

The Role of Practical Teaching Base in the Cultivation of the Professional Master of Pharmacy

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Abstract—Because of the strong practicality required by pharmacy specialty and the urgent need of the pharmaceutical talents who master professional skills by pharmaceutical enterprises, the construction of practical teaching base plays an irreplaceable role in the development of professional master of pharmacy. Through the construction of practical teaching base, students' professional qualities and the sense of responsibility are enhanced, and students' practical skills are improved. Employment competitiveness of students also be greatly improved. Put it another way, more attention should be paid to practice teaching in pharmacy students. This article explored the role of practical teaching base in the cultivation of the professional master of pharmacy, and the urgency of practice teaching which pharmacy students should study. Through practical teaching, schools are able to develop a group of independent and high-level graduates with innovative, pioneering and team spirit, who dare to, brave to and will innovate.

Keywords—*professional master of pharmacy; practical teaching base; technical talents*

I. INTRODUCTION

Due to the applicable and practical characteristics of pharmaceutical specialty, work in the field of pharmacy requires pharmaceutical graduates who not only master the basic theories of pharmacy, such as pharmaceutical chemistry and pharmaceutical analysis, but also have innovative ability. They need to master professional skills, have strong practical ability, and be familiar with the pharmaceutical production process[1,2]. The fundamental objective of pharmacy is to solve actual and potential drug-related problems. Previous studies have shown that most of the postgraduates' work in their specialty (Fig.1). The ultimate aim is to cultivate students with a high level of knowledge and problem-solving skills.

To address the practical responsibilities for the professional master of pharmacy, pharmacy education must keep up with advanced medical technology. The construction of practical teaching base plays an irreplaceable role in the cultivation of professional master of pharmacy[3]. The practical teaching base aims to improve students' abilities of mastering practical skills, solving problems, learning theoretical knowledge and communicating more efficaciously. The construction of comprehensive platform for teaching, learning and research could change the traditional concept of cultivating research-oriented talents with theoretical knowledge, and this platform will relieve the shortage of social talents, thus school and

students will focus on the practicability, professionalism and technicality of knowledge. Only by understanding the urgent need of applied and technical pharmaceutical talents can we find correct direction of training, further enhance students' professional qualities, and strengthen students' sense of responsibility and improve students' practical skills. Finally, employment competitiveness of students could be greatly improved, and the gap between the actual ability and the actual requirements of medical posts after graduation is narrowed. Through the practical teaching, we are able to develop a group of independent and high-level graduates with innovative, pioneering and team spirit, who dare to, brave to and will innovate. They will adapt well to the development of social and economic construction, and attain the quality of their professional skills comprehensively throughout this pharmacy curriculum[4,5].

II. PRINCIPLES AND REQUIREMENTS OF THE PRACTICAL BASE CONSTRUCTION OF PHARMACY MAJOR

Pharmaceutical practice is a test of students' ability to integrate theory with practice and apply theory in practice. It is a key part in the teaching of professional master of pharmacy. The construction of pharmaceutical practical base should aim at cultivating students' innovative spirit and practical ability, and seek for a practical base with mutual benefit, formal norms and complementary advantages. There are many kinds of practical bases, such as pharmaceutical enterprises, drug inspection institutes, pharmaceutical factories, hospitals and so on at present. The basic requirements for selecting practical bases are mainly standardized R&D process, adequate practical environment and modern technology. Pharmaceutical factories should have not only strong general strength in new drug research and development, but complete drug market entry strategy and ability. The strong economic strength and clear product market positioning are also indispensable, which ensure high-quality completion of practical activities. Thus, students are familiar with the process of drug research and development in the market. Pharmaceutical inspection institutes should have complete equipment for drug testing, modern methods for drug quality control, and standardized management mechanism. Therefore, students combine the knowledge they have learned with practical conditions, and students' awareness of innovation, responsibility and social awareness could be enhanced. Hospitals should have perfect equipment and management system. The strong overall strength ensures students to fully learn rational drug use. By

consolidating and deepening professional theoretical knowledge and learning clinical thinking methods, the student's ability of analyzing and solving problems can be improved, and they are able to work independently. They are rigorous and realistic and uphold the spirit of exploration, practice and innovation.

III. THE ROLE OF THE PRACTICAL BASE CONSTRUCTION OF PHARMACY MAJOR

The requirement of society for diversity of talents and the need for practical and innovative talents urge students to consciously participate in the construction of practical education bases[6]. As an important way for students major in pharmacy to connect with society, the establishment of practical base can improve their social work ability and professional qualities, and students can learn to integrate into enterprise culture. For schools, the construction of practical base improves the single teaching method, makes up for the lack of separation between traditional teaching, and establishes characteristic teaching mode. This also increases cooperation between schools and social institutions, improves the popularity and influence of the school. For the practical base, arranging students' practice will help enterprises to innovate production, develop industry and train talents. In a word, the construction of pharmaceutical practical base is a multi-win mode (Fig.2).

A. *Change the Single Teaching Method and Raise the School's Popularity and Influence*

Incorporating pharmacy practice into teaching system would emphatically improve the current scheme of the pharmacy profession education. Changing the single teaching method throughout the establishment of a comprehensive platform for teaching, learning and research will provide a way to integrate theory with practice for students. Introducing diversified concepts into teaching is an excellent idea to foster student's reasoning and critical skills, realize their innovative ideas and cultivate the spirit of exploration and innovation for students. Meanwhile, it identifies the core competitiveness expected from society and improves the pharmacy graduate's problem-solving skills. This study of integrated skills seems to be effective in helping student apply knowledge to the real cases. It also avoids students' lack of enough knowledge reserve after they graduate and provide services for society. By improving the teaching effect, the graduates cultivated from the master degree programme have good professional ethics and could meet the needs of enterprises. According to the experiences gained at the practical base, students can understand the social demand for first-line skilled personnel, find out the shortage of vocational personnel training in colleges and universities. We should determine which skills are essential for pharmacy students as practical experience and find effective strategies to improve the quality of personnel. Finally, we will train a group of applied innovative talents who grasp the frontier medical science and technology according to the social needs. To be sure, innovative consciousness of students is stimulated, and the level of innovation is improved. In brief, actively exploring practical teaching methods meets the needs of market economy. Innovating curriculum construction could

also improve not only teaching effect of schools, but professional qualities and employment quality of graduates. In conclusion, the setting of practical teaching base expands the influence and popularity of schools, lays a foundation for recruiting more qualified students, and to a certain extent, teachers could solve some problems for society.

B. *Practical Base Enhances Innovative Production and Complements with School Advantages*

In the construction of the base, it makes good use of the technologies and teachers of colleges and universities to solve the practical problems in front-line production and some difficult academic problems. Enterprises achieve the unification of social and economic benefit. It also promotes its construction and development. At the same time, long-term scientific base construction can not only enhance the social image of enterprises in practical base but increase their profits and market share. Utilizing school's teaching facilities and faculty to train non-pharmaceutical salesmen in pharmaceutical enterprises could increase their professional knowledge of pharmaceuticals. This method, on the one hand, benefits enterprises, and on the other hand, makes the relationship between schools and enterprises more harmonious. We also run schools together according to the talent specifications needed by enterprises. This group of students are employment-oriented. The advantages of schools and enterprises are truly complemented.

C. *Improve the Social Work Ability and Professional Qualities of Students*

Students' professional practical skills cannot be fully exercised and cultivated without pharmacy practice experience. Practical majors must comprehend knowledge through practice. Practical teaching bases are used to carry out practical teaching. Students' ability to critical thinking, innovation, communication, problem-solving skills, and other various purposes can be improved in this appropriate situation, and the sense of social responsibility and social competition are strengthened at the same time of connecting with society. Students' interest in learning could be stimulated during practice because their practical skills has been raised. The experience about the actual drug production or clinical drug using makes students actively learn and recognize new drugs, new knowledge and new technology. Differentiating from conventional experimental courses, practical teaching enables students to study practical knowledge attentively, instead of the coping operation in experimental courses. Some students use the knowledge they have learned in the base to work in the grass-roots level and create social benefits. Through this opportunity for students to connect with society, students learn to integrate into corporate culture for the first time, which is a part of the lack of school teaching. After joining the work force, they will keep up with the trend of society, identify with corporate culture, and thus increase the competitiveness of employment. Pharmacy practice gives a new opportunity for students to perform functions and provide services for society. The practical base should be construction so as to improve students' professional ability.

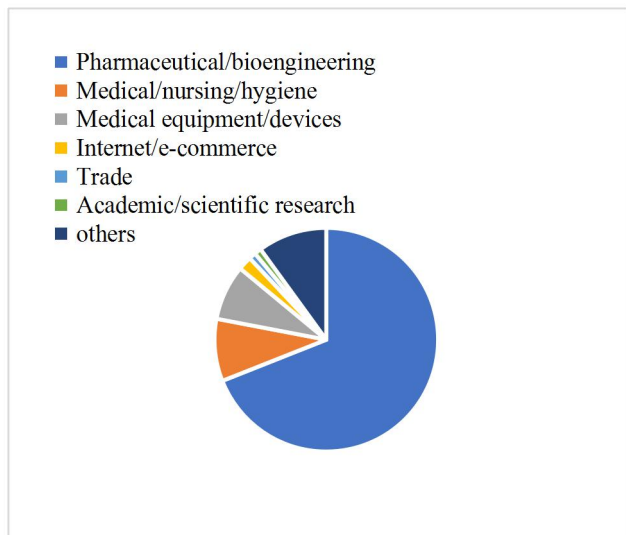


Fig. 1. Distribution of employment direction in pharmacy

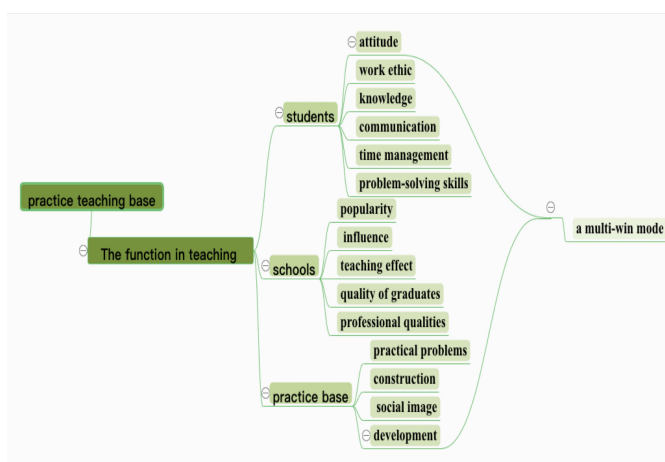


Fig. 2. The role of practical teaching base in the cultivation of the professional master of pharmacy

IV. SUMMARY

All the factors considered, the practical teaching base plays an important role in the process of cultivating professional

master of pharmacy. The reason is that the experience they have in the base will foster their reasoning and critical skills, realize their innovative ideas and cultivate the spirit of exploration and innovation for students. Attain the quality of professional skills comprehensively is a widely accepted goal of higher education. Research suggests that students should learn practical skills through formal, systematic and comprehensive training instead of self- or class-directed learning. More importantly, actively exploring practical teaching methods meets the needs of market economy. Arranging students' practice also increases cooperation between schools and social institutions, improves the popularity and influence of the school and enterprises. Innovating curriculum construction could also improve not only teaching effect of schools, but professional qualities and employment quality of graduates.

In a word, the pharmaceutical practical base is a multi-win mode. More attention should be paid to practice teaching in pharmacy students. This article explored the role of practical teaching base in the cultivation of the professional master of pharmacy, and the urgency of practice teaching which pharmacy students should study.

REFERENCES

- [1] WU Guoming, YE Feijuan, Building Practice Base outside School to Deepen the Reformation of Experimental Teaching, *Res. Explore Lab.* 2004, vol. 23, pp. 77-79. In Chinese.
- [2] S. Abdulsalim, M. Farooqui, Chapter 5 - Role of Pharmacy Education in the Advancement of Pharmacy Practice: An Eastern Perspective, in: A.I. Fathelrahman, M.I.M. Ibrahim, A.A. Alrasheedy, A.I. Wertheimer (Eds.), *Pharm. Educ. Twenty First Century Beyond*, Academic Press, 2018, pp. 51-60.
- [3] ZHANG Jie, Liu li, Relying on the Practice Base, Improve the Quality of Pharmaceutical Master Training, *REFORM Open.* 2016, vol. 06, pp. 94-95. In Chinese.
- [4] MA Yingli, GUAN Feng, MENG Rui, Preliminary Study on the Construction of Practice Bases for Pharmacy Majors, *J. Pharm. Pract.* 2007, vol. 25, pp. 343-345. In Chinese.
- [5] ZHOU Shuqin, Exploration and Practice on the Construction of Pharmaceutical Training Base in Higher Vocational Colleges, *Chin. JOURNAL Med. GUIDE.* 2010, vol. 12, pp. 710-711. In Chinese.
- [6] WANG Jinni, HUANG Zuliang, LI Zhenzhong, WEI Xian, Study on the Employment - Oriented Pharmaceutical Diversified Practice Patterns, *Guangzhou Chem. Ind.* 2014, vol. 24, pp. 173-174. In Chinese.