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# Application of Scaffolding Teaching Method in Basic Nursing Science

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## Abstract

**Objective:** In order to discuss the application effect of scaffolding teaching mode in the teaching of Basic Nursing Science. **Methods:** One class of the 2019 nursing undergraduate class in Shaoyang College was randomly selected as the control group (68 students), and the other class was selected as the experimental group (62 students). The experimental group adopted the scaffolding teaching mode, while the control group adopted the traditional teaching method. The theoretical and operational scores of the two groups of students were compared and analyzed. **Results:** The theoretical and operational scores of the experimental group were higher than those of the control group ($P< 0.05$), and the difference was statistically significant. **Conclusion:** The use of scaffolding teaching mode in the teaching of Basic Nursing is conducive to improving students' learning interest and learning effect, improving students' communication and cooperation ability, and students' satisfaction with teaching is higher.

## Keywords

Scaffolding teaching, Basic nursing, Learning effect

## 1. Introduction

Basic Nursing is the core course of a nursing major. Through the teaching of this course, the aim is to make nursing students master the basic theory, basic knowledge, and basic skills in clinical nursing work, and cultivate their ability to discover and solve clinical problems, critical thinking ability, and adaptability. However, the traditional teaching method, where teachers speak and students remember, neglects to cultivate nursing students' communication ability, problem-finding ability, problem-thinking, problem-solving ability, and ability to combine theory with practice. Students are always in a state of passive acceptance of knowledge, and because of the lack of thinking habits, the ability to transfer and apply the learned knowledge is poor. This knowledge is easily forgotten by students because it is not related to their existing experience. Nursing education experts at home and abroad generally believe that it is one of the main teaching objectives of higher nursing education to train the clinical thinking ability and professional core ability of nursing undergraduates (Journal of Nursing Science, 2018). Therefore, nursing teachers should pay attention to introducing new teaching methods in the teaching of Basic Nursing to improve students' comprehensive ability. It can be seen from the literature that scaffolding teaching mode has been applied to health assessment, Internal Medicine Nursing, Community Nursing and other disciplines, but it has rarely been reported in Basic Nursing teaching. Therefore, this topic attempts to apply the scaffolding teaching mode to undergraduate Basic Nursing teaching, compares the effect of the scaffolding teaching method after reform and the traditional teaching method in Basic Nursing teaching, and discusses the teaching method suitable for basic nursing, so as to improve the teaching quality, cultivate the comprehensive quality of students and enhance the professional level of teachers.

## 2. Object and Method

### 2.1 Object

In the 2019 nursing undergraduate class of Shaoyang University, one class was randomly selected as the control group (68 students) and the other was selected as the experimental group (62 students). The teaching plan, teaching materials, and teachers of Basic Nursing in the two groups were the same. There was no significant difference in gender and age between the two groups ($P < 0.05$), indicating comparability.

### 2.2 Research Method

#### 2.2.1 Control Group Teaching Method

The control group adopted the traditional classroom teaching method, that is, the teacher reviewed and reviewed the old knowledge in class, explained the new lesson, made the class summary, and assigned the exercises after class. Students listen carefully, interact actively, and complete exercises after class.

#### 2.2.2 Experimental Group Teaching Method

The experimental group adopted a scaffolding teaching mode: first, a teaching team was set up, which was composed of 6 teachers with 3 years or more of teaching experience, and the group leader conducted collective training for teachers two weeks before class. The second is to build a teaching platform. One week before class, teachers uploaded the scaffolding and prepared situational data to the learning channel. Other teaching resources are not uploaded. After class, teachers upload teaching resources including test questions and expansion materials. Then the teaching plan is formulated, the collective lesson preparation is carried out, and the teaching process is divided into five steps. Step 1: Teachers set up scaffolds. Teachers break down complex learning tasks around a specific task theme and gradually lead students' understanding to a deeper level. Step 2: The teacher leads the students into the situation and asks questions. Step 3: Students explore independently. Students construct their knowledge framework according to the scaffolding provided by teachers and their own experience. Step 4: Learn collaboratively. This step includes teacher-student collaboration and student-student collaboration, which is reflected in both the exploration stage and the report and summary stage of the group. The fifth step: effect evaluation. This step includes the final centralized assessment.

#### 2.2.3 Observation and Evaluation Indicators

(1) Result of Examination

Assessment results include theoretical results and operational results. At the same time, the two groups of students adopt the same set of theoretical papers for the theoretical examination and strictly implement the examination standards. After the completion of each experimental exercise, the average score of the total number of tests is taken.

(2) Satisfaction Questionnaire Survey

The experimental group was given self-designed questionnaires on teaching satisfaction, including teaching attitude, teaching form, classroom atmosphere, learning efficiency, teacher-student communication, cultivating team spirit, stimulating learning interest, etc. Students answered with "very satisfied", "satisfied", "generally satisfied", "somewhat dissatisfied", "very dissatisfied".

(3) Statistical Method

SPSS 22.0 software was used for statistical analysis of the data. The measurement data was expressed as X±S, and t t-test was used. $P < 0.05$ indicates statistically significant differences.

## 3. Result

### 3.1 Comparison of Assessment Results between the Two Groups of Students

**Table 1. The Results of the Comparison between the Two Groups of Students ($\bar{x}\pm s$)**

| Group | Number | Theoretical Results | Operational Results |
|---|---|---|---|
| Experimental Group | 62 | 81.07±7.76 | 88.12±5.16 |
| Control Group | 68 | 79.38±8.92 | 84.22±3.42 |
| *t* -value | | 3.356 | 3.568 |
| *P* -value | | 0.01 | 0.003 |

### 3.2 Evaluation of Scaffolding Teaching Mode by Experimental Group Students

**Table 2. Evaluation of the effect of scaffolding teaching method by students in experimental group (n = 62) (%)**

| Project | Very Satisfied | Satisfied | Generally Satisfied | Somewhat Dissatisfied | Very Dissatisfied |
|---|---|---|---|---|---|
| Increased interest in learning | 38(61.2) | 14(22.6) | 6(9.7) | 4(6.5) | 0 |
| Improved learning initiative | 46(74.2) | 13(21.0) | 2(3.2) | 1(1.6) | 0 |
| Help to consolidate the knowledge | 42(67.7) | 12(19.4) | 7(11.3) | 1(1.6) | 0 |
| Help to adjust the classroom atmosphere | 36(58.1) | 10(16.1) | 11(17.7) | 5(8.1) | 0 |
| Conducive to teacher-student communication | 40(64.5) | 13(21.0) | 6(9.7) | 3(4.8) | 0 |
| Cultivate team spirit | 40(64.5) | 15(24.2) | 5(8.1) | 2(3.2) | 0 |
| Cultivate the ability to solve problems | 35(56.4) | 15(24.2) | 8(12.9) | 4(6.5) | 0 |
| I like this mode of teaching | 26(41.9) | 20(32.3) | 13(21.0) | 3(4.8) | 0 |

## 4. Discussion

### 4.1 Scaffolding Teaching Mode is Conducive to Increased Students' Learning Interest

Improving students' learning interests is the basis for improving students' learning ability, communication ability, and problem-solving ability. In traditional basic nursing teaching, the teaching methods are generally not interesting, the teaching mode is relatively backward, and the students' learning initiative is not high. The scaffolding teaching model advocates for students as the center of the classroom. Teachers build scaffolding to introduce students to the situation, and students need to complete exploration tasks, similar to a game, which stimulates students' interest in learning. Driven by curiosity, students can complete their learning tasks, experience the fun of learning, and create an atmosphere of independent learning for the class. Lin Xiaochen's research also shows that scaffolding teaching can help improve students' learning interests and confidence (Papert, 2023).

### 4.2 Scaffolding Teaching Mode is Conducive to Improving Students' Learning Effect

Under the traditional teaching mode, teachers transfer knowledge and students memorize knowledge, and nursing students lack the ability to solve problems and cultivate the ability to combine theory with practice. Students rely too much on teachers to teach them new knowledge and lack the ability to learn and think independently. In teaching, teachers ask questions and leave little time for students to think, which is not conducive to in-depth discussion and effective communication. In the scaffolding teaching method, teachers will build and remove different learning scaffolds based on students' current knowledge levels and learning goals. It will introduce students to the situation, help students understand the knowledge, and complete the teaching task; Students will have more time for independent exploration; There are also more opportunities to cooperate and communicate with others in the process of solving problems; The final evaluation can also deepen the students' grasp of knowledge. All in all, scaffolding teaching mode enables students to think actively, explore actively, communicate effectively, and pay attention to evaluation so that students not only learn knowledge but also know why. This kind of knowledge, which does not rely on rote learning, can help students to integrate knowledge.

### 4.3 Scaffolding Teaching Mode is Conducive to Improving Students' Communication and Cooperation Ability

In the traditional teaching mode, students do not have many opportunities to discuss topics and communicate with each other outside the classroom, while the scaffolding teaching mode encourages students to actively behave in class and express their own views. In the exploration stage and the report and summary stage, students are encouraged to work in groups, which not only exercises their communication skills but also exercises their teamwork ability. Group discussion, group competition, group debate, and other forms can help students learn from each other, compete with each other, and cooperate with each other to achieve the purpose of promoting and improving the learning effect and enhancing team spirit. Communication and cooperation are hard problems for many students. Students exercise their eloquence and learn unity and cooperation in the process of cooperation, which can greatly help students better adapt to clinical work, and also lay a certain foundation for them to go out of the campus and enter the society. Ding Xue also confirmed in a study

that scaffolding teaching can improve collaborative learning ability (Papert, 2023).

### 4.4 Scaffolding teaching mode is conducive to cultivating students' ability to solve problems

Scaffolding teaching mode follows a "student-centered" teaching concept, which is different from the traditional teaching method that allows students to mechanically repeat and memorize what they have learned, but allows students to form their own opinions through reasoning, explanation or prediction and transfer of knowledge to deepen their understanding of what they have learned, so as to exercise their clinical thinking ability. In the stage of independent exploration, the teacher gives guidance step by step, and the teacher's suggestions vary from something to nothing, from the big to the small. Finally, the students determine the direction of inquiry and solve any problems encountered. In group debate, intergroup questioning, two-way questioning, and other activities, not only can deepen the understanding of knowledge, but also stimulate students' ability to solve problems. The research of He Xinling and Gao Yanli shows that scaffolding teaching can help nursing students improve their ability to solve practical problems, which is consistent with the results of this study (He, X., GAO, Y., & Ma, Y., 2020).

### 4.5 Scaffolding Teaching Mode is Beneficial to Improve Students' Satisfaction with Teaching

The results of this study show that students in the experimental group have a high degree of satisfaction with the scaffolding teaching mode, which may be due to the fact that the scaffolding teaching mode is different from the traditional teaching mode, which strengthens students' subjective consciousness but has stricter requirements on teachers than the traditional teaching mode. Before classroom teaching, teachers should fully understand students' learning conditions, reasonably build scaffolds and ensure that teaching is targeted and planned. Teachers create situations for students, and students are interested and motivated to complete the teaching tasks. In the process of completing the teaching tasks, students cooperate and compete with others, which exercises their ability to think and solve problems, strain ability, critical thinking ability, solidarity and cooperation ability, etc. In the evaluation stage, students see that teachers' evaluation of themselves is not limited to the results. It is also reflected in the process, which will make students feel the teacher's respect and attention to students, and feel that they are constantly improving and growing.

### 4.6 Problems in scaffolding teaching

It has been found that scaffolding teaching has a good application prospect in the teaching of Basic Nursing Science and can improve the teaching effect better, but there are also the following problems. First, it has high requirements for teachers and students. For teachers, scaffolding teaching is different from traditional teaching, and it is a great challenge to apply it for a long time. In addition, although some students agree with the scaffolding teaching mode, due to the influence of various factors, students also feel greater learning pressure. For example, it takes more time and energy to prepare and complete teaching tasks than traditional teaching methods. Second, because each student's current learning experience and basic knowledge level are very different, the nearest development area is also different, and the teacher needs to provide a variety of learning supports according to the differences of students. Third, in the process of cooperative learning, team members should assign tasks according to the difficulty of the learning content, so as to avoid insufficient thinking ability due to shared responsibilities, or inertia due to too light tasks. Fourth, the gap between members and groups should not be too large, so as to avoid the psychology of avoidance and thus cope with the discussion. Fourth, it is necessary to systematize and comprehensively the process and principles of scaffolding teaching of Basic Nursing, and further explore and innovate the teachers, so as to make the scaffolding teaching of Basic Nursing tend to mature and develop.

## 5. Conclusion

This study proves that the application of scaffolding teaching mode in the teaching of Basic nursing can not only improve students' learning interest, learning effect, and learning initiative, consolidate knowledge, adjust the classroom atmosphere, but also improve students' communication and cooperation ability, and improve students' satisfaction with teaching. However, scaffolding teaching is a complex teaching and research process (Zhou, J. & Shi, D., 2022), and it needs a long-term and continuous process to really exert its practical advantages (Wang, Q. et al., 2022). With the continuous development, improvement, and perfection of teaching technology and theory, it is believed that the scaffolding teaching mode will become more and more mature and perfect.

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