

Research on the Implementation of Mixed Class Teaching of “Pharmaceutical Preparation Technology” Based on “Wisdom Vocational Education”

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Abstract: The course of “Pharmaceutical Preparation Technology” is the core professional course in the professional courses of pharmaceutical manufacturing. In order to truly realize the flip of the classroom, stimulate students’ interest in learning, and lay a solid foundation of professional skills for them, we make full use of Internet technology to build a multi—dimensional teaching path and create a student—centered multi—dimensional drug preparation class. We use various convenient Internet technology methods such as online teaching platforms to enable students to actively access the technology and equipment of pharmaceutical preparations in various forms, enhance the effectiveness and charm of classroom teaching, complete the cultivation of their pharmaceutical preparation capabilities, and internalize professional recognition.

Keywords: Internet; Mixed Classroom; Pharmaceutical Preparations

1. Course Design

The teaching design of the course “Pharmaceutical Preparation Technology” is based on a project model, and students can play their individual initiative and teamwork. With the involvement of information technology in teaching, traditional classroom time is shortened, and extracurricular time is effectively used. The teaching considers the scenario simulation of the pharmaceutical factory, the teacher’s demonstration teaching, and the student skill practice.

The overall teaching process of this course is designed into three parts before class, during class, and after class. In order to enhance students’ interest and strengthen professional ability, we design multiple teaching links and multiple teaching forms.

2. Teaching strategy

2.1 Accurately analyze goals and academic conditions

According to the characteristics of students, through the creation of multi—dimensional classrooms that combine network classrooms and training rooms, multiple forms of teaching interaction are designed, and a sufficient display platform is provided to stimulate students’ interest in learning and improve teaching efficiency.

2.2 Innovative multi—dimensional classrooms extend teaching time and space

Construct a multi—dimensional classroom in the school according to the needs of teaching content. Take the “Conventional Oral Solid Preparation” module as an example. For example, the production of powders mainly involves the screening and mixing of drugs. The technical methods are common in daily life and easy to understand. You can use pre—class cloud class resources for learning and in—class courseware teaching. However, the production of granules involves the soft material’s “holding into a group, lightly touching and

dispersing”. Students need to experience it personally. They need to move the classroom to the training base, teaching by teachers and hands-on teaching by students.

Cross-regional live broadcast of enterprise education connection, constructing a multi-dimensional classroom outside the school. The production of tablets involves complex equipment such as tablet presses. We need to use classroom live broadcast and simulation teaching based on the above teaching methods. In order to understand the solid preparation GMP workshop, and the particularity of pharmaceutical companies does not allow GMP workshops to understand internships, we use the company’s production shutdown period to conduct cross-regional live teaching.

With this multi-space teaching, we have constructed the current multi-dimensional classroom of pharmacy teaching.

2.3 Refining noble professional qualities

Past seniors are examples to enhance students’ sense of mission and honor, increase industry recognition, and cultivate high-skilled talents. We must first cultivate high-quality talents. We will continue to teach pharmaceutical preparations according to the law and pharmaceutical preparations for the people.

2.4 Constructing a fun-mixed classroom

We design all module teaching content into three links before class, during class, and after class, and the teaching activities of each link are reflected in the value of the cloud class, as one of the basis for students’ final assessment.

Introduction of various forms of pre-class courses. Before class, within a given time limit, students realize multi-dimensional learning through planning materials, cloud class courseware, teaching videos and other resources. For pre-class questions, encourage students to check information or initiate discussions in cloud classes, encourage students who initiate and participate in popular discussions, and enhance students’ enthusiasm for self-answering. The assessment test is conducted before class, and the teacher analyzes the academic situation through pre-class discussion and test results, and decides the composition of the teaching content of the teaching task.

A highly competitive blended classroom. Based on the analysis of the pre-class academic situation, the teacher emphasizes the important and difficult related knowledge in the class, and adopts a little lecture or answering questions after the class to improve the teaching efficiency. In class, use cloud class “brainstorming” activities to grasp the students’ learning situation in real time, use cloud class’s answering and raise hands to initiate the “order grabbing activity” link, give the class strong medicine, mobilize students’ enthusiasm, and create a relaxed and happy study atmosphere.

Construct a reasonable comprehensive evaluation after class. ① Academic performance evaluation. Teachers set the scores of various activities before class. After the project is completed, students can see the comprehensive scores automatically counted by the cloud class system. Project scoring involves many aspects, such as: project attendance, resource learning, participation in live broadcast and discussion, classroom activity, testing activities, etc. Using the accurate and convenient grading system of the cloud class platform, students can see the source and changes of their scores in real time. ② Evaluation of teaching effect. Before class, pass the pre-class test scores and cloud class analysis of the activity of participating projects as the basis for judging the effect of teaching activities. After class, through the online test and the overall score of the product display, we can know the students’ mastery of the knowledge points. For example, in the after-class “soft material” test, more than 90% of the students have answered correctly, which means that the students have basically mastered the knowledge points. If 50% of the students answered correctly, and 40% of the students chose other answers, there may be confusion about knowledge points, and comparative teaching is needed.

3. Effectiveness of teaching implementation

3.1 Lide fosters people and cultivates pharmaceutical craftsmen

Take students as the center and build an education ecology. Instructional design uses corporate positions as the entry point to implement classroom teaching, strengthens comprehensive application capabilities through progressive teaching tasks, publishes learning tasks before class to increase interest, multi-dimensional classroom interesting and interactive learning in class, and after-class product display and other activities to

achieve teaching. Continuation and expansion, forming a closed loop of teaching.

Take students as the center and cultivate application ability. The teaching of “Conventional Oral Solid Preparations” refers to the actual job requirements of pharmaceutical companies to design projects, increase preparation job operating standards, and improve the pertinence and purpose of students’ skill learning, so as to cultivate students’ comprehensive application ability, especially in the workplace environment. Use and practice the basic ability of operation, improve comprehensive literacy, shorten the time for “student” to change “intern” identity conversion, and reduce the distance between learning knowledge and post operation.

3.2 Accurate evaluation, highlighting teaching effectiveness

Collect information throughout the teaching process, and adjust teaching strategies in time. The hybrid teaching under the multi—dimensional classroom focuses on the collection of information in the teaching and learning process, meeting the needs of students for immediate evaluation and process evaluation, enhancing the motivation of learning, and at the same time conducive to timely diagnosis and improvement of teaching implementation, so that teachers can adjust teaching strategies in time.

Informatization means to break through the difficulties, efficient teaching and effective compliance. According to the teaching purpose, use the online teaching platform to design classroom activities and test exercises to achieve joint school—enterprise evaluation, and use the final score to intuitively quantify the student’s learning situation and performance.

4. Features and innovation

4.1 Focus on learners and innovate multi—dimensional classrooms

Design the corresponding teaching scene according to the teaching content to meet the teaching requirements. Teaching scenarios include online cloud classes, traditional classrooms, training room teaching, learning, and doing integration, training classroom live broadcast, virtual simulation computer room, enterprise—teaching connection cross—region live broadcast, etc. A multi—dimensional classroom of technology course teaching.

4.2 Learner—centered, flexible learning hours

The modular course content makes the reasonable connection between different teaching contents, and can be customized according to the actual teaching situation, that is, to ensure the identity while taking into account the particularity. The mixed multi—dimensional classroom teaching allows students to choose the learning time in the “module” according to their own needs to meet their own learning needs.

5. Teaching reflection and improvement

With the goal of improving students’ abilities, we analyze the job groups and professional abilities corresponding to the courses, and on the premise of clear course goals, we form course standards around the goals. During the implementation process, take the completion of a teaching module as the monitoring point, keep the students as the center, and take the students’ scores before, during and after class as the main target value, diagnose the problems in the teaching implementation, improve the teaching implementation plan, and move on to the next. The teaching module is continuously improved in this cycle.

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