Exploration of Teaching Reform of Pharmaceutical Administration and Regulations Course for Pharmaceutical Engineering Specialty

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Abstract: Pharmaceutical Administration and Regulations is an important professional course for students majoring in pharmacy and traditional Chinese pharmacy in colleges and universities in our country, and it is also the necessary support for doing pharmaceutical work well. Due to the limitation of subject characteristics and teaching mode, the teaching effect under the traditional teaching mode is not ideal. Under the background, this paper explores and summarizes the reform of the teaching of pharmaceutical management and regulations course of pharmaceutical engineering major in our school from the transformation and improvement of teaching methods, the deep integration of ideological and political curriculum and teaching content, the establishment of multi-dimensional curriculum evaluation system and other aspects, and discusses the specific ways of implementation and the possible related problems in the implementation process. It can provide reference for the teaching reform of pharmaceutical engineering professional courses.

Keywords: Pharmaceutical Administration And Regulation; Pharmaceutical Engineering Specialty; Teaching Reform

I. INTRODUCTION
Pharmaceutical Administration and Regulations is one of the compulsory courses for students majoring in pharmaceutical engineering, and it is also one of the compulsory subjects for the licensed pharmacist examination in our country. Through the study of this course, students will master the main links and basic rules of management activities in modern pharmaceutical practice, be familiar with the pharmaceutical administration laws and regulations of our country and their management norms, have the ability to manage and supervise the research and development, production, operation and use of drugs, and enable students to analyze and solve problems in practical work with the theory of pharmaceutical administration. Pharmaceutical Administration and Regulations is an interdisciplinary subject, involving pharmacy, law, management, economics and sociology and other disciplines, with obvious social attributes. Pharmaceutical management involves all levels of pharmaceutical enterprise and is closely related to pharmaceutical activities. Any pharmaceutical worker cannot do without the guidance of this discipline.

The teaching objective of this course is to enable students to master the technical operation and management key points of drug research and development, production, operation and use. Familiar with pharmacy administration laws and regulations of our country, preliminarily able to analyze and solve pharmacy practice problems with pharmacy administration knowledge. Establish the concept of students working in accordance with the law, train students to establish a good professional ethics of seeking truth from facts, unity and cooperation, bearing hardships and standing hard work. As the content of this course is mainly based on the provisions of pharmaceutical laws and regulations, covering a wide range of contents, the traditional teaching mode of “spoon-feeding plus one examination” has been unable to meet the requirements of teaching objectives under the new situation, the classroom atmosphere is relatively dull, and the teaching effect is not ideal. In this context, the teaching team of pharmaceutical management and regulations in our school has carried out diversified teaching reform and exploration for the curriculum.

II. THE PROPOSED METHODOLOGY
A. Transformation and improvement of teaching methods
(1) The application of flipped teaching method.
Flipped Class Model is a teaching method proposed by Professor Neil Postman in the United States that subverts the traditional teaching sequence[1]. Flipped classroom embodies the teaching concept of student-centered, active learning and individual learning, which is considered as a major change affecting traditional classroom teaching. In the implementation process of the flipped teaching mode, teachers need to carry out teaching design in different links such as before class, class and after class, and effectively use various teaching resources and teaching platforms to carry out teaching interaction with students, so as to achieve the expected teaching effect[2].

In the teaching practice of the author, the fake and substandard drugs in the chapter of Drug Administration Legislation are selected to carry out the flipped teaching. Before class, the teacher divided the whole class into 5 groups. Taking the typical Xinfu incident as an example, the teacher guided the students to look up relevant materials, and answered the following questions according to the materials consulted and the self-study of the knowledge points in this chapter:(1) According to Drug Administration Law of our country, what is the definition of drug, what is the quality requirement of drug?(2) What is the definition of fake and substandard drugs?(3) What is drug supervision and administration?(4) According to Drug Administration Law of our country, what are the penalties for the production and sale of fake and substandard drugs and the use of fake and substandard drugs by medical institutions?(6) What enlightenment do you get from this case? Each group of students is required to upload the answers to the questions to the learning platform, and organize the learning situation into PPT or video for class report. After each group of students reported, the teacher commented on the results of the report, and the groups also conducted mutual evaluation and free discussion.
Early, which effectively improves the discussion type, etc. Teachers need to adjust the teaching process in time. As a result, Canada, Africa, Latin America, Japan, Australia and other countries have purchased a large number of Thalidomide, resulting in a large number of "seal malformation babies" born. Thalidomide is a tragedy in pharmaceutical history, with a conservative estimate of the number of children born with thalidomide deformities. A conservative estimate is that about 8,000 babies have been born with malformations as a result of Thalidomide. After Thalidomide incident, countries around the world realized the importance of drug safety. The international conference held in 1966 formulated the new drug test protocol, and many countries strengthened the safety test link of drugs before marketing.

(2) Application of case teaching method.

Case-based teaching method is an interactive and open teaching method based on the knowledge carrier of teaching cases and the joint discussion between teachers and students on the cases, so as to stimulate students' enthusiasm for learning[3]. Cases are not simple examples. Teachers must select appropriate cases according to the teaching content and sort them out before they can be applied to teaching. According to different functions, cases can be divided into lead-in type, interspersed type and discussion type, etc. Teachers need to make reasonable use according to different scenarios and teaching purposes, and can also guide students to consult materials for case search by themselves.

When explaining the chapter of Drug Registration Management, the author chose the Thalidomide event as the leading-in case to trigger students' thinking on the importance of drug registration management and stimulate students' interest in learning. Thalidomide is a sedative hypnotic developed in Germany in the 1950s[4]. In 1957, the Federal German company Grünenthal claimed that it could treat morning sickness, nausea and other pregnancy reactions without any side effects. As a result, Canada, Africa, Latin America, Japan, Australia and other countries have purchased a large number of Thalidomide, resulting in a large number of "seal malformation babies" born. Thalidomide is a tragedy in pharmaceutical history, with a conservative estimate of the number of children born with thalidomide deformities. A conservative estimate is that about 8,000 babies have been born with malformations as a result of Thalidomide. After Thalidomide incident, countries around the world realized the importance of drug safety. The international conference held in 1966 formulated the new drug test protocol, and many countries strengthened the safety test link of drugs before marketing.

(3) The application of experiential teaching method.

Experiential teaching method is one of the important methods of practical teaching, which refers to the teaching activities through the design of cases, the arrangement of simulation environment, conceive games, and organize students to visit the site. This kind of teaching method can enable students to acquire knowledge and skills through personal experience, which is a student-centered teaching method. After teaching the chapters of drug management and drug information management, students are required to visit and make field visits to retail pharmacies, and the investigation results are submitted to the investigation report in the form of pictures and words, so as to strengthen students' mastery of knowledge.

B. The deep integration of curriculum ideological and political education and teaching content

One of the teaching objectives of the course of Pharmaceutical Administration and Regulations is to establish the concept of students working in accordance with the law, and cultivate students to establish a good professional ethics of seeking truth from facts, unity and cooperation, and bearing hardships and standing hard work. This requires teachers to fully tap the ideological and political elements, skillfully integrate them into the course teaching, and consciously improve the quality of students' professional ethics. At present, the curriculum team of our school has established a curriculum ideological and political database, and gradually carried out a variety of modes of curriculum ideological and political reform.

C. Establish a multi-dimensional curriculum evaluation system

The rationality of curriculum evaluation system is an important part of teaching effect[5]. Scientific evaluation system should enable students to timely understand their own learning situation, teachers can timely find problems according to the actual situation, adjust the teaching progress and teaching plan. In the traditional teaching model, students' performance is usually evaluated mainly on the basis of the final examination. As the test scores play a decisive role, students are prone to study fatigue at ordinary times, rush to study at the end of the term, last-minute cram phenomenon, learning effect is difficult to guarantee. It can be seen that this kind of summative evaluation only attaches importance to the results, but ignores the evaluation of the learning process, and cannot find the problems existing in the teaching process in time. Therefore, in the process of improving the course system of pharmaceutical management and regulations, we have enhanced the assessment of students in the process of learning. In the final grade, the process evaluation will account for 40%, and the final grade will account for 60%. In the process evaluation, attendance rate accounts for 15%, class performance (including group report and class interaction) accounts for 30%, class notes account for 20%, homework accounts for 20%, and ideological and political courses account for 15%. After adopting this multi-dimensional evaluation system combining process evaluation and summative evaluation, it effectively improved the situation of students not listening to class carefully at ordinary times and studying unconsciously at the end of term. In addition, as the process evaluation requires the full participation of students, students gradually understand their own advantages and disadvantages, which can provide reference for future employment.

CONCLUSION

Nowadays, the rapid development of network and information technology, especially the emergence of a new generation of information technology such as mobile Internet, cloud computing and artificial intelligence, has broken the inherent thinking of college teachers' teaching. This requires teachers to constantly strengthen their professional ability and professional quality, and transform from the imparts of knowledge in traditional teaching to the promoters of knowledge construction and information consultants in the new teaching mode.

Constantly innovate and reform the curriculum design,
fully mobilize the enthusiasm of students, guide students to play the subjective initiative of learning, so that students from passive learners into the master of learning, to achieve the simple "teaching" to "guide" and "teaching" combined with the educational goal. Teachers should constantly innovate and reform the curriculum design, fully mobilize the enthusiasm of students, guide students to play the subjective initiative of learning, so that students can change from passive learners to masters of learning, and achieve the educational goal of combining teaching with guiding. The curriculum reform of pharmaceutical management and regulations in our college is still in its infancy. The reasonable application of various teaching modes, the deep integration of ideological and political curriculum and professional knowledge, and the establishment of multi-dimensional evaluation system have all improved the teaching effect to varying degrees and effectively enhanced the professional ability of teachers. In the future teaching, we will keep pace with The Times, improve the teaching effect from multiple perspectives, and find a way of teaching mode reform that meets the requirements of pharmaceutical engineering professional talent training in the new era.

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References


