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# Application of CBL Combined with TBL Teaching Method in Experimental Teaching of Surgical Nursing

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***Abstract*—The focus of this paper was to study the application of CBL combined with TBL in the experimental teaching of surgical nursing in our school. 60 college students from Beihua University were selected and divided into two groups: control group and experimental group. The experimental group used CBL combined with TBL mode while the control group only used TBL teaching method. At the end of the period, theoretical and practical examinations were carried out, and satisfaction surveys and teaching methods were compared. Our results show that the theoretical and practical test scores of the experimental group were higher than those of the control group (p<0.05). The test group had higher satisfaction with the teaching methods of this group. The results suggest that CBL combined with TBL not only improves students' ability of independent thinking and independent learning, but also enhances students' ability to solve problems and cultivates the spirit of teamwork.**

***Keywords*—CBL; TBL; Surgical nursing; Teaching method**

## I. INTRODUCTION

Surgical nursing is a specialized subject of surgical disease patients, and its professional disciplines related to theory and nursing technology are formed based on the overall development of medical science. Learning surgical nursing can help students develop clinical nursing thinking, lay a good foundation for clinical nursing learning, and carry out clinical nursing work more stably. The experimental class is the core part of the teaching of surgical nursing. Through the study of surgical nursing operation, it helps students to apply the theoretical knowledge they learn to clinical nursing flexibly. Our school's surgical nursing experiment class is less academic. The teaching mode is mainly based on TBL teaching method. It lacks clinical practice and ability to solve practical problems. It is easy to be out of touch with the reality and cannot effectively play the role of combining experiment theory and practice.

TBL (team-based teaching method) was officially proposed by Larry K Michaelsen of Oklahoma University in the United States in 2002. It is a team-based, student-centered, PBL (question-oriented approach to teaching) approach to reforming innovation and emerging a teaching method that helps develop student teamwork and interpersonal skills. In developed countries in Europe and America, TBL teaching method has been widely accepted and adopted, but it is still in the stage of new model in China [1]. CBL (Case-Based Teaching Methodology) was pioneered by Langdell in the United States in 1870. It is case-based, problem-centered, student-centered, teacher-led group-based teaching, and is based on theory. Conducting discussions and deepening and testing students' theoretical knowledge can effectively improve students' ability to analyze and solve problems [2]. not only improved the students' learning ability but also improved the quality of teaching, and also laid a good foundation for the country to cultivate compound talents.

Both CBL and TBL methods have their own advantages and disadvantages. The separate TBL method focuses on the team's cooperation and solving problems, ignoring the coherence and systemicity of knowledge, which is not conducive to the students' comprehensive knowledge of the knowledge [3]. The application of CBL and TBL teaching mode is more common in medical colleges and universities in China, and the teaching effect has also been verified. Starting from the actual case, taking the problem as the center and taking the group discussion as the form, based on the principle of foundation, ability and reality. Mobilize students' enthusiasm and stimulate students' interest in learning [4]. In order to better achieve the students' learning goals, and to better integrate the theoretical and experimental courses, the school implemented the CBL and TBL teaching mode in the experimental teaching of surgical nursing. The specific research is as follows.

## II. OBJECT

From June 2018 to December 2018, there were 60 undergraduate students in the Department of Nursing, School of Nursing, Beihua University. All students were randomly divided into two groups, 30 in each group, divided into control group (n=30) and experimental group (n=30) group. Both groups of students participate in a complete surgical nursing course. There was no significant difference between the experimental group and the control group (age, gender, admission test, etc.) (P>0.05), which was comparable.

## III. IMPLEMENTATION METHOD

### A. Forming a learning team

The experimental group and the control group were divided into 6 groups, each group consisting of 5 students, including students of all levels. Within the group, a classmate who communicated and studied in various aspects was selected as the leader, and the group members before class. Explain the

Project of beihua university: Research on the cultivation mode of nursing undergraduate talents aiming at the construction of innovative spirit and practical ability.

CBL and TBL teaching mode and get the cooperation of the team members.

### B. Case preparation

According to the content of the course and the syllabus requirements, select appropriate and typical teaching cases, and describe in the form of PPT in the experimental class, including the patient's clinical manifestations, signs, past medical history, laboratory examination and other related content. According to the case, the corresponding teaching problems are raised. Such as the basis of diagnosis, changes in clinical performance and health education, what corresponding nursing measures need to be taken. Ask the team leader to explain.

### C. Preparation before class

Arrange homework within one week before the first experimental class, preview the contents of the experimental class, review the theoretical knowledge, and release the case to the group in advance to understand in advance, and ask the team members to divide the work reasonably and use the learning resources around them, such as computers, teaching materials, and libraries. And a variety of ways to carry out a basic understanding of the disease, such as pathogenesis, clinical manifestations, complications, related nursing skills, etc., and informed the group to conduct group and group discussions.

### D. Teaching implementation

Teachers combine the problems in clinical nursing work according to the requirements of teaching materials and syllabus, and require teachers to prepare pre-study tasks, class content, and carefully allocate teaching time, and organize team discussions and course summary. When the teacher simply explains the theoretical knowledge and skill knowledge points necessary for this lesson, he will guide the case, explain the requirements for discussing the case, and clearly discuss the case. After a brief explanation, the team leader organizes team members to start case discussion and solve problems, record the performance, status and unsolvable problems of each team member, emphasizing that all members must participate. Teachers also conduct appropriate guidance and discussion. Then, the teacher conducts a group discussion, and the team leader reports on the results of the group discussion, and the groups learn and evaluate each other. Finally, the teacher summarizes, comments and corrects. During the discussion, teachers should actively guide students to analyze problems in depth and establish critical thinking and clinical thinking.

The control group used the simple TBL teaching method, pre-study pre-study in advance of the class, the students pre-study and preparation according to the task content, the team discussed the questions raised by the teacher during the class, and finally gave the answer. Finally, the teacher shared with the students. Discuss the issues and summarize them. The experimental group and the control group were taught by the same surgical nursing teacher.

## IV. Evaluation indicators

### A. The test

At the end of the semester, focus on the curriculum focus and outline requirements for the written test (80 points) and the operation test (20 points), record the theoretical and practical results of each student, practice class to personally operate and speak the corresponding dictation . Approved by the same surgical nursing teacher.

### B. Questionnaire

At the end of the semester, 60 questionnaires were sent to students who participated in the survey. The questionnaire mainly surveyed students' satisfaction with CBL and TBL teaching methods.

### C. Statistical analysis

Statistical analysis was performed using SPSS 20.0 software. The scores of the theoretical and practical tests were analyzed by independent sample t test. The difference of $P<0.05$ was statistically significant.

## V. Results

### A. Comparison of theoretical and practical test scores

### B. Questionnaire results

A total of 30 questionnaires were distributed and 30 valid questionnaires were returned. The effective questionnaire recovery rate was 100%. The survey results are shown in the figure below.

TABLE I Comparison of the scores of the two groups of students

| Group | Theory knowledge | Perational skills |
|---|---|---|
| Test group (n=30) | 69.73±5.61 | 17.34±1.231 |
| Control group (n=30) | 68.33±4.11 | 16.01±1.01 |
| t | 3.132 | 3.045 |
| p | <0.05 | <0.05 |

TABLE II STUDENT SATISFACTION SURVEY TABLE OF THE TEST GROUP

| Survey item | Yes | No |
|---|---|---|
| 1.Whether to improve teamwork ability? | 25（83） | 5（17） |
| 2.Has it improved interpersonal communication skills? | 27（90） | 3（10） |
| 3.Whether to improve the ability of independent learning? | 29（97） | 1（3） |
| 4.Has the ability to solve problems improved? | 23（77） | 7（23） |
| 5.Did it stimulate interest in personal learning? | 21（70） | 9（30） |
| 6.Whether it improves the clinical thinking ability? | 25（83） | 5（17） |
| 7.Whether the theory and practice are effectively integrated? | 28（93） | 2（7） |
| 8.Is it better than the previous simple TBL teaching mode? | 26（87） | 4（13） |

## VI. DISCUSSION

Surgical nursing knowledge is more and more complicated. The content of the experimental course is very important for the future clinical nursing work of students. The simple TBL teaching method has defects in the experimental teaching of surgical nursing. For example, the teaching method focuses on the discussion of group members. In ignoring the coherence and systemicity of knowledge, it is not conducive to the students to fully grasp the knowledge they have learned [5]. Moreover, the curriculum lacks actual cases and can't combine theory with practice. This study found that CBL combined with TBL teaching mode can enhance students' interest in learning in the surgical nursing experiment class compared with the simple TBL teaching mode. both the theoretical and practical test scores have improved. It has been welcomed by the majority of teachers and students and deserves further promotion.

The theoretical and practical test scores of the experimental group were higher than the control group, and the difference was statistically significant ($P<0.05$). The results confirmed that the CBL combined with TBL teaching mode is superior to the TBL teaching method, which not only improves the enthusiasm of students to learn independently, but also The teacher conducted a collective analysis and discussion based on the actual clinical cases, and further deepened the students' understanding of the theoretical knowledge, and also applied the theoretical knowledge learned to the clinical nursing environment. Active classroom atmosphere and improved teacher-student relationship [6].

The number of students in the class is basically 30-40. The CBL and TBL teaching mode is based on students. Based on the team, teachers as participants, instructors and leaders, give full play to the advantages of small class, and the students are transformed from passive to initiative. Group discussions and exchanges around the case have improved the team's ability to collaborate, solve problems and change thinking. During the group discussion, each team member expressed his or her own views. Each team member expressed different opinions and learned the ideas and advantages of each other. Collaboration with each other during the experimental operation, supervising the operational processes and recording the incorrect steps has significantly improved the activity of the experimental classroom. [7] At the same time, it also enhanced the teamwork awareness and interpersonal communication skills of the students.

The development of nursing science to today, the confirmation of the first-level discipline of nursing from the second-level discipline to the State Council's degree office is not only the affirmation of nursing staff, but also the state's support for national nursing staff. With the development of economy and society, the requirements for nursing staff have also increased, but the theoretical excellence or excellent operation can not meet the needs of social development. Nursing talents need critical thinking and clinical thinking ability, and have their own judgment ability. For example, in the face of self-questioning medical advice, professional judgment and coping ability are required. The clinical nursing profession has low requirements for patient diagnosis. Therefore, many students cannot find problems when performing medical advice. In the experimental class, CBL combined with TBL teaching mode is adopted. In the future, the students will propose corresponding nursing diagnosis and nursing measures in combination with the case, and they can think independently about the problem, knowing it and knowing why [8].

## VII. OUTLOOK AND REFLECTION

First of all, the model has certain requirements for the teacher level and the student ability. It requires more time and energy for the classmates to study, and the learning pressure is greater. It is recommended that the teacher can consider the actual situation of the students when setting up the homework. In addition, the workload of teachers will increase, requiring teachers to master more solid professional knowledge, clinical operation ability and grasp of the content and time of the class. Teachers should pay attention to the selection of real, typical and moderately difficult examples of case selection. Secondly, the students are truly transformed from participants to leaders, and the students' comprehensive ability is cultivated. This model has been widely adopted by universities in foreign

countries, and has achieved good teaching results. The country is still exploring the stage.

In summary, the ability of students to learn independently, the spirit of teamwork and the awareness of innovation, college teachers should explore the appropriate teaching methods according to the actual situation, teachers based on the student's level, syllabus and teaching conditions And apply this mode. To lay a good foundation for the country to cultivate a high level of care.

## REFERENCES

[1] Lin Liyan [J] CBL and TBL in our school "3 + 2" in the high-level connection nursing professional pathology experiment teaching feasibility study nursing, Vol. 37 2019 No. 8. (In Chinese)

[2] Linda C,PatriciaW, David B. Case -based, problem-based learning Information literacy for the real world [J]. Research Strategies,2001,18(3): 181-190.

[3] Hao Yuhui, Ren Wei, Huang Jiawei, Liu Jing, Li Rong [J] CBL combined with TBL in the prevention of raw medicine teaching Chongqing Medical 2015,11,44(32)2292-2294. (In Chinese)

[4] Liu Guojie, Li Xiaona, Ma Yong, [J]. Application of PBL-TBL-CBL teaching method in medical basic chemistry course, Chemistry Education, Vol. 37, No. 10, 2016. (In Chinese)

[5] Yang Shaofen, Li Peiqin. Application of CBL combined with TBL teaching method in pathology experiment teaching[J]. Basic Medical Education, 2014, 16(12): 1050-1052. Chongqing Medical, November 2015, Vol. 44, No. 32 period. (In Chinese)

[6] Wei Honglei. Analysis of the current research status of TBL teaching method in medical education in China[J]. Health Vocational Education, 2014, 32(7): 128-129. (In Chinese)

[7] Jing Yuhong, Yin Jie, Liu Xiangwen, et al. TBL (Team-based learning) teaching. (In Chinese)

[8] The design and evaluation of learning method in the teaching of bureaucracy [J]. Chinese Higher Medical Education, 2010(9): 96-98. (In Chinese)