

# Information-Aided Basic Nursing Teaching and the Promotion of Clinical Thinking

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**Keywords:** Information means; Basic nursing; Clinical thinking; Virtual simulation; Online learning platform

**Abstract:** In the field of nursing education, information-based teaching tools play an increasingly significant role in forging students' clinical thinking ability. This paper focuses on the application of information technology in the field of basic nursing teaching, and how these methods can help improve clinical thinking. In this paper, the concept of information-based teaching means is defined at the beginning through a detailed analysis framework, and the current situation and effect of its integration in basic nursing teaching practice are examined, and a series of experiences and lessons are summarized. Then, the article deeply analyzes the constituent elements and formation mechanism of clinical thinking, and expounds its core position in the nursing teaching system. Based on the above analysis, this paper further explores how information technology can open up a new path for the cultivation of clinical thinking, including simulating clinical situations through virtual simulation technology, and using online learning platform for case analysis and discussion. The integration of information-based teaching methods has greatly broadened teaching methods and improved teaching efficiency. It can also significantly stimulate students' autonomous learning motivation, enhance their critical thinking and problem-solving skills, and promote the overall improvement of clinical thinking level.

## 1. Introduction

As an important part of medical education, basic nursing is the basic knowledge and skills that nursing students must master [1]. It provides students with the basic framework of nursing practice and cultivates their nursing concept and professionalism. With the development of medicine, the teaching quality of basic nursing directly affects the overall level of nursing staff and the quality of medical service [2]. Clinical thinking is one of the indispensable abilities of nursing staff in their career. It refers to the process that nurses can use the knowledge, skills and experience they have learned to comprehensively evaluate, judge and analyze the condition of patients, so as to make a reasonable nursing plan [3]. The cultivation of clinical thinking is helpful for nurses to better cope with complex and changeable clinical situations, and can also improve their decision-making ability and problem-solving ability [4]. Strengthening the teaching of basic nursing is of great significance to improve the professional quality of nursing staff and the level of medical service.

At present, there are some problems in basic nursing teaching, which limit the improvement of teaching quality and effect [5]. Traditional teaching methods lack interactivity and practicality, and it is difficult to stimulate students' interest in learning. Moreover, traditional teaching methods are insufficient in cultivating students' clinical thinking, and students can only contact clinical situations through theoretical study and simulated drills, lacking real clinical experience and practical opportunities [6]. These problems cause students to feel at a loss when facing practical clinical problems, and they cannot make judgments and decisions quickly and accurately.

With the continuous development of information technology, the application of information technology in auxiliary teaching is more and more extensive. Informationization means are intuitive, interactive and practical [7]. It can break the time and space limitation of traditional teaching and provide students with richer and more vivid learning resources and experiences. In the teaching of

basic nursing, information technology can simulate the real clinical situation, make students feel the process and challenges of nursing practice and cultivate their clinical thinking and practical ability. Informatization can also provide personalized learning paths and feedback mechanisms to help students learn and improve independently according to their own learning progress and needs. In view of the problems existing in the current teaching of basic nursing and the potential and advantages of information technology in auxiliary teaching, this study aims to explore the path of assisting basic nursing teaching with information technology to promote clinical thinking. This has some innovation, that is, it combines two hot areas of information technology and clinical thinking, and provides a new perspective for the research of basic nursing teaching.

## 2. Application status of information technology in basic nursing teaching

### 2.1. The definition of information-based teaching methods

Informatization teaching means refers to a series of methods and tools that use modern information technology (computer, network, multimedia, etc.) to assist the teaching process and improve the teaching efficiency and effect [8]. In the teaching practice of basic nursing, multimedia teaching, virtual simulation technology and other information means are quite common.

Multimedia teaching shows the teaching content to students in a more intuitive and vivid way by integrating multi-media forms such as words, images, sounds and animations. This effectively enhances students' interest in learning and memory retention. Virtual simulation technology uses computers to simulate real clinical situations and allows students to practice nursing in a virtual environment. Online learning platform provides students with more flexible and convenient learning methods. No matter when and where, students can study independently and interact and communicate with teachers and classmates online.

### 2.2. Application status

In recent years, the application of information technology in basic nursing teaching has become a common practice and achieved remarkable results. Many well-known medical colleges and nursing institutions actively adopt information-based teaching methods to assist basic nursing teaching [9]. Scholars have also conducted in-depth research on the application of information technology in basic nursing teaching, and obtained a series of research results and lessons.

There are many successful cases in the practice of information-assisted basic nursing teaching. However, there are some problems and challenges in the application of information technology. When popularizing and applying information-based teaching methods, we need to fully consider relevant factors and formulate reasonable implementation plans and schemes.

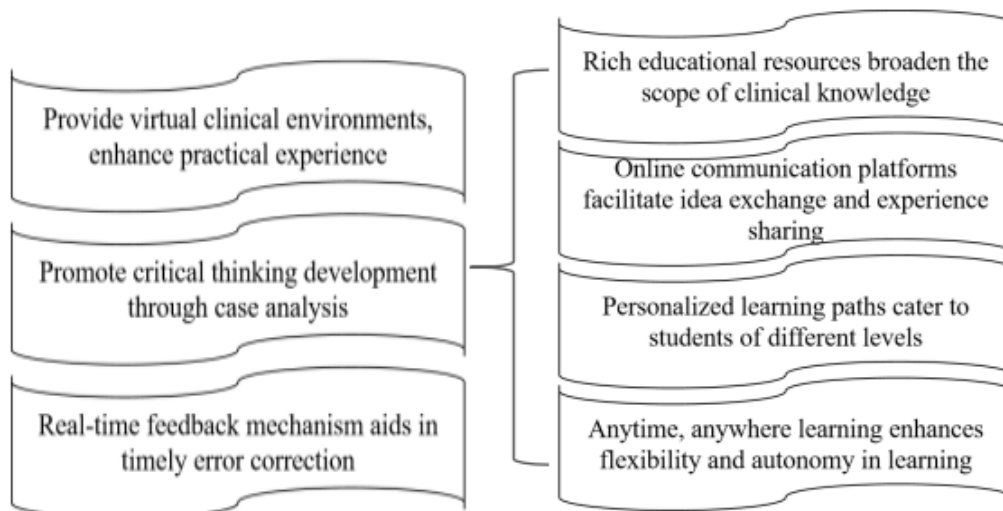


Figure 1: Unique Advantages of Information Technology Tools in Cultivating Students' Clinical Thinking

### 2.3. Information means of teaching methods and effects of change and potential role

The extensive application of information technology in the field of basic nursing teaching has significantly innovated the traditional teaching mode. This reform has eliminated the time and space obstacles in learning, and enabled students to arrange their study time freely, and carry out autonomous learning and interactive communication. It also provides richer and more vivid learning resources and experiences, and enhances students' interest in learning. These changes improve the teaching efficiency and effect, and promote the cultivation of students' autonomous learning ability and clinical thinking.

Information technology has unique advantages in cultivating students' clinical thinking. Figure 1 accurately reflects seven unique advantages of information technology in cultivating students' clinical thinking, and shows the broad potential of information technology in assisting basic nursing teaching.

## 3. Probe into the path of promoting clinical thinking by means of informatization

### 3.1. The components and formation process of clinical thinking

Clinical thinking is a process in which nurses, when facing patients, make a comprehensive evaluation, judgment and analysis of their illness by virtue of their knowledge, skills and experience, and then make a reasonable nursing plan. It mainly consists of several key elements-knowledge reserve, information processing ability, judgment and decision-making ability, and reflection and evaluation ability, as shown in Table 1:

Table 1: Key Elements of Clinical Thinking and Their Descriptions

Key Element	Element Description
Knowledge Reserve	Mastering basic medical, nursing professional knowledge, and clinical experience, providing a foundation for clinical thinking
Information Processing	Accurately and comprehensively collecting and analyzing patient information, providing a basis for judgment and decision-making
Judgment and Decision-Making	Making reasonable nursing decisions based on information processing results, ensuring optimal care for patients
Reflection and Evaluation	Reflecting on and evaluating the nursing process and outcomes, continuously optimizing clinical thinking and practice

The formation of clinical thinking is a gradual process, which requires nurses to accumulate experience and knowledge in practice and gradually form and improve through repeated practice-reflection-re-practice. It is very important to cultivate students' clinical thinking in the teaching of basic nursing. This is not only related to students' future career path, but also directly affects the quality and safety of patients' care.

### 3.2. The specific path of clinical thinking training assisted by information technology

Information technology provides new possibilities and paths for the cultivation of clinical thinking. The following are three specific cultivation methods listed in this paper:

Virtual simulation technology simulates clinical situation: With virtual simulation technology, real clinical situation can be simulated, so that students can carry out nursing practice on the spot. In this process, students need to use what they have learned to evaluate, judge and deal with the simulated patients, so as to temper their clinical thinking. Through repeated simulation practice, students can gradually become familiar with clinical procedures and improve their ability to cope with emergencies.

Online learning platform for case analysis and discussion: Online learning platform provides students with rich case resources and discussion space. Teachers can select some typical cases and consciously guide students to analyze and discuss. In this process, students need to use critical thinking to screen, analyze and evaluate the information in the case, so as to make a reasonable nursing plan. Through case analysis and discussion, students can deepen their understanding and

application of clinical thinking.

Intelligent teaching system assists clinical decision-making training: Intelligent teaching system provides a platform for students to practice clinical decision-making skills by integrating clinical decision-making support functions and simulating clinical decision-making scenarios. On this platform, students will face a variety of simulated cases. They need to use the medical knowledge, nursing theory and clinical thinking skills they have mastered to analyze and evaluate the cases in depth and formulate appropriate nursing programs. The system will also provide immediate feedback according to students' decisions, help students understand the rationality of decisions and possible problems, and then guide them to constantly revise and improve their clinical thinking. Through repeated decision-making training, students can gradually improve the accuracy and efficiency of clinical decision-making and lay a solid foundation for their future clinical work.

### **3.3. Informatization promotes the development of students' ability**

Information technology has obvious advantages and functions in assisting the cultivation of clinical thinking. Its concrete manifestation is as follows:

Promote active learning: Information technology provides rich learning resources and flexible learning methods, so that students can learn independently according to their own interests and needs. Through active exploration and practice, students can deeply understand and master the relevant knowledge and skills of clinical thinking, and enhance their initiative and enthusiasm in learning.

Cultivate critical thinking: Online learning platform and virtual simulation technology provide students with a large number of cases and practical opportunities. This allows students to constantly exercise and improve their critical thinking in practice. Through the analysis and discussion of cases, students can learn how to filter, analyze and evaluate information. Students can cultivate a more rigorous and scientific clinical thinking mode.

Improve problem-solving ability: The clinical situation and case analysis and discussion simulated by information means enable students to constantly face and solve various problems in practical operation. Through continuous practice and reflection, students can gradually improve their problem-solving ability and learn how to use clinical thinking to deal with complex and changeable clinical situations.

In a word, information technology has obvious advantages and functions in assisting basic nursing teaching and promoting clinical thinking. Virtual simulation technology to simulate clinical situations, online learning platform for case analysis and discussion and other specific paths can effectively promote the development of students' active learning, critical thinking and problem-solving ability, and improve their clinical thinking level.

## **4. Conclusions**

Information technology has brought revolutionary changes to the teaching of basic nursing. In this paper, the application of information technology in basic nursing teaching and its path to promote clinical thinking are discussed in depth. Informationization enriches teaching methods and improves teaching efficiency and effect. More importantly, it provides a brand-new platform and tool for the cultivation of clinical thinking. Through virtual simulation technology, students can simulate clinical situations and practice, so that they can exercise and improve their clinical thinking in practice. Online learning platform provides students with rich case resources and discussion space, which enables them to learn through analysis and grow up through discussion, and further cultivates their critical thinking and problem-solving ability. The use of information technology has greatly stimulated students' enthusiasm and initiative in learning. Information technology has promoted them to change from passive recipients of knowledge to active explorers of knowledge, so as to understand and master the knowledge and skills related to clinical thinking more deeply. In addition, information technology has broken the time and space restrictions, allowing students to study anytime and anywhere, laying a solid foundation for their lifelong learning.

To sum up, the application of information technology in basic nursing teaching has significant effects and advantages in promoting clinical thinking. In the future, we should continue to explore and innovate the application of information technology in nursing education, constantly improve and optimize teaching modes and methods, and make greater contributions to cultivating more nursing talents with excellent clinical thinking ability. It is also expected that more scholars and research institutions will join in this field to jointly promote the development and progress of nursing education.

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