the Internet, the teaching platform of higher education has been continuously built and online courses have been extensively developed. The traditional teaching model of teacher-centered and classroom-lecture-centered has been changed into a new blended teaching model of student-centered and online teaching platform independent learning. The online and offline mixed teaching mode effectively expands the classroom extension, and the sharing of teaching resources makes personalized learning possible. Therefore, many colleges and universities have vigorously carried out the reform of the online and offline mixed teaching mode (Li, Chen, Wang, et al., 2021).

In this context, the author has implemented several rounds of online and offline hybrid teaching mode reform in the teaching of “Pharmacology”, and explored and practiced how to organically integrate professional education with ideological and political education, and closely combine the teaching of pharmacology knowledge, the cultivation of pharmaceutical service capabilities, and the cultivation of

professional pharmacist quality.

2. Pharmacology Course Objectives

Pharmacology plays an important role in the training system of pharmaceutical talents. It mainly teaches the mechanism of action, representative drugs, clinical application, adverse reactions and prevention and treatment of various drugs. Through the study of this course, students can master the basic knowledge and basic theory of pharmacology, master the common clinical drugs and their mechanism of action, clinical application, dosage, adverse reactions, and understand the basic skills of pharmacology experimental operation. The course focuses on guiding students to learn and master the pharmacological effects, mechanisms of action, clinical applications, adverse reactions, and adverse reactions of commonly used drugs through real cases, animation demonstrations, scenario simulations and other methods precautions, etc., to cultivate students' professional and high-quality pharmaceutical service skills and good professional qualities such as prescription preparation, drug recommendation, rational drug use, etc., and be able to achieve clear consultation, accurate symptom discrimination, appropriate drug recommendation, reasonable medication guidance, clear indication of drug efficacy and contraindications, etc., to help students grow into high-quality skilled professionals who meet the needs of front-line positions such as pharmaceutical production and management enterprises and medical and health institutions.

3. Curriculum and Academic Situation Analysis

The course "Pharmacology" is a vocational ability course for pharmacy majors in our school, which is offered in the third semester, with 96 class hours (30 practical class hours), the prerequisite courses are "Human Anatomy and Physiology", "Pathogens and Immunology", and the subsequent courses are "Clinical Therapeutics" and "Internship".

Traditional pharmacy higher education is mainly a state of classroom teaching, passive listening and passive indoctrination of students (Ma & Yang, 2020). The pharmacy major of our school has not offered courses such as "Biochemistry", "Clinical Medicine" and "Cell Biology", so the students have a weak medical theoretical foundation, and it is difficult to understand the mechanism of action of drugs and other knowledge points. The course of Pharmacology has a lot of theoretical content, and the knowledge of drug classification, representative drugs, mechanism of action, pharmacological action, clinical application, adverse reactions, contraindications, precautions and other knowledge needs to be memorized by students, which is difficult to memorize. There are many kinds of clinical drugs, various dosage forms and complex indications, and it is difficult to accurately recommend drugs and guide patients to use drugs rationally, which is difficult for students to master in a short time.

4. The Reform of the Online and Offline Hybrid Teaching Mode of “Pharmacology” was Implemented

In the teaching practice of “Pharmacology”, the author applies the UMOOC platform and our school’s intelligent classroom teaching platform, and applies the “three-stage-six-step learning method” to carry out the online and offline hybrid teaching reform with students as the main body, integrating the moral feelings of the benevolence of doctors, the professional competency education of pharmacy services, and the professional identity education of pharmacists into the whole teaching process. While enhancing students’ interest and ability in learning, the teaching of pharmacology knowledge, the cultivation of pharmaceutical service ability and the cultivation of professional pharmacist quality are closely integrated, which cultivates students’ professional self-confidence and helps students grow into high-quality technical and skilled talents with good professional ethics, professionalism and comprehensive professional ability who can work in enterprises in pharmaceutical production, use, operation, management, service, research and development.

In the teaching process of “Pharmacology”, the author adopts the “three-stage-six-step learning method”, which completely covers the three stages before, during and after class, and builds a comprehensive ideological and political education platform that integrates value shaping, knowledge transfer and ability cultivation by setting up six teaching links of “first look, second thought, third interaction, fourth tests, fifth evaluation, sixth feedback”.

4.1 First Look: Diversified resources online autonomous learning, focus on intensive teaching in class, the implementation of flipped classroom. Upload courseware, electronic teaching materials, video materials, animations, cases and other diversified learning resources related to the teaching content in the intelligent classroom and the excellent UMOOC platform. Each resource is set with different scores, with clear hierarchy and prominent focus, so as to facilitate students to identify and watch. For example, in the chapter of nervous system drugs, through Chen Kehui, the founder of modern Chinese medicine pharmacology research, lephedrine was isolated from the Chinese medicine ephedra, and its various physiological activities were found and soon used in the treatment of bronchial asthma, hay fever and other allergic diseases, guiding students to have a deep understanding of the mysterious essence and long history of Chinese medicine culture, and helping students strengthen their cultural confidence. At the same time, through Mr. Chen Kehui’s lifelong pursuit of the spirit of “respecting science and helping humanity, helping sentient beings and seeking the well-being”, carrying forward the culture of “compassion, concentration and self-reflection”, the students are deeply grateful for Mr. Chen’s important contribution to the development of modern medical industry and human health in our country, and guide the students to enhance the sense of professional honor.

4.2 Second Thought: Analyze practical drug cases and improve the ability to recommend drugs. According to the specific teaching chapters, the typical drug cases are published, and students are guided to combine the theoretical knowledge of drugs with the practical work of asking patients to recommend drugs, so as to achieve the teaching purpose of “teaching through learning” and “teaching

through doing”. Students analyzed the patient’s disease history in the case, accurately identified the patient’s disease and accurately described the reasons based on medical history, drug use history, allergy history, family history and other information, formulated targeted treatment plans, gave the attending drugs and auxiliary drugs, and gave a comprehensive medication explanation on the usage and dosage of drugs, common adverse reactions, and medication precautions, while carefully answering the patient’s doubts. For example, in the digestive system of drugs, the use of peptic ulcer patients for a long time, repeated protracted cases, to guide students to establish a way of thinking to ask the disease to recommend drugs. It carries out the teaching principle of combining theory with practice and realizes the early unity of teaching and learning. It cultivates students’ ability to apply knowledge, improves teaching quality and enhances students’ vocational competence in pharmaceutical care.

4.3 Third Interaction: Students actively participate in learning after class, teachers and students focus on interaction in class. The hybrid online and offline teaching mode requires students to actively participate in learning to meet the pace needs of classroom learning, which significantly improves students’ independent learning ability, and makes teachers and students more interactive and effective in the classroom. The organic integration of pre-class research, task-driven, visual demonstration, class discussion and other methods effectively urges students to transform from listeners to active participants in learning activities. In the process of practical training, the situation of “asking patients to recommend drugs” in the pharmacy was simulated by role playing, requiring students to be able to make clear inquiries, accurately discriminate symptoms, recommend drugs appropriately, give reasonable medication guidance, and express the indications and contraindications of drug efficacy within the specified time, so as to provide customers with professional and high-quality pharmaceutical services.

4.4 Fourth Tests: In class test to check the important and difficult points, after class test comprehensive inspection. The course of “Pharmacology” has a lot of theoretical knowledge and a lot of content to be memorized, and the practice of asking and recommending drugs is based on theoretical knowledge, in order to help students better grasp, through the classroom test and after-class test, the content to be mastered is reduced to pieces, scattered into each teaching link, to help students master and apply one by one, to avoid confusion and forgetting. The after-class quiz is released in the “Online Test” module of UMOOC after each class, which comprehensively examines students’ mastery of the lesson, enhances students’ motivation for review after class, and deepens students’ learning memory. The free-class test is released in the “Random Test” module of our intelligent classroom platform, which examines students’ mastery of difficult knowledge through exercises that accurately locate key knowledge points to ensure the quality of teaching. As the process assessment of students’ learning effect, the in-class test and the after-class test effectively avoid the situation that students usually do not study and the exam is unexpected, and effectively help students correct their learning attitude, cultivate their sense of integrity, and improve the teaching effect.

4.5 Fifth Evaluation: Comprehensive assessment of teaching effect, learning process assessment and final assessment of the combination of assessment. The study of medical and pharmaceutical related majors is a long-term accumulation process, and basic medical knowledge is a solid foundation for clinical medicine. Students are required to develop the habit of timely learning, persistent learning and lifelong learning, and train solid basic skills (Zhou, Gao, Wang et al., 2019). The final score of the course of Pharmacology includes two aspects: teaching process evaluation and final examination evaluation. With the help of intelligent classroom and the big data statistics function of UMOOC, students' learning track, activity participation and learning points can be viewed in real time during the teaching process. Data such as attendance rate, class activity participation rate, upload resource browsing rate, resource browsing score, number of in-class test participation and average score, number of after-class test participation and average score are used to construct students' process evaluation scores in an all-round way.

4.6 Sixth Feedback: Pay attention to teaching and learning, constantly reflect and improve. Feedback is an indispensable part of the teaching process, which plays an important role in improving the teaching effect, improving the teaching method and updating the teaching model (Wang & Fei, 2022). The feedback of Pharmacology course is completed by the participation of teaching supervision experts, teachers and students in the teaching effect, learning process and learning results, so as to continuously improve the teaching design scheme, improve the teaching effect, and further enhance students' learning ability, practical ability, problem-solving ability, cooperation and communication ability, etc.

5. Conclusion

In practical teaching, the course of Pharmacology has carried out several rounds of online and offline hybrid teaching exploration practice, innovatively implemented the "three-stage-six-step learning method", organically integrated the teaching of pharmacology knowledge, the training of pharmaceutical care ability, and the cultivation of professional pharmacists' quality, fully stimulated students' interest, guided students to actively explore, and cultivated students' comprehensive ability to solve problems and advanced thinking. Help students grow into high-quality technical and skilled pharmaceutical talents with good professional ethics, professionalism and comprehensive professional ability.

References

- Li, H., Chen, Q. Y., Wang, N. N., et al. (2021). Application and exploration of online and offline hybrid teaching mode in pathology teaching. *China Journal of Continuing Medical Education*, 13(6), 72-74.
- Ma, Y. S., & Yang, D. Z. (2020). The role and implementation of online and offline hybrid teaching mode in pharmacy higher education. *Guangdong Chemical Industry*, 47(20), 178+194.

- Wang, Y. Z., & Fei, J. J. (2022). Qualitative analysis of the implementation status of teaching feedback evaluation under the background of medical education. *Clinical Medicine Practice*, 31(11), 846-849.
- Zhou, T., Gao, G. Q., Wang, H. H., et al. (2019). Research on design and practice of curriculum evaluation model reform of Biochemistry and Molecular Biology. *Medical Teaching Research in Universities* (Electronic edition), 9(06), 43-47.