

# Research on the practice teaching mode of pharmacy specialty in higher vocational colleges under the “integration of production and teaching”

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**Abstract:** Along with the development of the pharmaceutical industry and the upgrading and transformation of the industrial economy, the demand of the society for highly skilled medical talents surges, which brings new opportunities to the vocational education in China, and also raises higher challenges for the training of talents. From the perspective of “integration of production and education”, teachers of higher vocational pharmacy should actively deepen the degree of school-enterprise cooperation, implement the strategy of integration of production and education, give full play to the effect of collaborative education between schools, industries and enterprises, further optimize the educational resources of pharmacy, optimize the practical teaching mode, and promote the effective training of students’ professional skills. Enable students to grow into skilled talents who meet the development needs of enterprises and industries in the pharmaceutical field, and effectively promote the upgrading and optimization of related industries. Based on the perspective of “integration of production and education”, this paper has launched a deep exploration of the path of practical teaching in higher vocational colleges, hoping to provide some reference.

**Key words:** Integration of production and education; Higher vocational college; Pharmacy major; Practical teaching; Teaching mode

## Introduction

In recent years, with the development of vocational education reform in full swing, the running mode of higher vocational colleges has undergone great changes, and the training of skilled talents has become an important task of higher vocational colleges. With the idea of “integration of production and education” proposed, the deep integration of industry, enterprise and education has brought more abundant educational resources to the practical teaching of pharmacy major in higher vocational colleges, and effectively promoted the reform of practical teaching. Based on the strategy of integration of industry and education, schools are required to carry out in-depth cooperation with pharmaceutical related industries, industries and enterprises to enhance talents’ professional ability and vocational skills, ensure that the knowledge and skills of cultivated talents can be relative to the actual positions of industrial enterprises, effectively improve the adaptability of students’ positions, and thus realize the improvement of human capital benefits. Based on this, when carrying out practical teaching, higher vocational pharmacy majors should focus on grasping the status quo and trend of social and economic development in the new era, understand the advanced concepts and technologies of the current pharmaceutical related industries, clarify the knowledge and skills requirements of enterprises for talents on the job, and further optimize the practical teaching mode accordingly to promote the integration of engineering and technology.

## 1. Problems existing in practical teaching of pharmacy major in higher vocational colleges

### 1. Lack of practical training attention in the curriculum system

At present, in the teaching of pharmacy in many higher vocational colleges, too much attention is paid to the teaching of students’ theoretical knowledge, and less attention is paid to the practical training courses. The assessment of students’ grades and credits is mainly based on the assessment of theoretical knowledge, and the proportion of practical ability and vocational skills in the assessment is low, resulting in a serious lack of practical ability and insufficient grasp of vocational skills. First of all, in the practice teaching of higher vocational colleges, the setting of practical training courses is relatively insufficient, so that students do not have enough opportunities to practice, unable to exercise their professional skills. Secondly, in the practice teaching of many pharmacy majors in higher vocational colleges, there are still cases of serious separation between theoretical courses and practical training courses. Such a curriculum system makes students’ theoretical knowledge and practical ability disconnected, which seriously hinders the improvement of students’ vocational skills and professional abilities. In addition, at present, the content of relevant courses in the practice teaching of pharmacy major still exists the phenomenon of cross-repetition, and its teaching content is relatively superficial, and practical training is mostly the continuation of the explanation of some basic skills and knowledge, so it is difficult for students to develop their knowledge level and innovation ability in depth, which is not conducive to the improvement of students’ comprehensive literacy.

### 2. Teachers lack of practical experience

When hiring teachers, vocational colleges mainly consider their academic qualifications, teacher qualifications, teaching experience and other aspects, and do not investigate whether the teachers have professional practical experience. As a result, the teachers of pharmacy in vocational colleges are mostly fresh graduates

directly involved in education after graduation, or some teachers with educational experience, but seriously lack teachers with rich practical experience. In general, the practical experience of these professional teachers is not enough to support students’ vocational skills learning needs, nor is it easy to give students effective practical guidance, and they cannot help students avoid practical problems with

their own experience, which brings great obstacles to the improvement of students' vocational skills practice level. In addition, because teachers are immersed in education work for many years, they cannot timely understand the latest technology and concept related to the pharmaceutical industry, resulting in the content of practical teaching generally lagging behind, which affects the development of students' innovation and practical skills.

### 3. Outdated content of practical teaching

At present, in the practical teaching of pharmacy major in higher vocational colleges, its practical curriculum and practical teaching content are relatively outdated, and it has not actively introduced the latest vocational technology and concept, resulting in the curriculum cannot follow the pace of development of The Times. In addition, the textbooks used in higher vocational pharmacy are updated slowly, but in the era of rapid development of the Internet, the development of the Internet economy has brought great changes to our country's economy, and the skills that talents need to master in the new era are changing with each passing day. In this context, the content of slowly updated textbooks is obviously difficult to keep up with the development process of The Times and to keep pace with The Times, which also leads to a certain lag in the vocational skills and knowledge students learn, unable to use the knowledge to cope with the modern complex medical production, application environment and technological development, and difficult to meet the needs of social medical talents. In addition, some pharmaceutical teachers are used to copying the content of textbooks, and fail to extend and expand the practical teaching content according to the specific situation and technological development, which ultimately leads to the difficulty for students to adapt to the post work.

## 2. The construction strategy of practical teaching mode of pharmacy major in higher vocational colleges under the "integration of production and education"

### 1. Introduce new technologies and improve practical teaching content

In view of the lagging teaching content of pharmacy major in higher vocational colleges, teachers must pay attention to the problem, take advantage of the integration of production and education, further expand the practical teaching content, enhance the timeliness of pharmaceutical knowledge learning and practical skills training, strengthen the integration of new technologies in the industry, and train high-quality talents in line with the development of pharmaceutical industry in the new era. Due to the limitations and lag of the content of the teaching materials, it is difficult to completely improve them, which requires teachers not to limit their teaching attention to the teaching materials, but to actively exert the advantages of the integration of production and education, introduce the latest technology and knowledge of pharmaceutical enterprises into practical teaching, further improve the practical teaching content of pharmacy major and enrich students' cognition. And promote knowledge to keep pace with The Times. Teachers can enrich the teaching content through abundant enterprise resources, integrate the new topics in the current era of pharmaceutical development and the latest medical technology knowledge into the teaching, guide students to carry out positive thinking divergence in class, enhance their enthusiasm for class participation, and further enrich their understanding and cognition of pharmaceutical knowledge.

### 2. Strengthen the construction of the system and promote the special construction of practical teaching

Practical teaching is characterized by diversity and discipline. In this regard, higher vocational colleges should start with major innovation projects, graduation practice, graduation design, safety construction and management of practical training room, teaching management of practical training room, and establish and improve management systems and systematic management mechanisms for practical teaching according to the discipline needs of pharmaceutical majors. In terms of the construction of practical training room, schools and professional teachers should adhere to the scientific principle, strengthen the top-level design, build a contact platform between experts and teachers by strengthening the integration of production and education, and invite experts in the pharmaceutical industry and big players in enterprises to participate in practical teaching reform. A large number of cutting-edge disciplines and enterprise project resources will run through the practical education, experiment management, professional practice teaching plan, curriculum practice teaching arrangement and other aspects of pharmaceutical major, so as to generate an interlinked practical teaching resource system. At the level of professional teaching, schools and professional teachers should integrate the experimental courses and projects set up by the pharmacy major, and plan the needs of equipment and experiment sites in the practical training room according to the characteristics and direction of the experiment; In the secondary college, the management personnel should coordinate the construction and development needs of each major, plan the expansion area of the pharmacy training room, the number of instruments and equipment and the number of practical teaching hours, integrate the teacher data corresponding to different practical training courses, and upload the final data to the practical teaching database of the college, which will be reviewed by the school leaders. In addition, the school and teachers should comprehensively review the basic data of the pharmacy major according to the actual construction needs of the major, and give reasonable rectification suggestions according to the long-term development needs, requiring the relevant management personnel to complete the rectification within a limited time, and compile the corresponding practical teaching construction materials. By strengthening the system construction, the reform plan of practical teaching can be generated for the pharmacy major in the future period of time, providing a clear direction for practical teaching management, teacher team construction and practical teaching resources development.

### 3. Apply project-based teaching and lead practical teaching with real projects

Project-based teaching is a new teaching mode in recent years under the background of the integration of industry and education. Through the school-enterprise cooperation platform, students can truly participate in the work of medicine-related projects, improve students' application and practice ability, and at the same time, students can truly experience the working process of related positions and

understand the industry background in advance. It is conducive to the further development of students' practical ability and innovation ability. In this regard, colleges and universities should further strengthen the cooperation between schools and enterprises in the practice teaching of pharmacy major, guided by real projects in enterprises, so that students can gain more and more real opportunities for practice during the study, cultivate students' practical ability and improve their practical experience through participation in real projects, and extend the practical projects of enterprises. To achieve the improvement of students' innovation ability, and lay a smooth road for students' future career development. In addition, schools and professional teachers should also make use of the school-enterprise cooperation platform to provide more professional internship channels for students majoring in pharmacy. After the completion of the students' studies, the cooperative enterprises will accept the students and carry out on-the-job internship, guide them deeply into the real working environment, and the teachers of the enterprises will give professional practical guidance to them and complete the corresponding internship tasks. Through the complete practical experience, students can further improve their knowledge vision and practical operation ability. Moreover, students can learn about the industry background and working environment in advance in the real on-the-job internship, which has an important impact on their future career planning.

#### 4. Pay attention to innovation and entrepreneurship, and build a training base for the integration of production and education

In the context of the construction of the integration model of production and education, the construction of a new type of integration training base of production and education that integrates scientific research and education, practical training, innovation and entrepreneurship, and social service, and is complementary, mutually beneficial, interactive and multi-win has become a key research topic in higher vocational colleges. In this regard, in the practice teaching of pharmacy major in higher vocational colleges, schools and teachers should also pay attention to the development of innovation and entrepreneurship education, give full play to the resource advantages of industries and enterprises, and combine their own resources and enterprise resources to jointly build an open double innovation training base. In the construction of the training base, the professional training room can be rationally planned for the pharmacy major, and advanced technologies such as big data and virtual simulation can be introduced into the construction of the training room to optimize the allocation of the teaching function of the training room, so that students can carry out practical projects and scientific research projects such as curriculum training, double innovation practice and vocational training in the training room, so as to improve the teaching effect of the school's double innovation practice. It can also achieve the goal of educating students in collaboration with production, learning and research. In addition, based on the deep cooperation between schools and enterprises, the construction of pharmaceutical training bases should also strengthen the docking of enterprise-related jobs, according to the talent needs of the pharmaceutical industry, with the principle of "co-construction, co-management, sharing and win-win" work, through the integration of schools, enterprises and government resources, so that enterprises can participate in the school's talent training. The trained talents will be implemented in the real production of the enterprise, to achieve resource conversion and promote win-win cooperation.

### 3. Conclusion

To sum up, from the perspective of the integration of production and education, vocational colleges and pharmacy teachers should actively explore novel and effective teaching measures to deepen school-enterprise cooperation, in order to effectively promote the multi-level and in-depth reform of professional practice teaching, and finally successfully mobilize the autonomy and enthusiasm of students, so that they can concentrate on professional learning and practical training. In actual teaching, vocational colleges and pharmacy teachers can realize the full penetration of the concept of integration of production and education by introducing new technologies, strengthening system construction, applying project-based teaching, and creating double and creative training bases, so as to continuously improve the teaching quality of pharmacy and promote the comprehensive and balanced development of students.

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This paper is the phased achievement of the university-level key project of Chengde Nursing Vocational College in 2023 (No. : Y202302)

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