

Discussion on the Teaching Methods of Pharmaceutical Engineering Education

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Received 2012

To improve the capability of the students on studying the basic knowledge and practice in pharmaceutical engineering, we analyzed the teaching aim and characteristics of pharmacy administration. Improved methods and approaches of teaching were proposed in this paper. Furthermore, we discussed how to push the teaching innovation.

Keywords: Pharmaceutical Engineering; Pharmacy Administration; Teaching Method; Teaching Innovation

Introduction

Pharmacy administration is a comprehensive discipline in the pharmaceutical engineering field, it is also a crossing edge subject generating from mutual cross effect of pharmacy, sociology, economics, law, management and behavioral sciences ect. This subject has wide coverage and substantial content, and it almost involves in all fields of pharmacy and all organizations of pharmacy administration. On one hand, the subject is a compulsory course for students majored in pharmacy. On the other hand, it is a necessary subject of the national licensed pharmacist examination. Therefore, the abilities of analyzing problems through primary theories of pharmacy should be necessary quality for pharmacy workers, which can enable them to accumulate management experience and enhance the actual work ability.

In theory, compared with other subjects, pharmacy administration has many terms of relevant regulations, which are boring, dispersive, and incoherent to learn. So to improve pharmacy administration teaching methods and teaching quality has become an urgent problem needed to be solved as soon as possible. And pharmacy administration is a subject with the characteristic of application and practice, so it has great significance to explore the teaching methods that combine theory teaching with practical application for improving education quality, pushing forward quality education and developing students' innovation spirit and practical capability.

The Reform and Innovation of Teaching Methods

Pharmacy administration is a subject which largely contained the nature of social science and its content is mainly expressed with words. It is boring for students to learn. In order to effectively inspire the initiative, positivity and creativity of stu-

dents, to develop students' creative spirit and practical ability, and to strengthen the quality education, we ameliorate our teaching methods as the following aspects.

The Heuristic Teaching Method

For the purpose of developing students' self-learning ability, literature searching ability and the ability of collecting, sorting and analyzing information, we may adopt the heuristic teaching method, which can attract attention of students and effectively inspire studying interest of the students. During the process of teaching, teachers must play the leading role, and encourage students to think actively and solve problems by themselves. According to the characteristics of the course content, we select relevant sections, and apply the "Question discussions" method into teaching practice. First of all, teachers ask questions according to the basic requirements of this chapter and encourage students to preview with questions. Then a particular student is specified to elaborate his opinion. Finally the teacher makes a concluding speech. For example, when the teacher gives a lesson about "legislation of drug administration", he can put forward some questions, such as if you're going to establish a pharmaceutical production enterprise, how will you bid for it in accordance with the procedures provided by law and carry out production management lawfully, if you're a drug supervision administrative personnel, how will you supervise and regulate drug-production enterprises, drug-handling enterprises and medical establishments, etc.

The Case Teaching Methods

Pharmacy administration also is a subject which has wide application. Combining typical cases with reality oriented explanation in the teaching can make the abstract knowledge become vivid tangible events from abstractness into speciality,

from boring to interesting, and then more easy to understand. The great advantage of the case study method is to change the traditional teaching methods only by improving teaching mode. The change adequately captures the enjoyment, practicalness and application of teaching and achieves the "combination in 4 aspects" in pharmacy administration, namely "combination of theoretical study and practice", "combination of imparting knowledge and cultivating ability", "combination of the teachers' guiding role and students' main role", "combination of classroom teaching and extracurricular independent learning"[3]. When teachers teach their students about the laws involved in pharmacy administration, they can use the case study method. For example, when giving a lecture about drug administration law, teachers can select typical cases, ask students to have "group discussion", choose a student to summarize his team's viewpoint, and then teachers again make out a summary according to the student speech and list items of relevant laws. So that everyone can learn and master laws in a relaxing and jovial atmosphere.

The Multimedia Teaching Method

Due to the special requirements of drug production, the number of field personnel in the production workshop restricted strictly and before entering the workshop, people need to change clothes clumsily. So the on-the-site teaching is limited. However, the multimedia technology can eliminate the time-space limitations of the teaching. By collecting photos and video at the job site or summarizing the illegal cases of drugs, successful cases of drug-production enterprise, cases of drug administration and some other relevant content that is not described in books to make multimedia courseware according to the syllabus, which can enrich the class. This vivid penetrating teaching method brings students fresh feeling, extends the students' scope of knowledge, improves students' learning interest and cultivates the students' observation, analysis and problem solving ability. Besides, the use of modern multimedia teaching technology can save time, increase the teaching information, make teaching more intuitive and more palatable, so as to increase the teaching effect and efficiency.

The Field Teaching Method

Pharmacy administration is a highly pragmatic subject. The boring lectures often make students difficult to understand. Through visits internship and practice will consolidate and enhance the students' understanding of theory, increase students' interest in study, widen students' vision and thinking and cultivate students' practical ability, which will lay the solid foundation for their work in the future. For instance, it is boring to learn the rules of the Good Manufacturing Practices (GMP) of drugs, if the teacher could take students to visit the production front line and invite technicians who have certain theoretical level and practical experience as instructors, it will enable the students to get deeper understanding of requirements of GMP to production management, quality management and creation management, besides it will let students have the further understanding of job responsibilities, work assignments, work flows and job requirements. In this way, teachers will be able to make the knowledge explains thoroughly, the students

can understand easily, remember firmly and know well about pharmaceutical factory as quickly as possible, which could help the students to quickly integrate into the new work environment and carry out their work successfully[4]. The introduction of the field teaching method not only increases students' perceptual knowledge, but also deepens the understanding of pharmaceutical quality system.

The Concrete Methods of Deepening Teaching Innovation

To Strengthen the Teaching Material Construction of the Pharmacy Administration

As a subject with great comprehensiveness, pharmacy administration refers very extensive scope, the research content is not in-depth and the teaching material is too comprehensive and quite scattered. Therefore, it is necessary to set research key points in the process of the subject construction to make it gradually consummation. In addition, pharmacy administration is intersecting science, it is highly complementary, correlated, confluent with other subjects. Along with the development of subjects, we should combine different research directions on the basis of studying relevant knowledge widely for integration and accumulation. Only in this way, we can greatly promote the development of the subjects. Moreover, the teaching material of pharmacy administration should keep track of the recent development trends, absorb international advanced theory, research methods of pharmacy administration and update the subject content according to the latest national drug policy, the latest "Methods of Medicine Registration and Management" and drug advertising management approach, in order to make pharmacy administration study more timely and accurate.

To Improve the Methods and Means of Teaching

The traditional teaching mode of pharmacy administration pays attention to theories, and makes light of practice. In order to solve the problem, teachers should change the traditional method of teaching by introducing the case study method and increasing the proportion of case teaching, through which management theory of pharmacy administration could be mastered and the quality of teaching will be further improved. Although, at present, the case study method has been adopted by some college teachers, the teaching content is so obsolete that can't keep up with world developments in pharmacy administration. The quality of the teaching cases is critical to the success of the case study method, so when collecting the cases, we must pay attention to the authenticity, typicalness, novelty, and generality of the cases. In teaching, modern education tools will be used to broaden information collection channels, explore and neaten new teaching cases, then built a case base and improve the level of the case study method utilization. In addition, the modernization of teaching methods is one of the important targets to achieve the aim of teaching innovation, which requires teachers must keep pace with the times and make full use of multi-media techniques and methods. But now teachers still fail to give full play to its due role, making multimedia courseware and video still be much limited. In the future, great breakthroughs should be made in courseware making and the use of network resources.

To Teach in a Joint Teaching and Advance with the Times

Due to pharmacy administration is a subject that has strongly policy-natured and topicality, which requires the instructors to read professional magazines, newspapers and update the relevant policies and regulations, such as "Methods of Medicine Registration and Management", administration regulations on drug distribution ect, so as to present the latest and the best teaching content for students. At the same time, pharmacy administration is a applied and practical course, it almost involves in all fields of pharmacy and all organizations of pharmacy administration, therefore, teachers should go to the drug regulatory agencies, drug manufacturers or hospitals to study and understand the latest development of this field. In the process of teaching, the introduction of social investigation combines theory with practice and deepen the students' understanding of

the social practice and knowledge [5].

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