

# Research on the Reform and Practice of “Basic Nursing Skills Practice” Course Assessment

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## Abstract

**Objective:** “Basic Nursing Skills Practice” is a key course connecting classroom and clinical teaching in nursing specialty teaching. Nursing practice ability is one of the core abilities of nurse practitioners. Therefore, the teaching quality of this course is directly related to the quality of nursing work. To improve the teaching quality of practical course, the assessment reform of the “Basic Nursing Skills Practice” course was carried out among the nursing undergraduates to explore a reasonable and fair assessment mechanism. **Method:** In the assessment of “Basic Nursing Skills Practice” course, the assessment included individual skill operation assessment, virtual simulation assessment and team comprehensive skill assessment. The assessment proportion was adjusted from 100% for the final examination to 50% for the middle and final examinations respectively. The assessment method was changed from individual skills assessment at the end of the term to a combination of individual skills assessment at the midterm and virtual simulation assessment and team skills assessment at the end of the term. The method has changed from summative evaluation to a combination of formative evaluation and summative evaluation, and self-made questionnaire was used to investigate the effect. **Results:** After implementing the assessment reform, 86.84% of the students were satisfied with the assessment reform, and the percentage of students with scores above 80 reached 100%. The highest score is 93.0, while the lowest score is 83.0, and the average score was 88.0. **Conclusions:** High satisfaction of students with basic nursing skills examination reform promoted the learning effectiveness and professional emotions, cultivated comprehensive quality and ability, promoted the realization of talent training objectives.

## Keywords

Basic Nursing Skills, Nursing Education, Assessment Mechanism, Reform, Curriculum

## 1. Introduction

“Basic Nursing Skills Practice” is a key course connecting classroom and clinic in nursing professional teaching. It is not only the basis for developing various specialized nursing skills, but also one of the core competencies of nurses’ practice [1]. The practical teaching hours of basic nursing skills account for more than half of the total class hours of basic nursing courses [2]. On the basis of the goal of cultivating students’ basic nursing skills, it carries the educational goal of shaping nursing professional values, beliefs and other important qualities [3]. It is an important course that enables students to move from theory to practice [4]. Curriculum assessment is an important link in improving teaching quality and achieving teaching objectives [5], which is directly related to students’ skill level, comprehensive quality, and humanistic quality [6] [7], as well as the quality of nursing work. Therefore, our school has reformed and practiced the assessment mode of basic nursing skills practical courses, aiming to improve students’ comprehensive quality and ability, and optimize teachers’ teaching level, and provide reference basis for other course assessment work, as reported below.

## 2. Participants

40 junior nursing students were selected as the research objects by convenient sampling, including 5 boys and 35 girls, aged from 20 to 22.

## 3. Problems with the Practical Assessment

The traditional examination methods and evaluation indexes were mainly based on terminal single operation examination, which focused on skill memory, but neglected comprehensive ability assessment and process assessment. The evaluation standard overemphasized specific details and highlighted the correctness of procedures. The practice quality, teacher’s teaching quality, and students’ learning effect were mainly measured by students’ operation results on final examination day. However, there was lack of scientific examination methods and evaluation systems to assess students’ knowledge, skills, behaviors, attitudes and other abilities, resulting in students’ mechanical imitation and rote memorization of learning nursing operation skills, and their inability to integrate what had learned. After entering the clinic, they could not flexibly use the nursing skills they have learned to solve practical problems for patients.

## 4. Methods

### 4.1. Preparation for Practical Assessment Reform

To change the practical assessment mode of previous course and improve the teaching quality, the course group collected information through various ways before starting the course, understood the students’ characteristics in detail, and built the framework of the practical assessment mode. In the first class of the course, the teacher announced the significance of assessment reform, the differences before and after the reform, and introduced the assessment content, as-

assessment proportion, assessment methods, and evaluation methods so that students could have a preliminary understanding of the assessment reform.

## **4.2. Design of the Practical Assessment Reform**

### **4.2.1. Assessment Content**

The scientific and reasonable assessment content will play a positive role in promoting teaching. The content of traditional basic nursing skill practice assessment focused on individual single assessment, emphasized the unity of skill operation steps and procedures, and was lack of horizontal connection between various operations, resulting in students' insufficient understanding of the complexity of clinical operations, which is not conducive to cultivating students' overall nursing awareness and flexible response ability [1]. For these reasons, the course assessment content has been changed from the original individual skill assessment to a combination of individual skill assessment, virtual simulation single assessment, and team skill comprehensive assessment, using case studies as the carrier for assessment. The team skill assessment items are 2. The assessment content was designed based on clinical practice and clinical cases, emphasizing the combination of theory and practice, and the combination of foundation and clinical practice, emphasizing the cultivation of students' comprehensive qualities and abilities [8].

### **4.2.2. Assessment Method**

The assessment method was changed from individual skills assessment at the end of the term to a combination of individual skills assessment at the midterm and virtual simulation assessment and team skills assessment at the end of the term. The assessment team was a group of 2 people. Based on the clinical case given, the team discussed and determined the 2 nursing operations needed to solve the patient's problem, and discussed, organized, and designed operation name, items required for operation and operation steps. Each person was randomly assessed for one operation, and then gave the appropriate nursing care to the patient in the case. The details are shown in **Table 1**.

### **4.2.3. Assessment Proportion**

In the past teaching, the final examination accounted for 100%, in which the single operation examination accounted for 90%, and the student attendance accounted for 10%. After the reform, the mid-term assessment (30% for single operation assessment, 15% for practical reports, and 5% for student attendance) and the final assessment (10% for virtual simulation operation assessment, 20% for team operation assessment, and 20% for comprehensive team assessment) each accounted for 50%. The details are shown in **Table 1**.

### **4.2.4. Evaluation Methods**

The method of combining summative evaluation (final operational assessment, attendance) with formative evaluation (mid-term operational assessment, attendance) and summative evaluation (team operational assessment, virtual simulation

**Table 1.** Design of assessment content reform.

Assessment Content		Assessment Proportion (%)				Assessment Methods		Evaluation Methods	
		Pre Reform		Post Reform		Pre Reform	Post Reform	Pre Reform	Post Reform
Operation Assessment	At Ordinary Times	None	0	Yes	30	None	Single Operation Assessment	None	Formative Evaluations
	End of Term	Yes	90	Yes	20	Single Operation Assessment	Comprehensive Team Assessment	Summative Evaluations	Summative Evaluations
Virtual Assessment	End of Term	None	0	Yes	10	None	Single Operation Assessment	None	Summative Evaluations
Practice Reports	At Ordinary Times	None	0	Yes	15	Write for Each Operation	Write for Each Operation	Summative Evaluations	Summative Evaluations
Overall Evaluation	End of Term	None	0	Yes	20	None	Comprehensive Team Performance	None	Summative Evaluations
Attendance	At Ordinary Times	Yes	10	Yes	5	Regular Roll Calls	Unscheduled Roll Call	Formative Evaluations	Formative Evaluations

operational assessment, practical report, comprehensive evaluation) has replaced the summative evaluation (final operational assessment, attendance); In the comprehensive skills assessment of the team, a combination of individual assessment and comprehensive assessment is adopted. The mid-term individual assessment includes the refinement, standardization, and standardization of operating steps and procedures. The comprehensive assessment includes nine items: quality requirements, team awareness, first aid awareness, organizational and coordination ability, and humanistic care. Please refer to **Table 1** for details.

### 4.3. Evaluation of the Assessment Reform

#### 4.3.1. Evaluation of the Effectiveness of Assessment Reform

After the practical assessment, a self-made questionnaire was used to know the students' satisfaction with the assessment content, assessment ratio, assessment method, and evaluation method. There were also open-ended questions to know students' opinions about the course assessment. The questionnaire was tested by three nursing education experts and pre surveyed by 20 students. The reliability and validity of the questionnaire were retested with a reliability of 0.83 and a content validity of 0.87.

#### 4.3.2. Evaluation of Practical Performance

The total score of students is divided into five grades: Grade A (90 - 100 points, excellent), Grade B (80 - 89 points, good), Grade C (70 - 79 points, fair), Grade D (60 - 69 points, passing), and Grade E (less than 60 points, failing).

## 5. Results

### 5.1. Evaluation of the Effectiveness of Assessment Reform

After the course assessment, 40 questionnaires were sent out and 38 were recovered, with a recovery rate of 95%. The overall satisfaction of students was 86.84%. The details are shown in **Table 2**.

### 5.2. Students' Overall Scores

The percentage of students with scores above 80 is 100%. The highest score is 93.0, while the lowest score is 83.0, and the average score was 88. The details are shown in **Table 3**.

## 6. Discussions

The course of Basic Nursing Operation Skill Practice is one of the key courses connecting the classroom and the clinic in the teaching of nursing specialty. It is a vital link to cultivate students' necessary skills [1], and the quality of its assessment determines the training quality of future nursing talents. Therefore, exploring whether the assessment mode of basic nursing operational skills is scientific and effective can not only objectively reflect students' mastery and application of operational skills, but also can timely identify the problems existing in teaching. It is conducive to teaching and learning, which is of great significance to promote students' comprehensive quality and ability and the quality of teaching.

**Table 2.** Design of assessment content reform Evaluation of curriculum assessment reform (n = 38).

Projects	Very satisfied	Satisfied	Normal	Dissatisfied	Satisfaction rate (%)
Assessment Content	19	15	4	0	89.47
Assessment Ratio	15	16	5	2	81.57
Assessment Methods	20	13	5	0	86.84
Evaluation Methods	19	15	3	1	89.47
Total Satisfaction	73	59	17	3	86.84

**Table 3.** Students' overall scores (n = 40).

Grade Level	Number of people (n)	Percentage (%)
Grade A	23	57.50
Grade B	17	42.50
Grade C	0	0.00
Grade D	0	0.00
Grade E	0	0.00

## **6.1. Assessment Reform and Practice Effect**

### **6.1.1. High Satisfaction with Examination Reform Promoted Learning Effectiveness and Professional Emotions**

The study results show that students' satisfaction with the assessment reform is 86.84%, and the students' scores are all above 80 points. It indicates that students have a supportive attitude towards the examination reform, and the students' performance has improved significantly. 89.47% of the students think that the content of examination after the reform is more reasonable and comprehensive. On the one hand, the regular assessment is a kind of supervision for students, which is conducive to consolidating their knowledge and skills. In addition, virtual simulation assessment is added to the final assessment, which is rich in content, vivid and intuitive, stimulates the visual, tactile and auditory senses, and enhances students' learning interest, practical ability and independent learning ability [9], and students feel that this method is closer to the actual clinical situation and easy to integrate in learning and assessment, but they may worry about the high deduction of points for their own operation to hurt patients, which also reflects that virtual simulation practice helps to cultivate students' injury-friendly concept and safety awareness [10], shortening the transformation process from student to nurse, from classroom to clinical transformation process [11]. The study shows that the assessment reform was recognized by most students and promoted the learning effect, which is worth extending to other course assessments.

### **6.1.2. Diversified Assessment and Evaluation Has Cultivated Comprehensive Quality and Ability**

Building a diversified and developmental evaluation system based on comprehensive quality assessment [12] is the current development trend. This study shows that students' satisfaction with the assessment and evaluation methods is 88.15% on average, because the traditional examination methods focused excessively on the standardization and proficiency of skill operations, mainly measured by the assessment results of single operational skills, and used traditional summative evaluation methods, which made students less motivated to learn. The reformed assessment mode, however, adjusted the assessment ratio and adopted the assessment and evaluation methods combining clinical cases and virtual simulation, individual single and team synthesis, the process evaluation and summative evaluation, and the evaluation criteria were closely integrated with the clinic, avoiding the phenomenon of disconnection between assessment and clinic [13]. In the team comprehensive assessment, students realized that the level of one person's performance was not only closely related to themselves, but also related to the immediate interests of team members, and was motivated to study harder and more actively. In addition, the diversified evaluation method reduced the pressure and randomness of the final examination, and comprehensively and objectively tested the comprehensive quality and ability of students in terms of knowledge, operational ability, attitude, and behavior.

## 6.2. Problems and Countermeasures of the Assessment Reform and Practice

Course assessment is an integral part of the whole teaching process, and its reform can not only make an effective assessment of the teaching effect, but also have a positive promotion effect on the teaching process. However, there are still the following problems in the implementation process to be concerned and improved in the follow-up study. Firstly, the assessment ratio needs to be investigated and analyzed in depth, because 19.43% of students suggested increasing the proportion of final assessments and decreasing the proportion of lab reports. Secondly, due to the lack of controlled group and systematic evaluation, the application effect of assessment reform and practice in this study is only explored through self-constructed scale survey and grade analysis, the conclusion is more subjective, and its effect needs to be carried out through more objective indicators in the future. Thirdly, the virtual simulation training and assessment in our school is still in the preliminary exploration stage, the environment of operation training and assessment is still different from that of clinic, such as the communication with the patient. For operations such as nasal feeding, urinary catheterization, and enema, students cannot feel the pain when the patient is intubated, and can only recognize the importance of the operation and the problems to be paid attention to through the dialog box prompts, and easily overlook the importance of communication skills and cultivation of ability with different patients [11]. Therefore, virtual simulation training can only be used as an auxiliary means of assessment, and in the future, it is necessary to strengthen the “internal” construction continuously, promote the platform resource management, quality control, and resource improvement, and increase the promotion and application.

## 7. Conclusion

This study indicates that the reform of practical assessment of basic nursing skills is feasible, which not only promotes students’ learning effectiveness and professional emotions, but also helps to improve their comprehensive quality and abilities. The practical effect is obvious and is worth promoting in practical teaching of other nursing courses. Considering that the observation time and sample size of this study are limited, the conclusions have certain limitations. In the future, we will summarize and analyze the achievements and experiences, and continuously improve and consolidate the effectiveness to promote the continuous deepening and development of nursing teaching reform and the achievement of talent cultivation goals.

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## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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