

A Study on the Design of Teaching Methods for Nursing Education in Higher Education Based on the OBE Concept



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Abstract: Traditional nursing education is discipline-centered, and a gap persists between students' clinical competencies and the requirements of professional practice. Outcome-Based Education (OBE), which is oriented toward learning outcomes, provides a new perspective for addressing the disconnection between theory and practice. Integrating OBE into nursing education contributes to cultivating high-quality nursing professionals who meet clinical demands. This study first examines the impact of the OBE concept on nursing education in four dimensions: educational objectives, curriculum system, teaching models, and assessment methods. It further analyzes its design value in enhancing professional competency and promoting precision in instructional design and implementation. Subsequently, the study proposes several instructional strategies, including backward design of learning objectives, creation of clinically situated task scenarios, development of representative case-based resources, strengthening of virtual simulation training, and organization of collaborative group learning. These strategies provide a systematic framework for nursing education reform.

Keywords: Outcome-Based Education (OBE), nursing major, teaching methods, outcome orientation, clinical competence

1. Introduction

Traditional nursing education in higher education institutions is primarily discipline-oriented and emphasizes the transmission of theoretical knowledge. As a result, a gap often emerges between graduates' knowledge structures and the competencies required in clinical practice.

Outcome-Based Education (OBE) emphasizes backward design starting from the intended learning outcomes of students, ensuring a precise alignment between educational outputs and industry demands. The integration of the OBE framework into nursing education is conducive to addressing the persistent challenge of disconnect between theory and practice.

This study systematically discusses the reform pathways of teaching methods in nursing education under the OBE framework from three perspectives: impact analysis, value justification, and instructional strategy design.

2. Impact of OBE on Nursing Education in Higher Education Institutions

The OBE concept first exerts its influence on the positioning of educational objectives in nursing education. In traditional models, educational

objectives are determined by disciplinary knowledge systems, and curriculum content is organized according to disciplinary logic, with no explicit alignment between learning outcomes and occupational competencies required in practice (Li & Wang, 2025). In contrast, OBE requires that teaching objectives be derived in reverse from the core professional competencies expected of graduates, thereby back-mapping the learning outcomes required at each stage of education.

Under this shift, educational objectives move from "what knowledge students should acquire" to "what students are able to do," transforming education from a knowledge accumulation orientation to a competency achievement orientation. This transformation directly drives curriculum restructuring. Traditional curricula are typically arranged in a linear sequence of basic courses, professional courses, and clinical internships, often resulting in content redundancy or fragmentation across courses. Under the OBE framework, curriculum systems are integrated around competency development, breaking disciplinary boundaries and reorganizing knowledge into modular units based on clinical workflow logic (Zhao et al., 2025).

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Basic medical knowledge and nursing skill training are no longer delivered as separate strands but are integrated within the same instructional units. In addition, milestone-based competency checkpoints are embedded in the curriculum, requiring students to undergo competency assessments after each unit, with remediation provided for those who do not meet the required standards. This reconstruction of educational objectives and curriculum systems shifts nursing education from “what teachers deliver” to “what students actually achieve,” providing a clear directional foundation for subsequent pedagogical reform.

3. Design Value of Nursing Teaching Methods Based on the OBE Concept

3.1 Enhancing professional competence

The primary value of designing teaching methods under the OBE framework lies in narrowing the competency gap between academic preparation and clinical practice. In traditional nursing education, curriculum content often lags behind developments in clinical technology, and instructors may lack sufficient familiarity with the latest clinical standards, resulting in discrepancies between graduates’ competencies and hospital requirements.

Under OBE guidance, instructional design begins with the competency requirements of clinical roles, and the selection and design of teaching methods are explicitly oriented toward achieving predefined clinical capability outcomes (Zhang et al., 2025). Each instructional unit corresponds to one or more specific clinical tasks, enabling students to directly apply what they have learned in authentic or near-authentic practice settings upon completion.

Clinical situational tasks are introduced to expose students to highly simulated clinical problems within academic settings, allowing them to practice nursing decision-making in complex scenarios. Virtual simulation training compensates for the limitations of real clinical placements, which are often high-risk, high-cost, and low-frequency in terms of procedural exposure. Within a safe environment, students can repeatedly practice essential skills until mastery is achieved before entering clinical practice. This approach directly addresses the fundamental pedagogical question of “why we teach,” thereby establishing a clear occupational orientation for teaching reform.

3.2 Promoting precision in the teaching process

The second key value of OBE-based instructional design is the shift from

experience-driven to data-driven teaching processes, enabling more efficient allocation of educational resources. In traditional teaching, instructors rely primarily on personal experience to determine instructional priorities and difficulties, leading to significant variability in teaching effectiveness and a lack of clear evaluation of resource utilization (Hao et al., 2025).

In contrast, OBE-oriented instructional design follows explicitly defined competency goals, where each teaching activity is outcome-oriented. The selection of teaching methods is based on “which approach best enables students to achieve the desired outcomes,” rather than “which approach the instructor is most familiar with.” Formative assessment mechanisms continuously collect student performance data, enabling instructors to accurately identify which instructional components are effective and which require improvement.

As a result, resource allocation can be concentrated on high-impact teaching activities and on student groups requiring additional support. Although virtual simulation training requires substantial initial investment, it is reusable and scalable, providing repeated learning opportunities for large cohorts, with a significantly lower marginal cost compared to real clinical training. Similarly, effective use of case databases and standardized patient resources reduces redundancy and avoids unnecessary duplication of development efforts. Moreover, appropriately organized collaborative group learning enables high-performing students to support lower-performing peers, producing peer-assisted learning effects and reducing the need for intensive individualized instructor intervention.

4. Instructional Design Strategies for Nursing Education Based on the OBE Concept

4.1 Backward design of teaching objectives

Within the OBE framework, backward design of teaching objectives is a core instructional strategy. It requires deriving specific learning objectives for each instructional component from the intended final learning outcomes. Before designing any teaching activity, instructors must first address the fundamental question: “What should students be able to do after completing this course or unit?”

Teaching objectives are no longer structured according to textbook chapters or instructors’ academic interests, but are instead aligned with competency standards for clinical nursing graduates. The implementation of this approach operates on

three levels (Zuo, 2025).

The first level is the program-level graduation outcomes, formulated by nursing schools based on industry standards, hospital feedback, and professional accreditation requirements. These outcomes define the knowledge, skills, and professional attributes students should possess upon graduation.

The second level is course-level objectives, where each course is mapped to multiple competency indicators within the graduation outcomes. Course objectives explicitly describe the types and complexity of clinical tasks students are expected to perform after completing the course.

The third level is unit-level learning objectives, which decompose course objectives into observable performance-based outcomes for each lesson or instructional module.

Taking the “Intravenous Infusion” teaching unit as an example, the backward-designed objective is not “students understand the basic theory of intravenous infusion,” but rather that “students are able to independently complete the full procedure in a simulated ward setting, including assessment of vascular conditions, selection of puncture site, disinfection, puncture, fixation, and drip rate adjustment, with procedural compliance aligned with clinical standards and a defined success rate for first-attempt cannulation.”

This form of objective specification clearly defines expected student actions, task completion requirements, and performance standards. Backward-designed objectives are observable, measurable, and assessable, providing a solid foundation for subsequent instructional design and evaluation. By communicating learning objectives in advance, instructors enhance students’ clarity of learning direction and strengthen goal orientation in learning.

4.2 Designing clinical situational tasks

The creation of clinical situational tasks is a core strategy for transforming abstract nursing knowledge into actionable learning activities. Nursing practice is essentially grounded in decision-making and action within specific clinical contexts; therefore, decontextualized skill training cannot be effectively transferred to real-world practice.

Clinical situational tasks are designed based on authentic or highly simulated clinical scenarios, embedding learning content within challenging and realistic task structures. These tasks follow the

principle of authenticity, ensuring alignment with real clinical cases and nursing workflows, while also emphasizing comprehensiveness. Individual tasks may integrate patient assessment, nursing diagnosis, procedural skills, communication, coordination, and emergency response.

Task difficulty is matched to students’ developmental level within their Zone of Proximal Development (Dai et al., 2025). Situational tasks may be presented through written case descriptions, video-based cases, standardized patients, or virtual reality environments. Students complete tasks individually or collaboratively, applying knowledge to solve clinical problems during task execution.

In addition, task design should incorporate progression. Task complexity increases over time, shifting from single-problem scenarios to comprehensive care for multi-system diseases, and from routine situations to emergency and crisis management scenarios.

For example, in the “Nursing Care of Acute Myocardial Infarction Patients” unit, students are required to respond to a scenario in which a patient is admitted with acute chest pain, and ECG findings indicate an acute inferior myocardial infarction. Students must rapidly assess vital signs, establish intravenous access, administer medication as prescribed, monitor ECG, provide emotional support to the patient and family, and prepare for emergency percutaneous coronary intervention (Liu et al. 2025).

During implementation, instructors may introduce sudden complications, such as ventricular fibrillation, requiring students to immediately initiate resuscitation procedures. After task completion, students are required to prepare nursing documentation and deliver oral reports. Through such situational task design, students repeatedly engage in clinical decision-making and procedural practice within highly realistic simulated environments, making task completion itself a process of competency development.

4.3 Development of representative case-based resources

The development of representative clinical case resources is a foundational strategy supporting situational and case-based teaching. The construction of a case database requires close collaboration between nursing educators and frontline clinical practitioners to ensure both medical accuracy and pedagogical applicability.

Case resources are systematically organized by system, disease type, and difficulty level to facilitate

flexible instructional use. A complete teaching case typically includes patient demographic information, chief complaint and present illness, past and personal history, physical examination findings, auxiliary test results, preliminary and differential diagnoses, treatment process and nursing interventions, as well as disease progression and outcomes (Bao, 2025).

Cases may be presented in a layered and progressive manner. Initial information is provided for preliminary assessment, with additional clinical data gradually disclosed as teaching progresses, simulating the incremental nature of real clinical information acquisition.

Each case is accompanied by instructional guidance, including corresponding learning objectives, applicable teaching stages, recommended teaching methods, and assessment criteria. Case development should ensure broad coverage, including common and frequently occurring diseases, atypical presentations, and critical or emergency conditions, enabling students to engage with diverse clinical problems during training.

For instance, in a “Diabetes Nursing” course, three categories of representative cases were developed: health education for newly diagnosed type 2 diabetes patients, self-management guidance for insulin-treated patients, and wound care and infection control for patients with diabetic foot ulcers. These cases exhibit increasing levels of complexity and correspond to different learning objectives: foundational knowledge and communication skills, procedural competence and patient education, and comprehensive assessment and interdisciplinary collaboration, respectively.

The establishment of a shared case database enables efficient resource utilization, reduces repetitive lesson preparation, and allows instructors to focus on instructional design and individualized student guidance.

4.4 Strengthening virtual simulation training

Virtual simulation technology constructs a highly realistic three-dimensional learning environment, enabling students to repeatedly practice nursing procedures in a safe and risk-free setting. Virtual simulation training consists of two primary components.

The first is skill-based simulation focused on single nursing procedures requiring psychomotor coordination. Students use haptic feedback devices to simulate procedures such as intravenous puncture, urinary catheterization, and endotracheal intubation. The system provides real-time feedback on angle,

depth, and force, and incorrect operations may result in simulated tissue damage. Students can repeat procedures indefinitely, receiving immediate feedback until mastery is achieved. This type of training is particularly suitable for high-risk and low-frequency procedures such as central venous catheter care and emergency airway management.

The second type is clinical reasoning-based simulation, which focuses on decision-making in complex clinical environments. Students are required to collect patient history, conduct physical assessments, interpret laboratory results, formulate nursing plans, implement interventions, and evaluate outcomes (Sun & Li, 2025). The system dynamically adjusts patient conditions based on student decisions; incorrect decisions may lead to deterioration or complications.

This type of simulation provides a low-risk, high-fidelity environment for developing clinical judgment, allowing students to explore different intervention strategies and observe outcome variations.

For example, in a “Critical Care Nursing” course, students use simulation systems to manage early identification and resuscitation of shock patients. The system displays vital signs and clinical manifestations, requiring students to determine the type of shock, select fluid resuscitation strategies, and adjust vasoactive drug dosages. Incorrect decisions result in worsening hypotension and rising lactate levels, accompanied by system prompts such as “Condition deteriorating, reassess required.” After correction, the patient’s condition stabilizes.

Upon completion, instructors facilitate debriefing sessions in which students review operational logs and analyze key decision points. Virtual simulation training and clinical internships form a complementary relationship: simulation establishes foundational proficiency before clinical placement, improving both safety and learning efficiency.

4.5 Organizing collaborative group learning

Collaborative group learning divides students into small groups of 3–5 members to jointly complete clinical tasks. The core of collaborative learning lies in task interdependence; activities are designed such that tasks cannot be completed individually, making coordination and division of labor essential.

Pure memorization tasks are not suitable for collaborative learning. Instead, complex clinical problem-solving and comprehensive care planning tasks are most appropriate. Within groups, students

naturally assume differentiated roles, such as data collection, clinical implementation, documentation and reporting, or time management. These roles may rotate to ensure that each student develops multiple competencies.

During collaboration, students are required to articulate their perspectives, evaluate others' opinions, manage disagreements, and reach consensus—skills that are essential for clinical practice.

For instance, in a “Multiple Trauma Emergency Care” simulation, students are assigned to emergency teams functioning as hospital resuscitation units. Each group manages a virtual trauma patient from a traffic accident and must complete triage, intravenous access establishment, vital sign monitoring, wound management, and fracture stabilization in coordination with physicians.

During the process, instructors may introduce disruptive events, such as sudden respiratory arrest or heightened family emotional distress, testing the team's coordination and emergency response capabilities. After task completion, teams conduct reflective debriefing sessions analyzing collaborative effectiveness.

The instructor observes group dynamics and provides targeted feedback during the summary phase. Collaborative learning thus transforms the classroom from a competitive environment into a cooperative learning system, enhancing student engagement and learning experience.

5. Conclusion

The Outcome-Based Education (OBE) framework provides a clear and structured logic for the reform of nursing education in higher education institutions. The reconstruction of educational objectives and curriculum systems, together with changes in teaching models and assessment methods, lays a solid foundation for this reform.

By aligning closely with clinical demands and promoting precision in instructional processes, OBE highlights the practical value of instructional design in nursing education. Furthermore, key strategies such as backward design of learning objectives, implementation of clinical situational tasks, development of case-based resources, enhancement of virtual simulation training, and organization of collaborative learning collectively constitute an integrated instructional system.

Overall, OBE-oriented instructional design in nursing education enables a transformation in talent cultivation from experience-based to evidence-based

approaches, and from closed systems to open, practice-oriented frameworks, thereby offering a systematic pathway for improving the quality of nursing education.

Conflict of Interest

The author declares that she has no conflicts of interest in this work.

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