

Application of PBL Joint Information Teaching in Medical Nursing Teaching

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Abstract—In order to compare the effects of PBL teaching method and PBL joint information teaching in the teaching of Internal Medicine Nursing, a total of 111 students from 2 nursing undergraduate classes in our school were randomly selected into intervention classes (n=55) and control classes (n=56). The intervention class implemented PBL joint information teaching method while the control classes use PBL teaching; after the end of one semester of teaching, the scores of two classes of Internal Medicine Nursing and the scores of independent learning ability were compared. The results obtained demonstrate that scores of test and self-learning ability in the intervention class were significantly higher than those in the control group ($P < 0.05$, $P < 0.01$). These results suggest that PBL combined information teaching is more conducive to improving students' learning quality and students' self-learning ability.

Keywords—PBL; Information teaching; Internal medicine nursing

I. INTRODUCTION

"Internal Medicine Nursing" is an important subject in clinical nursing. "Internal Nursing" is not only the basis of clinical nursing, but also closely related to them. Therefore, learning internal medicine nursing is the key to learning clinical courses. In the past, the teaching of internal medicine nursing courses mainly adopted PBL teaching method, and the PBL teaching method called Problem-Based Learning was based on problems, with students as the main body, in the form of group discussion, with the participation of tutors, around a certain medicine. The study process of research on topics or specific cases of diagnosis and treatment [1]. However, there are many shortcomings in the PBL teaching method. The basic knowledge of the students is not solid, and the student's learning burden is aggravated. It will make the students feel resistant and will not achieve good teaching results [2-3]. Informatization teaching is to make full use of modern information technology and information resources, scientifically arrange all aspects and elements of the teaching process, provide learners with good informational learning conditions, and realize a systematic approach to fully optimize the teaching process [4]. "Massive Open Online Course" in English is a "large-scale online open course." The emergence of the new learning platform of MOOC has created conditions for students to obtain resources more quickly and conveniently, and has become a new type of teaching [5-6]. The information-based teaching environment is not only the inheritance of traditional teaching, but also the

exploration and construction process of the new teaching mode under the technical environment.

In view of the above analysis, based on the characteristics of the theory and practice of the Internal Medicine Nursing, the PBL joint information teaching model is built in the internal nursing course of our university, and the MOOC class is used to guide students on the basis of the PBL teaching method. Self-learning. The purpose is to enable students to master the basic knowledge system with high efficiency system, while enhancing the interest and confidence of learning, and ultimately improve the overall quality of students. Through this kind of teaching reform exploration, it is hoped to provide practical basis for relevant curriculum reform.

II. MATERIALS AND METHODS

A. Study subjects

111 nursing undergraduate students in 2017, all of which are enrolled in the national unified enrollment. There is no significant difference in the scores of entrance, gender, age, public basic courses and professional basic courses, which are comparable.

B. Textbooks

Both classes of students use the "Internal Medicine Nursing" textbook (for undergraduate nursing major) edited by You Liming, published by the People's Health Publishing House. The internal teaching and research section collectively compiles the teaching plan and is approved by the college professional steering committee. Two classes of students are taught by the same teacher.

C. Teaching methods

1) Grouping

In the first classroom teaching, the teachers grouped the students. The PBL joint information teaching method adopted a random grouping method for the students. After each group of personnel was determined, a team leader was recommended to coordinate the task assignment of the personnel in the group, and urged the team members to complete the task on time.

2) Pre-study

The teacher arranges the teaching content according to the group one week in advance, including asking questions, giving the associated knowledge unit and knowledge point frame map, the video of the MOOC that requires pre-class preparation, the

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data of the synchronized practice project and the Specific requirements that need to be met.

3) *Analysis of results*

Students in the classroom showcase learning outcomes, teachers explain, discuss, summarize, and test; after class, encourage students to summarize and share their experiences in learning and practical projects on an open platform; Teachers need to analyze the problem solving of students' questions, master the knowledge of important knowledge points, and the progress of the curriculum supporting practice, and master the whole process of students' learning, so as to accumulate teaching experience .

D. *Evaluation method*

1) *Evaluation of student test scores*

The "Medicine Nursing" knowledge assessment teaching ended, the proposition test was unified according to the syllabus requirements, the water circulation was recorded, and the scores were recorded by the percentage system. The knowledge of the internal nursing knowledge of the two groups of students was compared.

2) *Evaluation of independent learning ability*

Before and after the teaching, students were evaluated by the self-learning ability scale compiled by Cheng et al. [7]. The scale includes 20 items in four dimensions: learning motivation, planning and implementation, self-management, and interpersonal communication. Using the likert level 5 score (1 to 5 points), the higher the score, the stronger the self-learning ability.

3) *Statistical methods*

The data were processed by SPSS20.0 statistical software. The t-test was used to compare the mean samples of the measurement data. The chi-square test was used to compare the sample rate of the count data. $P < 0.05$ was considered significant.

III. RESULT

It can be seen from Table 1 that the scores of the intervention class (PBL combined information teaching) were significantly higher than those of the control class (PBL) ($P < 0.05$).

It can be seen from Table 2 that the scores of students' self-learning ability and learning motivation, planning and implementation, self-management and interpersonal communication in the intervention class (PBL combined information teaching) were significantly higher than those in the control class ($P < 0.05$, $P < 0.01$).

TABLE I COMPARISON OF THE SCORES OF THE TWO CLASSES AT THE END OF THE SEMESTER ($C \pm S$)

Group	Number of people	Theoretical achievement	Skill assessment	Total score (70% theory + 30% skill)
Control class	56	67.69 ± 8.23	73.65 ± 8.32	70.13 ± 8.32
Intervention class	55	73.65 ± 8.32	83.12 ± 8.76	77.36 ± 8.41
t		3.556	6.021	4.342
P		0.001	0.000	0.000

TABLE II COMPARISON OF INDEPENDENT LEARNING ABILITY AT THE END OF TWO CLASSES ($\chi \pm S$)

Group	Number of people	Learning motivation	Planning and implementation	Self-management	Interpersonal communication	Total score
Control class	56	20.11 ± 2.89	20.49 ± 2.89	13.96 ± 2.45	14.53 ± 2.52	70.29 ± 7.49
Intervention class	55	23.08 ± 2.49	22.07 ± 2.38	15.39 ± 2.55	16.02 ± 2.88	75.79 ± 8.09
t		2.365	3.269	2.496	3.113	3.698
P		0.018	0.001	0.021	0.003	0.000

IV. DISCUSSION

PBL joint information teaching method is a kind of teaching reform for the traditional classroom teaching mode. It uses the network and video as the medium and means, and takes the students as the main body to maximize the teaching mode of students' independent learning ability. It can not only improve students' learning. Efficiency and academic achievement also play a positive role in cultivating students' comprehensive ability. In-depth theoretical research and practical research on the PBL joint information teaching method is of great significance to promote education and teaching reform and improve the quality of education and teaching.

This study applies the PBL joint information teaching method to the teaching of internal medicine nursing, arranges the teaching content before the class, asks questions, gives the associated knowledge unit and knowledge point frame map, needs the pre-class preparation of the MOOC video, and synchronizes. The practical project materials and the specific requirements that need to be met in the pre-study guide students to self-exploration and group collaborative learning, to achieve free teaching and personalized learning. The results showed that after the implementation of PBL joint information teaching, the scores of internal nursing knowledge of intervention students were higher than that of the control class ($P < 0.01$), indicating that PBL combined information teaching can effectively improve the teaching effect. The reason for the analysis is that in the process of applying PBL joint information teaching, students can use the MOOC course platform to learn relevant knowledge anytime and anywhere before the class, which can alleviate the learning burden brought by the previous PBL teaching method to a certain extent. Platform students can also communicate with each other, fully discuss and jointly find answers to the questions. Teachers can also answer questions at any time to make students' learning attitude more active, learning time increased, learning interest is more intense, and learning effect is more significant.

Further analysis found that the scores of students' self-learning ability and learning motivation, planning and implementation, self-management and interpersonal communication in the intervention class were significantly higher than those in the control group ($P < 0.05$, $P < 0.01$), indicating that they were in the teaching of internal medicine nursing. The implementation of PBL joint information teaching is conducive to improving students' self-learning ability. This study effectively integrates PBL with informatization teaching, constructs a convenient mobile learning platform for students, provides rich e-learning resources, and flexible and diverse ways of learning and communication, so that students have more autonomy in learning, fully embodying students as The Center motivates students to learn motivation, proactively manage themselves during the learning process, and develop and implement team and individual learning plans.

This research conforms to the current information-based teaching concept, and uses the information-based teaching to reform the traditional PBL learning environment. In the teaching of Internal Medicine Nursing, the preliminary exploration based on the PBL joint information teaching method has achieved

certain results, suggesting that PBL joint information teaching can become One of the effective methods for undergraduate teaching reform under the current trend of informational education. However, this study only selects the content of "Internal Medicine Nursing" to carry out PBL joint information teaching practice, and has not formed a relatively mature model for how to integrate online MOM teaching with offline classroom teaching. In addition, the number of interventions is small, teaching The time is short, and it is necessary to further improve the larger and longer-term practical research of the PBL joint information teaching model.

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