



Application of Network Teaching Platform in Higher Vocational Nursing Teaching System

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Abstract. Objective to explore the effect of network teaching platform in Five-year Higher Vocational Basic nursing teaching. After the implementation of the teaching, the final theoretical examination and skill operation examination results of the two groups were compared. Results: after the implementation of the teaching, the test group students' skill operation examination scores were higher than the control group, the difference was statistically significant; there was no significant difference between the two groups of students' final theoretical examination scores; the total score and each subscale score of the test group students' autonomous learning ability were higher than the control group, the difference was statistically significant. Conclusion: the application of network teaching platform improves the skills operation level and autonomous learning ability of five-year higher vocational nursing students.

Keywords: Network teaching platform · Teaching methods · Basic nursing

1 Introduction

In 2010, the national medium and long term education reform and development program (2010–2020) pointed out that colleges and universities should actively innovate the network teaching mode, improve teaching methods, improve classroom teaching effect, and cultivate students' Extracurricular Autonomous learning ability. The network teaching platform provides a relatively complete supporting environment, which can fully and effectively support the teachers' teaching and students' learning under the network environment. It is the basis and core of the implementation of network teaching practice. Research shows that learning burnout is common among nursing students. As the core course of nursing specialty, the teaching method of basic nursing is relatively old, and it is urgent to change the teaching mode. According to the literature review, the research on network teaching of basic nursing at this stage mainly focuses on undergraduate nursing students, while the research on five-year higher vocational nursing students is less. The purpose of this study is to apply the network teaching platform to the five-year higher vocational basic nursing teaching and evaluate its effect [1].

2 Method

2.1 Construction of Network Teaching Platform for Basic Nursing

Based on superstar teaching platform, the network teaching platform of basic nursing was constructed. Superstar teaching platform, developed by Beijing superstar Erya Education Technology Co., Ltd., is divided into PC terminal and mobile terminal, which are called “Fanya” and “Xuetong” respectively. “Fanya” is a network teaching platform, and “Xuetong” is a mobile teaching tool. Teachers build courses, edit courses, and count learning tests on PC, while students learn courses on EC or mobile, and complete assignments, tests, and exchanges. Upload teaching resources before teaching, including learning objectives of each chapter, teaching difficulties, teaching courseware, clinical cases, exercises, skill operation flow sheet, video, scoring standard, micro lesson shooting for teaching difficulties and related literature, etc. [2].

Given the input, the input of each neuron in the hidden layer is as follows:

$$u_j = \sum_{i=1}^n w_{ij}x_i - \theta_j \quad j = 1, 2, \dots, m \quad (1)$$

The output of neurons in the hidden layer was as follows:

$$O_j = f(u_j) \quad j = 1, 2, \dots, m \quad (2)$$

The output of the output layer, that is, the output of the network, is as follows:

$$y = f\left(\sum_{j=1}^m v_j O_j\right) \quad (3)$$

2.2 Teaching Method

(1) The experimental group adopted the method of combining network teaching with traditional teaching. Before class, teachers release learning notices and requirements on the teaching platform, and assign pre class learning tasks. According to the requirements, students use the course network resources to preview before class, and complete the homework together after group communication. In class, students report and show their homework in groups, and teachers comment and explain the important and difficult points, guide students to discuss and answer students’ questions. After class, students are required to upload homework to the network platform in the form of documents, pictures, videos, etc., and expand learning by using literature, website and other resources. Teachers review assignments, guide students to discuss what they have learned on the platform, and organize students to have a stage test once a month on the platform. (2) In the control group, the traditional classroom teaching was used, the teachers orally arranged the learning tasks before and after class, and the class was taught according to the syllabus. Students listen to class, discuss and answer questions, finish homework and stage test after class. (3) In the operation practice class, the two groups are in accordance with the process of teacher’s teaching, student’s group practice, reverse teaching and summary.

3 Discuss

3.1 The Application of Network Teaching Platform can Improve the Skill Operation Level of Nursing Students

Research shows that the combination of network platform and traditional classroom teaching can improve the performance of undergraduate and three-year higher vocational nursing students. The results of this study show that the application of network teaching platform is conducive to improve the performance of five-year higher vocational nursing students. Before class, students can watch the video preview operation on the network platform, and the video can be watched repeatedly. Some of the video operators are competitors of our school participating in the national, provincial and municipal operation competition [3]. The exquisite video and familiar operators fully mobilize students' learning enthusiasm. In class, students show the operation process in groups, According to the problems in the display and students' questions, teachers focus on analyzing the key and difficult points of operation, so as to make teaching more targeted; after class, students need to upload their own operation video to the teaching platform, which requires more efforts to practice operation, full communication and cooperation. By watching their own video, students can intuitively find shortcomings and promote correction. In addition, the operation assessment scoring standard is issued on the platform before class, which is convenient for students to grasp the operation details from the beginning to the end. All these are conducive to enhancing the teaching effect and improving the skill operation level of nursing students.

3.2 The Application of Network Teaching Platform can Enhance the Self-Learning Ability of Nursing Students

The self-learning ability of nursing students refers to the ability to acquire and master the necessary knowledge and skills of nursing service by using meta cognition and objective human and material resources, including self-management ability, information ability and learning cooperation ability. The results showed that the total score of self-learning ability and the subscale scores of self-management ability, information ability and learning cooperation ability of the experimental group were higher than those of the control group, which indicated that the application of network teaching platform could improve the self-learning ability of five-year higher vocational nursing students. The research of Yin Haiyan also shows that the application of network teaching platform can improve the self-learning ability of nursing students. In this study, the learning task is issued on the platform in the form of notice on time to guide and urge students to study on time; when completing the task, the active students in the group will drive the backward students and improve students' self-management ability to a certain extent. Group work promotes the communication and cooperation among students; platform discussion module provides conditions for the communication between teachers and students, cultivates the sense of cooperation and improves the communication ability. The teaching platform provides students with rich learning resources, so that students can learn to use network resources for autonomous learning, and improve the ability of information analysis.

3.3 Improve Teachers' Teaching Ability

The network teaching method also puts forward higher requirements for our teachers' teaching ability, because the traditional teaching mode does not have high requirements for teachers, and it is centered on teachers and teaching materials, and the information display form is monotonous, which is not conducive to improving teachers' comprehensive ability and broadening students' horizons. After applying the network teaching platform, especially the mobile network platform to carry out teaching activities, teachers can understand the students' pre class learning situation through the mobile app, and explain the knowledge points according to the students' Preview situation. In the teaching process, the software is used for group discussion, data access and in-depth study. Because the platform is open, it is sometimes unpredictable for students to ask some questions on the platform, so teachers need to have more professional knowledge reserves, carefully design teaching, and extensively involve in some related professional knowledge inside and outside the class, so as to improve teachers' teaching level and teaching ability. At the same time, teachers should also increase the investment of extra-curricular time, understand and master the learning state of students at any time, and enhance teachers' sense of professional responsibility and enthusiasm for teaching.

3.4 Improve the Students' Learning Initiative

The application of Hybrid Teaching Based on Pan Ya Network Platform in higher vocational nursing teaching is feasible, especially the development of mobile terminal of Pan Ya platform, which adds motivation to students' learning. Because the knowledge of internal medicine nursing is relatively more, and more boring, students will not be interested for a long time, coupled with the poor self-learning ability of higher vocational nursing students, in addition to learning the classroom knowledge, but also to learn the related subjects of self-study, students' performance will be relatively poor. In the process of self-taught examination guidance, students need to complete the study of professional courses and undergraduate courses in a limited time. For most higher vocational students, the pressure is greater, and there is a problem that teachers do not grasp the classroom knowledge firmly [4]. In the process of tutoring for self-taught examination, students need to complete both professional courses and undergraduate courses in limited time. Most vocational students are under great pressure. There are some problems, such as weak mastery of teachers' classroom knowledge and low effect of review after class [5] Fig. 1.

4 The Problems and Causes of Clinical Practice Teaching in Nursing Major of Higher Vocational Colleges

4.1 The Concept of Clinical Practice Teaching Lags Behind

With the continuous progress of the times, people's requirements for nursing are higher and higher, and modern nursing science is also developing and progressing [6]. At the initial stage, nursing focuses on patients' diseases, mainly assisting doctors, carrying out medical orders, and carrying out simple nursing operations for patients. People lack

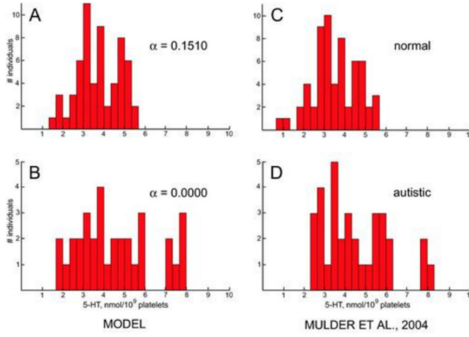


Fig. 1. Simulation result with teaching effect

attention to patients’ physical and mental health. At the development stage, people’s requirements for nursing are improved, Nursing began to take patients as the focus of work, began to pay attention to the physical and mental health of patients, and adopted a scientific way of holistic nursing for patients. In the third stage, nursing began to expand, and the nursing objects were not only limited to patients, but also extended to all people. The focus of nursing work was human health and disease prevention [7]. The concept of clinical practice teaching lags behind, as shown in Fig. 2.

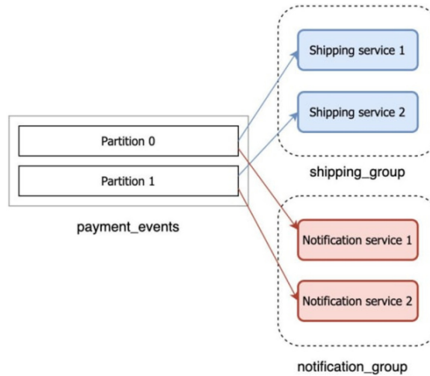


Fig. 2. The concept of clinical practice teaching lags behind

4.2 The Curriculum of Clinical Practice is Unreasonable

Through the interview with the teachers, the author found that the practice curriculum arrangement was unreasonable in the process of nursing practice teaching in higher vocational colleges. First of all, we should pay attention to theoretical study and neglect technical operation. During the period of study in school, nursing students mainly learn professional theoretical knowledge about nursing, while the mastery of operation skills

is obtained through clinical practice. In the traditional teaching, students learn professional theoretical knowledge first, and then clinical practice. The time interval is easy to cause students to forget a lot of relevant theoretical knowledge in clinical practice. In practice, it is difficult to establish a relationship with the learned theory, and it is more difficult to use theory to guide practice. In addition, most of the nursing students in Higher Vocational Colleges Experience exam oriented education, only the score pleasure brought by theoretical knowledge. Naturally, they pay more attention to the study of nursing theoretical knowledge, and despise the technical operation of nursing. Moreover, clinical practice is mainly arranged in the last academic year, which often conflicts with the time when students are looking for a job and entering a higher school, which aggravates the students' neglect of clinical practice teaching [8].

Secondly, in the process of practical teaching, the training time is less. In 2015, the Ministry of Education issued several opinions on deepening the teaching reform of vocational education and comprehensively improving the quality of personnel training, which clearly requires that the practical teaching time in vocational education should, in principle, account for more than half of the total school hours. Compared with other majors, nursing specialty is more professional, so it puts forward higher requirements for nursing students' practical operation. Therefore, reasonable setting of training time can enable students to master nursing operation technology during school, and provide great help for students' future nursing work, which is conducive to the cultivation of nursing talents. In the process of practical teaching of nursing specialty in higher vocational colleges, the teacher mentioned in the interview that the school generally only arranges students to carry out practical operation when setting up "basic nursing", and other courses usually only offer theoretical courses [9]. Moreover, when setting up practical training courses, students' practical training time is short, and some nursing students have not fully adapted to nursing clinical practice, This will have a bad impact on students' nursing career. In the process of practical teaching, there are two main reasons for the lack of training time. First, in the construction of training bases, higher vocational colleges lack of capital investment on the one hand, and on the other hand, the school land area is limited, so the number of training bases is relatively small. Due to the limitations of these objective conditions, only the time of students' training courses can be shortened, In terms of curriculum assessment, higher vocational colleges generally only focus on professional theoretical courses, so the teaching teachers focus on the teaching of nursing theoretical knowledge in the aspect of teaching design, so the arrangement of practical training courses is relatively simple [10].

4.3 Clinical Practice Sheet

In the process of clinical practice teaching, some teachers still adopt the classroom teaching mode, teaching knowledge to students by the bedside in the whole process, and the proportion of group discussion is very small, which leads to students' passive acceptance of knowledge and unable to actively participate in the diagnosis and treatment activities [11]. The communication between teachers and nursing students deprives the language communication opportunities between nursing students and patients, and the lack of interaction between students and patients leads to low learning efficiency and lack of experience. In addition, the number of nursing case discussion and clinical lectures

is less, some teachers often lack of preparation before class, do not make reasonable planning, clinical teaching is random, just repeat their usual examination process, teaching purpose is not clear, lack of organization or step by step. In this way, it is difficult for nursing students who only have basic knowledge to combine theoretical knowledge with practical operation in a short period of time. They often have little knowledge, and then they lack enthusiasm for class. At the same time, with the development of high and new technology, there are some advanced diagnosis and treatment methods, which make some teaching teachers less enthusiastic in the process of clinical practice, rely too much on advanced science and technology, rely on auxiliary examination, and then despise the teaching of teaching system, resulting in the rigid teaching model of teaching system [12]. The clinical practice chart is shown in Fig. 3.

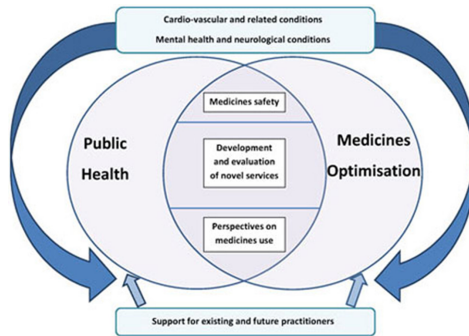


Fig. 3. Clinical practice map

5 Improvement Strategy of Clinical Practice Teaching in Higher Vocational Nursing Specialty

5.1 Changing the Concept of Practical Teaching

The main task of higher vocational nursing specialty is to cultivate technical nursing talents needed by the society [13]. Therefore, in order to cultivate qualified nursing talents, we must always pay attention to the demand of hospitals and relevant medical institutions for the professional ability of higher vocational nursing talents. At the same time, we should also pay enough attention to the relevant policies of the national medical and health industry, Renew the concept of practice teaching. Medical and health care is related to people's health, the country has invested a lot of energy and financial resources in this area. During the 12th Five Year Plan period, its development has been put in an important position. With people's continuous attention to the medical and health industry, the development of the nursing industry has also entered a new turning point. At present, with the continuous improvement of people's living standards and the continuous improvement of the medical security system, nursing education should also conform to the trend of the times [14]. On the one hand, it should broaden the service

objects, so that the service population is not limited to patients, it should be extended to all people, on the other hand, broaden the scope of service, from the hospital to the place where people live. On this basis, we should also ensure the quality and level of nursing, so that it can keep up with the trend of the times. On October 25, 2016, the “healthy China 2030” planning outline was issued by the CPC Central Committee and the State Council. The Fifth Plenary Session of the 18th CPC Central Committee put forward the strategic goal of promoting healthy China and improving people’s health. The “healthy China 2030” program is an action program to promote the construction of a healthy China in the 15 years from 2015 to 2030. The outline proposes to establish a mature and perfect medical and health service system [15].

With the continuous development and progress of the times, nursing education should also conform to the trend of the times, and constantly update the concept of practical teaching in the process of nursing teaching. First of all, in the teaching process, the teaching content should not be limited to the implementation of medical orders, dispensing, injection and other basic nursing operations, but also should teach students how to understand the patient’s condition, curative effect and psychological state, and through situational teaching, let students master communication skills, and apply it to the communication between patients and their families, Psychological nursing and health education were given to the patients. Secondly, in the process of teaching, higher vocational colleges should pay attention to the demand of medical institutions for higher vocational nursing talents’ professional ability and the change of policy environment, constantly conform to the trend of the times, adjust the content of nursing education, change the nursing service from disease-centered to health-centered, and change the attitude towards diseases from passive treatment to active prevention, To expand the nursing service population from patients to healthy people, constantly improve the teaching standards, and cultivate nursing talents needed by the society [16].

5.2 Reasonable Arrangement of Practical Courses

Nursing industry is a highly professional industry, which requires nursing graduates not only to master solid nursing professional and psychological knowledge, but also to have skilled nursing operation skills, the ability to solve practical problems in clinical nursing, and the ability to deal with things calmly. In view of the problems existing in the clinical practice teaching of higher vocational nursing specialty, the construction of reasonable practice curriculum system is the foundation.

In view of the problems existing in the practical curriculum arrangement of higher vocational nursing specialty, we can learn from the experience of more mature countries in nursing education. For example, in the United States, the relevant theoretical courses of nursing specialty should be less and more precise, the practical courses should be rich and compact, and the practical teaching should be paid attention to, so as to provide students with experience opportunities in real situations as much as possible. In view of the malpractice of the disconnection between theory and practice of the three-stage course for higher vocational nursing students, the practice course should run through the whole three years, provide students with the opportunity to experience nursing work as soon as possible, gradually acquire clinical nursing skills and accumulate clinical experience. In the process of clinical practice, teaching teachers should provide more

opportunities for students to participate in clinical practice, increase students' mobile phone meeting, and let them master operation skills in the process of continuous practice. Not only that, in the teaching process, teaching teachers should cultivate students' ability to find, analyze and solve clinical problems, and combine nursing theoretical knowledge with practice, to better improve the students' nursing skills. In the process of practice, the hospital should also take some measures. First of all, in the process of making the internship plan, we should formulate the specific content of nursing teaching ward inspection in each ward, organize the students to make a ward inspection once a week, and let the students manage the ward. Each student is assigned a ward to act as a small responsible nurse, responsible for admission and discharge, etc., so as to mobilize their internship autonomy and improve their independent practice ability. Secondly, the hospital should develop quantitative indicators of basic nursing technology operation, increase students' specialized nursing operation opportunities, and exercise their hands-on operation ability. In order to achieve the practice effect, the teaching teachers should strengthen the guidance. If some students are not proficient in nursing operation, the teaching teachers should be able to patiently explain and demonstrate the deficiencies of nursing students, and help them to check and fill the gaps.

6 Conclusion

Network teaching platform creates a modern teaching environment and provides students with high-quality learning resources. In this study, the application of network teaching platform in Five-year Higher Vocational Basic nursing teaching has achieved good results, improved the students' skill operation ability and enhanced the ability of autonomous learning. However, the theoretical assessment results of nursing students did not significantly improve, which may be related to the theory course resources are not rich enough, the form is relatively single and lack of pertinence. In the future, we should strengthen the resource construction of the theoretical course of the network teaching platform of basic nursing, strengthen the theoretical course teaching, and promote the mastery of theoretical knowledge.

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