

Discussion on the application of blended teaching in the course of pharmacy administration and regulation

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Abstract: *Pharmacy administration and regulation is one of the compulsory courses for the pharmacy specialty of China, which involves all aspects of the pharmaceutical industry, including drug development, production, management, price, advertising, use, etc. It is an important part of the management of China's pharmaceutical and health undertakings. This course mainly introduces the laws and regulations, which is relatively boring and low acceptance for students through regular teaching methods. Therefore, this paper discusses the application of blended teaching in the course of pharmacy management and regulation, intending to provide some comments and suggestions for the course.*

Keywords: *Pharmacy administration and regulation, Flipped Classroom, Blended teaching*

1. Introduction

Pharmacy administration and regulation is one of the compulsory courses set up in the pharmacy specialty in China. And it is a part of non-professional course that pharmaceutical students must master. Pharmaceutical affairs management is the comprehensive management of pharmaceutical undertakings by the state, including scientific, standardized and legalized management of pharmaceutical undertakings. Pharmaceutical administration is a comprehensive frontier discipline formed by pharmacy, law, management, sociology, economics, psychology, philosophy and other disciplines. It involves all aspects of the pharmaceutical industry and links such as drug development, production, management, price, advertising and use, forming a relatively complete system. And it has now developed into an important part of the management of China's medical and health undertakings. It is a required course for pharmaceutical business management and international pharmaceutical trade of pharmacy specialty. Through the study of this course, students can fully understand the importance of the research and study of pharmacy management knowledge to the development of pharmacy, so as to adjust the economic and social relationship between people and drugs, correctly guide the pharmaceutical practice of pharmaceutical personnel according to law, promote the healthy development of pharmacy, and make contributions to human health services.

2. Current course information of our school

This course is intended for undergraduate students majoring in pharmacy in the fourth year of university. Through the study of this course, students can understand and master the basic contents, principles and methods of management activities in modern pharmaceutical practice. To optimizing students' knowledge structure, students should clarify the relationship between management and effective drug safety and be familiar with pharmaceutical organization and drug quality management, including master pharmaceutical laws, regulations and pharmacists' code of conduct. On the basis of mastering the professional knowledge of pharmacy, students can understand the basic laws of pharmaceutical affairs management activities, be familiar with the pharmaceutical affairs management system and organizational structure, intending to master the legal system of pharmaceutical affairs management in China. The contexts includes the management and supervision of drug production, marketing and use to utilize the theoretical knowledge of pharmacy management in guiding practical work and creating greater social and economic benefits.

This course focuses on teaching the basic content and the law of drug management, and introduces

relevant supporting policies. At the same time, it combines the actual case analysis and the new development and new trends of the national supervision of pharmaceutical industry, discussing the related issues of pharmaceutical management from the combination of theory and practice. The students should master the corresponding professional knowledge of pharmacy and the basic theory of management science. Given that there are too many theoretical contents in the course and it is boring for students. To mobilize students' learning enthusiasm, it is necessary to introduce new teaching models according to development of the times. In combination with actual cases when introduce corresponding pharmaceutical professional knowledge and basic theoretical knowledge of management science will be effective. Thus it is necessary to reform the teaching mode of this curriculum to improve students' learning level, and expand their knowledge.

3. The implementation of blended teaching

The course implementation mainly adopts a mixed teaching mode [1-3]. Through the combination of on-line and off-line mode, the real-time interaction of classroom teaching has been initially realized, increasing the participation of students. The online platform selects the "Pharmaceutical Affairs Management" course from China Pharmaceutical University on the superstar online platform. Students can use their spare time to have a certain understanding of the corresponding chapter content. While the offline course, students are encouraged to understand the relationship between drug regulatory departments, drug manufacturers, and patients through case analysis and role playing. The students have personally experienced the psychology of being a victim, and have a deeper understanding of the importance of strict control over drug information and the mission of being a supervisor. They have also mastered how to effectively manage drug information according to law, as shown in Figure 1.



Figure 1: The online "Pharmaceutical Affairs Management" course from China Pharmaceutical University.

The online learning before and after class is an effective supplement and extension of the course in both time and space [4]. Online learning before classes focuses on previewing and sorting out the knowledge framework, facilitating students to actively acquire new knowledge and skills. Online learning after classes focuses on reviewing and consolidating knowledge points. The students can use interactive functions such as online exercises, discussion areas, and send messages to ask questions to the teacher [5].

Offline teaching is mainly based on cases combined with knowledge points. Case teaching can help students deeply understand obscure legal knowledge. For example, for drug price and quality management projects, how to manage drug prices and quality. Whether the drug quality meets relevant regulations and requirements. And how to analyze the unqualified preparations and punish violations of drug quality. For example, in the teaching process of drug definition, the teaching design was designed in advance. The movie of "dying in survive" was previewed by students. On the basis of online guided learning, students analyzed the above issues in combination with the experience of the movie protagonist, so as to better understand and master the requirements of the outline and make the legal knowledge vivid [6]. Finally, the teacher checks the students' mastering situation and summarizes the knowledge points. Through case analysis and role playing, students will be interested in and motivated to learn from the drug regulatory department in the quality management of drug production and recall management of drug manufacturers, production supervision management, and standardized management of writing drug instructions and labels.

Teachers conduct task driven teaching based on multimedia teaching systems and mobile clients. First, the teacher describes the task, raises questions, and introduces the task. Students should analyze, discuss, and complete the questions in groups based on pre class guidance knowledge [7]. Secondly, the teacher

comments on the tasks completed by the students and explains in detail the common problems that exist. Finally, the teacher systematically summarizes the knowledge points.

The teacher publishes "Consolidation and Expansion" online, and students complete corresponding projects within the specified time. The teacher evaluates and feeds back the results to the students, allowing them to know where they need to improve in order to consolidate and improve in a timely manner, as shown in Figure 2.



Figure 2: The case analysis and role playing in offline teaching.

4. Discussion and suggestions

This course has successfully completed the course plan with a total of 12 topics designed. Three of these projects have designed blended teaching, with the help of a smart classroom. During the implementation of teaching, students are the main body of learning in learning knowledge by completing their own role tasks, supported by mobile tools. Teachers act as guides and organizers throughout the learning process. According to the requirements of the curriculum standards, teachers organize and provide corresponding digital online learning resources, including guidance videos, guidance cases, guidance PPTs, etc., so that students can carry out preview with questions. Students need to learn independently based on the pre class guidance provided by the teacher, and become familiar with the teacher's class content, and prepare for pre class knowledge.

Classroom discussion is the foundation of blended teaching. For some chapters that are not suitable for on-site teaching, case analysis, and virtual simulation teaching, classroom discussion is well supplemented for the knowledge point teaching. For example, in a project of drug management, in order to correctly understand the concept, characteristics, quality characteristics, classification, standards of drugs, students can consult relevant website materials, and conduct classroom discussions based on guidance knowledge. The teacher evaluates the results of the discussion among students. To deepen students' understanding of knowledge points, students can be tested online.

There are some remaining problems when conduct the course. The dominant position of students is not prominent. And teachers still want to be "cattle herders". Teachers are more concerned about teaching tasks and progress, ignoring students' autonomous learning initiative. We should take students into teaching materials, discuss and study together, and pursue good learning status and efficiency. The formation of learning habits under the new model is not systematic. It is difficult to change students' regular learning habits. Teachers should persevere in doing a good job, frequently guide and supervise, frequently summarize and provide feedback. Habit cultivation education should be implemented throughout the classroom, especially through constant efforts to achieve twice the result with half the effort.

5. Conclusion

The blended teaching conducted in pharmacy administration and regulation can mobilize students' learning enthusiasm, given that there are too many theoretical contents in the course. Through the combination of online and offline class, the real-time interaction of classroom teaching has been initially realized, increasing the participation of students. Students can use their spare time to have a certain understanding of the corresponding chapter content through online courses. While the offline course, students are encouraged to understand the relationship between drug regulatory departments, drug manufacturers, and patients through case analysis and role playing. The students have personally experienced the psychology of being a victim, and have a deeper understanding of the importance of strict control over drug information and the mission of being a supervisor. They have also mastered how to effectively manage drug information according to law.

To sum up, the application of blended teaching can promote students' mastery of knowledge and promote the learning enthusiasm of students. Besides, it can enhance the participation of students, solve the teaching management of innovative knowledge, and provide scientific evaluation of the master the basic contents, principles and methods of management activities in modern pharmaceutical practice.

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