

Exploration on the Reform of Chemistry Experiment Course of Nursing Specialty in Higher Vocational Colleges

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Abstract: Chemistry is a public basic course for nursing majors in Higher Vocational colleges. How to improve the role of medical chemistry experiment teaching in improving nursing students' mastery of basic theory, basic operation and basic skills needs continuous reform. Chemistry education should not only serve the specialty, but also embody the requirement of citizen quality education. In order to enable students to master professional skills, but also have a good ability of sustainable development, the key is how to reform the chemistry curriculum. This paper aims to learn the chemical knowledge related to the major and set up the professional chemistry. Change the traditional teaching methods, actively create the situation of chemical problems, and strengthen the main role of students in learning. Make students have a strong interest in school chemistry.

1. Introduction

Higher vocational education is facing not only excellent development opportunities, but also great challenges. In recent years, with the expansion of the scale of running schools, the quality of students in higher vocational schools has declined, and the students' weariness of learning has become increasingly serious [1-3]. Emphasis on theory rather than practice in teaching, and the phenomenon of disconnection between theory and practice is quite common, affecting the formation of students' professional skills [4-6]. Nursing majors mainly learn the relevant scientific knowledge of Humanities and society, basic medicine, basic theory of preventive health care, basic knowledge and clinical nursing skills training, and have the basic ability to implement community health service of holistic nursing department to the clients [7-9]. In the teaching of medical chemistry, especially experimental teaching, more attention should be paid to [10-13]. Through chemical experiments, students can master basic theoretical knowledge, basic operation and basic skills. They can also cultivate the ability to observe, analyze and solve problems. For nursing students, chemical experiments can also cultivate their scientific, rigorous and meticulous work style.

2. Proposal of the Reform of Chemistry Experiment Course for Nursing Major

2.1 Reform Idea of Experimental Teaching.

In the reform of experimental teaching, we should set up the idea that experimental course is not the "teaching and assistant work" of theoretical course, but the core of vocational skill education. We should attach importance to cultivating students' practical operation ability, analysis and problem solving ability. In the past, the teacher taught the students to do the experiment. This teaching method only allows the students to verify whether the experiment results are consistent with the content of the textbook. The students can only master some mechanical operation skills, and can not get a complete experimental concept. In order to strengthen the cultivation of students' creativity and comprehensive ability, we extended the medical chemistry experiment course of nursing specialty to the second class and reformed the teaching method.

2.2 Reform of Experimental Contents around the Characteristics of Nursing Specialty.

The training goal of higher vocational education is to train applied and skilled talents, pay attention to technology. It is the combination of knowledge, technology and love. Nightingale's aim of "treating every patient with love, patience, care and responsibility" is the goal that every white-clothed Angel pursues unremittingly. This requires that in the teaching of medical chemistry, especially in the experimental teaching, we should closely focus on the goal. The experiments offered by clinical specialty and nursing specialty in many schools are basically the same, which do not really reflect the characteristics of nursing specialty. Since the graduation from college to college, the experimental teaching of medical chemistry has been reformed continuously, and the confirmatory experiments have been cancelled. All the experiments offered belong to the comprehensive and designed experiments with strong operability, and strive to improve and create conditions in the experiments. Students will provide various mobile phone opportunities, such as: solution preparation, increasing design tests, preparation of skin test solution, use of calibration pipette, determination of PH value, attaching importance to instrument debugging, etc. The first experiment should take laboratory management regulations, cleaning of experimental instruments, placement, arrangement and maintenance as experimental contents, and train students' good habits.

2.3 Current Situation of Chemical Experiment Course in Nursing Specialty.

The experiment lacks new ideas and single teaching mode. The traditional experimental teaching based on the confirmatory experiment can not mobilize the students' learning enthusiasm well. In the traditional experimental teaching, most of the selected experiments are verifiable, that is, according to the established methods, to obtain the predicted results in advance. This kind of experiment can be arranged, but also has its necessity. As a basic experiment, we should try our best to arrange in front of it so that students can master the basic experimental skills, but it can not occupy too much proportion. Otherwise, students will lose interest in the experimental lessons, have no curiosity, and students will not get a sense of achievement from each experiment. Teacher-centered teaching method has always been in the experimental teaching. In the monopoly position, it does not adapt to the teaching goal of improving students' learning ability. This model is generally teacher-centered, with teachers as the main body of experimental teaching, students as the object, students passively accept knowledge, teachers arrange what to do, teachers ask how to do, just like cooking according to the recipe, some students know to follow the experimental instruction step by step, after class, the laboratory does not remember anything. Yes. The result is that students' initiative is restrained, they can not think scientifically, they have no pleasure in discovering new phenomena and methods, they can not feel the charm of science, and they have lost many chances to understand chemistry in depth.

3. Reform Strategy of Experimental Teaching

3.1 Reform the Way of Experiment to Cultivate Students' innovative Ability.

At present, there are some problems in our school, such as students' cultural foundation, poor hands-on ability and low pass rate of nurse qualification examination. In view of these problems, in order to strengthen the cultivation of students' creativity and comprehensive ability, and change the phenomenon that students in previous experimental courses can not get a complete experimental concept only by mechanical operation, we specially set up a design experiment course, aiming at enabling students to design experimental steps personally and complete the whole experiment step by step, so as to cultivate them to think independently and analyze problems. The ability to solve problems lays a good foundation for learning clinical courses. First, at the beginning of the course, the students are informed about the arrangement of the experimental course, so that they can attach importance to the study of the experimental course. Secondly, in the design experiment class, the blackboard gives the content of the design experiment. There are four experiments, two of which are the preparation of solid solute solution and two are the dilution of solution. Students must choose one of the experiments. Before the experiment, they need to design the experimental steps.

The experiment can be started only after the teacher checks it. For students with difficulties, the experiment can be completed under the guidance of the experimental teacher.

3.2 Optimizing Experimental Content.

At present, the content of medical chemistry experiment teaching in medical colleges is relatively old, and the main content is confirmatory experiment. Because the experimental phenomena and results have been known at the beginning of the experiment, the students lack interest and motivation in medical chemistry experiment, which is not conducive to the cultivation of students' ability, but also restricts the development of students' thinking. Therefore, it is imperative to reform the content of medical chemistry experiment course. According to the training requirements of nursing professionals in medical colleges, optimizing the contents of medical chemistry experiments, focusing on training students' operational skills and innovative abilities, and effectively enhancing students' interest in experiments will improve students' active participation in medical chemistry experiment courses.

3.3 Reform and Innovation of Chemistry Experiment Teaching Model.

Chemistry is a natural science based on experiments. Through experiments, students can observe vivid and interesting chemical changes with their eyes, complete experimental skills with their hands, and experience the relationship between experimental phenomena and theoretical knowledge with their hearts. Through experiments, we can verify and deepen our understanding of the knowledge we have learned. We can also cultivate and improve students' ability to observe and use both hands and brains. We can also cultivate students' realistic scientific attitude and rigorous and meticulous work style. Therefore, chemical experiment is an indispensable and important part of chemistry course.

3.4 Strengthen the Construction of Teachers.

Efforts to improve the teaching level, teachers' rich professional knowledge and skilled operation skills are the basis for excellent completion of experimental teaching tasks. At present, most of the teachers engaged in medical chemistry experiment teaching graduated from comprehensive or normal universities. They have a good understanding of the theoretical knowledge of chemistry, but lack of understanding of medical knowledge and the relationship between medicine and chemistry. Therefore, it is necessary to improve teachers' comprehensive professional level through various ways. Firstly, we should pay attention to the cultivation of teachers' medical knowledge, and promote the accumulation and improvement of teachers' medical knowledge by organizing teaching and research activities to explore relevant medical theory knowledge and attending basic medical courses.

4. Exploration of Chemical Experiment Course for Nursing Major in Higher Vocational Colleges

4.1 Analysis of Student Survey Results.

In order to better understand the current situation of chemical learning in higher vocational nursing specialty, especially the demand for chemical knowledge in professional courses. Through the network data source, this paper investigates the chemical learning situation of nursing students in Higher Vocational colleges. The statistical results are shown in Table 1.

Table 1 Chemistry Learning Questionnaire for Nursing Majors in Higher Vocational Colleges

Serial number	Questions of investigation	Proportion
1	Students Identify Chemistry	75.1%
2	Chemistry can cultivate one's innovative spirit and practical ability	83.7%
3	Like chemistry class	37.2%
4	Fear and Difficulty in Learning Chemistry	37.7%
5	Other Reasons, Selected Chemistry	53.9%
6	Dissatisfaction with specialty	23.2%
7	Interest in chemical experiments	86.7%

From the results in Table 1, we can easily find that students are aware of the importance of chemistry learning, but not interested in chemistry learning. Students' feedback on chemistry learning is objective and real. Combining with past experience, it is necessary to pay attention to several aspects. First of all, we should solve the problem of students' interest in learning. Interest can become an important learning aid. Vivid teaching means and rich teaching connotation can effectively stimulate students' interest in learning. The establishment of learning objectives and the strengthening of professional identity can also help students to participate in learning more actively and effectively, and improve learning efficiency. Secondly, students' scientific learning methods need further training. Teaching should teach students not only knowledge, but also methods. Chemistry teaching has its own advantages in nursing specialty. It can train students' practical application ability by strengthening the connection with life and specialty. Through strengthening chemical experiment teaching, we can train students' observation ability and operation ability, and enrich students' extracurricular life by offering chemical activity courses. We can try to introduce professional cases in teaching, expand the amount of information in after-class exercises, combine with professional qualification examination, redesign chemical experiments and so on. Through these methods, I believe that it can partly make up for some of the shortcomings of the existing chemistry teaching.

4.2 Investigation and Analysis of Teachers.

Based on the survey of professional teachers' opinions on nursing-related professional courses, the results are summarized as shown in Figure 1. Firstly, nearly 30% of professional teachers believe that professional courses are closely related to chemistry, which mainly includes medicine, physiology and biochemistry. Nearly 40% of professional teachers believe that there is a certain correlation between professional courses and chemistry, and it greatly affects the learning of professional courses. It shows that it is necessary to re-integrate the design of chemistry teaching content according to the needs of follow-up courses to reflect the basic role of chemistry. Secondly, in addition to the close relationship between knowledge, nearly 85% of teachers believe that the applied ability developed in chemistry teaching also has a great role in promoting the learning of professional courses. Many teachers have repeatedly mentioned that nowadays children can not learn professional courses well not only because of the lack of correct learning attitude and learning methods, but also because of the problem of learning ability. All these require teachers of public culture to spend a lot of energy to cultivate.

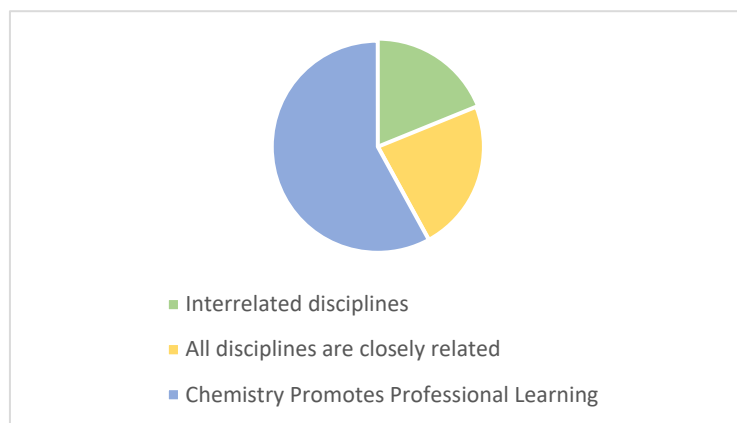


Figure 1. Investigation of Teachers'Professional Perspectives

4.3 Problems in the Reform of Chemistry Experiment Course.

Focus on ability training and improve practical teaching. From the above investigation and analysis results, we can see that the experimental course is an important part of teaching, which can make students better understand and digest theoretical knowledge, stimulate students'interest in learning, and cultivate their innovative thinking ability and certain scientific research ability. Optimize the removing of obsolete experiments from reorganized experimental projects to reduce validation experiments, increase comprehensive and exploratory experiments and practical experiments closely integrated with clinical practice, highlight the integrated cultivation of students'practical skills, and combine comprehensive ability, innovative ability and personality development. According to the requirement of the training goal of nursing specialty, adjust the content of experiment teaching, selectively weaken the knowledge which has little relation with nursing application. For example, the confirmation test of protein amphoteric dissociation and isoelectric point, the position of transaminase production, etc. Based on the detection project of common clinical diseases, the training teaching content is designed into four learning situations, and the completion of each situation can enable students to experience a complete working process. In order to obtain more intuitive work experience, accumulate practical experience, and cultivate the corresponding professional action ability. It is very important for students to learn the operation techniques of venous blood collection, transfusion and injection in the future.

5. Conclusion

In the course of medical chemistry experiment of nursing specialty in Higher Vocational colleges, through selecting experiment content, optimizing experiment content, reforming experiment mode, cultivating students'innovative ability, standardizing experiment operation procedure and paying attention to experiment phenomena, cultivating students' observation, thinking ability and improving the teaching mode of experiment examination method, stimulating students'brain thinking, strengthening students' hands-on experiment and eager for innovation. Enthusiasm, enhance students'initiative to participate in the experiment, effectively improve the quality and effect of chemical experiment teaching of nursing specialty in Higher Vocational colleges. The ability of students to analyze and solve problems has been further improved.

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