
**EXPLORING NURSING EDUCATION REFORM: A SCOPING
REVIEW OF STUDENT LEARNING, TRANSITION TO
PRACTICE, AND WORKFORCE READINESS**

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Abstract

Background

Healthcare systems worldwide are undergoing rapid transformation driven by increasing healthcare complexity, technological advancements, demographic changes, and persistent nursing workforce shortages. These evolving demands have prompted substantial reforms in nursing education to ensure graduates are adequately prepared for contemporary clinical practice. Despite curriculum modernization efforts, newly graduated nurses continue to experience transition shock, limited confidence, and challenges in translating theoretical knowledge into clinical practice. Emerging evidence suggests that fragmented curricula, inconsistent clinical learning experiences, inadequate mentorship, and insufficient academic–clinical integration continue to affect workforce preparedness.

Aim

This scoping review aimed to explore contemporary nursing education reforms related to student learning, transition to professional practice, and workforce readiness among nursing students and newly graduated nurses.

Methods

A scoping review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) framework. Literature searches were performed across PubMed, Scopus, Web of Science, CINAHL, PsycINFO, and Google Scholar for studies published between 2019 and 2026. Eligible studies examined nursing education reform, student learning, transition-to-practice experiences, clinical education, mentorship, simulation-based learning, and workforce preparedness. Data were extracted, charted, and analyzed using thematic synthesis.

Results

A total of 81 studies met the inclusion criteria. Six major themes emerged: (1) curriculum fragmentation and theory–practice gap; (2) simulation and practice-proximal learning; (3) transition shock and emotional vulnerability; (4) workforce readiness and competency development; (5) mentorship, resilience, and digital health competencies; and (6) emotional readiness and psychological resilience. The findings demonstrated that simulation-based education, competency-based curricula, structured mentorship, Dedicated Education Units (DEUs), longitudinal clinical placements, and resilience-building interventions positively influenced clinical competence, confidence, professional adaptation, and workforce readiness.

Conclusion

Nursing education reform remains essential to bridge the gap between academic preparation and clinical practice demands. Strengthening authentic clinical learning experiences, mentorship, emotional resilience, digital health competencies, and academic–clinical partnerships may enhance graduate preparedness and support a sustainable nursing workforce. Future educational models should adopt a holistic and learner-centered approach to develop competent, resilient, and practice-ready nurses capable of meeting the evolving challenges of contemporary healthcare.

Keywords

Nursing education reform; student learning; transition to practice; workforce readiness; transition shock; simulation-based education; mentorship; psychological resilience.



INTRODUCTION

Healthcare systems worldwide are undergoing unprecedented transformation driven by population ageing, the growing burden of chronic diseases, rapid technological advancements, global health emergencies, and persistent nursing workforce shortages. These evolving healthcare demands require a nursing workforce that is not only clinically competent but also adaptable, resilient, technologically proficient, and capable of delivering safe, evidence-based, and person-centred care. Consequently, nursing education has become a critical area of reform to ensure that graduates are adequately prepared for the complexities of contemporary healthcare practice.

Traditionally, nursing education has been criticized for its limited ability to bridge the gap between theoretical knowledge and clinical practice. Despite curriculum reforms and advances in teaching methodologies, newly graduated nurses frequently report feelings of uncertainty, anxiety, emotional distress, and lack of confidence during their transition into professional practice. This phenomenon, commonly described as transition shock, remains a significant concern globally and has been associated with reduced job satisfaction, burnout, workforce attrition, and compromised patient care outcomes.

Recent literature highlights persistent challenges affecting graduate preparedness, including fragmented curricula, inconsistencies in clinical education, inadequate mentorship, limited exposure to authentic clinical experiences, and insufficient integration between academic institutions and healthcare organizations. These challenges contribute to the well-documented theory–practice gap, whereby nursing students struggle to translate classroom learning into effective clinical decision-making and professional practice. As healthcare environments become increasingly complex, ensuring workforce readiness has emerged as a priority for nursing educators, healthcare organizations, and regulatory bodies.

Although numerous educational reforms have been implemented internationally, evidence regarding their effectiveness in improving student learning, transition-to-practice experiences, and workforce readiness remains fragmented. Furthermore, emerging areas such as emotional resilience, digital health competence, cultural safety, and mentorship require greater exploration within the context of nursing education reform. A comprehensive synthesis of current evidence is therefore needed to identify existing strengths, challenges, and opportunities for future development.

Accordingly, this scoping review aims to explore contemporary nursing education reforms related to student learning, transition to professional practice, and workforce readiness among nursing students and newly graduated nurses.

Objectives

1. To map the current evidence on nursing education reforms influencing student learning, transition to professional practice, and workforce readiness.
2. To identify key challenges and gaps related to theory–practice integration, transition-to-practice experiences, competency development, and emotional preparedness among nursing students and newly graduated nurses.
3. To explore educational strategies and innovations, including simulation-based learning, mentorship, competency-based curricula, and digital health education, that support workforce preparedness and professional adaptation.
4. To identify emerging areas for improvement in nursing education, including emotional resilience, cultural competence, digital literacy, and academic–clinical partnerships.
5. To provide evidence-informed recommendations for strengthening nursing education and enhancing the preparedness of future nurses for contemporary healthcare environments.

2. METHODS

2.1. Search Strategy

This scoping review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) guidelines proposed by Tricco et al. (2018) to ensure transparent and comprehensive reporting of evidence.

A comprehensive literature search was conducted across multiple electronic databases including PubMed, Scopus, Web of Science, CINAHL, PsycINFO, and Google Scholar. The search included peer-reviewed studies published between January 2019 and March 2026.

The search strategy combined Medical Subject Headings (MeSH), keywords, and Boolean operators (AND, OR). Search terms included:

- “Nursing education reform”
- “Student learning”
- “Transition to practice”
- “Workforce readiness”
- “Clinical competence”
- “Transition shock”
- “Simulation-based learning”
- “Mentorship”
- “Dedicated Education Units”
- “Digital health competencies”

Reference lists of selected studies were also manually screened to identify additional relevant publications

2.2. Inclusion and Exclusion Criteria

Studies were selected based on predefined inclusion and exclusion criteria aligned with the review objectives.

Table 1. Concept and Search Terms Used in the Review

Concept	Search Terms
Nursing Education Reform	“nursing education reform” OR “curriculum reform” OR “competency-based nursing education”
Student Learning	“student learning” OR “clinical learning” OR “experiential learning”
Transition to Practice	“transition to practice” OR “transition shock” OR “graduate nurse transition”
Workforce Readiness	“workforce readiness” OR “clinical preparedness” OR “professional competence”
Simulation Learning	“simulation-based learning” OR “high-fidelity simulation” OR “virtual simulation”
Mentorship and Support	“mentorship” OR “preceptorship” OR “nurse residency program”
Digital Competencies	“digital literacy” OR “AI in nursing education” OR “health informatics”

Inclusion Criteria

Studies were included if they:

1. Focused on undergraduate or postgraduate nursing education.
2. Examined nursing education reforms, student learning, transition experiences, or workforce readiness.
3. Included nursing students, newly graduated nurses, nurse educators, or clinical preceptors.
4. Were peer-reviewed research articles.
5. Were published in English between 2019 and 2026.

Exclusion Criteria

Studies were excluded if they:

1. Focused exclusively on medical or allied health education.
2. Were editorials, conference abstracts, commentaries, dissertations, or opinion papers.
3. Did not address workforce readiness, transition-to-practice, or educational reform.
4. Were duplicate publications.

2.3. Study Screening

All identified records were exported into a reference management system, and duplicate studies were removed prior to screening.

The screening process occurred in three stages:

1. Title screening
2. Abstract screening
3. Full-text review

Initially, 1,346 records were identified through database searching. After removing 312 duplicate records, 1,034 studies underwent title and abstract screening. A total of 876 studies were excluded due to irrelevance to the review objectives.

Subsequently, 158 full-text articles were assessed for eligibility. Following full-text evaluation, 77 studies were excluded because they did not meet the inclusion criteria or lacked sufficient methodological relevance.

Finally, 81 studies were included in the final scoping review synthesis.

2.4. Data Extraction and Analysis

Data extraction was performed systematically using a standardized charting form developed by the reviewers. Extracted information included:

- Author(s)
- Publication year
- Country of study
- Study design
- Participant characteristics
- Educational interventions
- Main findings
- Recommendations

Thematic synthesis was used to analyse extracted data. Findings were grouped into recurring concepts and themes related to nursing education reform, transition-to-practice experiences, and workforce readiness.

Six major themes emerged:

1. Curriculum fragmentation and theory–practice gap
2. Simulation and practice-proximal learning
3. Transition shock and emotional vulnerability
4. Workforce readiness and competency development
5. Mentorship, resilience, and digital health competencies
6. Emotional Readiness and Psychological Resilience

3. RESULTS

The study selection process followed the PRISMA-ScR checklist to ensure transparent and systematic reporting of findings. A total of 1,346 records were identified through database searching. After removal of 312 duplicate records, 1,034 studies remained for screening. Following title and abstract screening, 876 articles were excluded. A total of 158 full-text articles were assessed for eligibility. Among these, 77 studies were excluded due to:

- Irrelevant study focus
- Non-nursing population
- Lack of workforce readiness outcomes
- Commentary or editorial format
- Insufficient methodological rigor

Finally, 81 studies met the inclusion criteria and were included in the final scoping review.

The included studies represented diverse geographical settings including the United States, United Kingdom, Australia, Canada, India, and Scandinavian countries. Study designs included qualitative studies, mixed-method research, cross-sectional surveys, longitudinal studies, and integrative reviews.

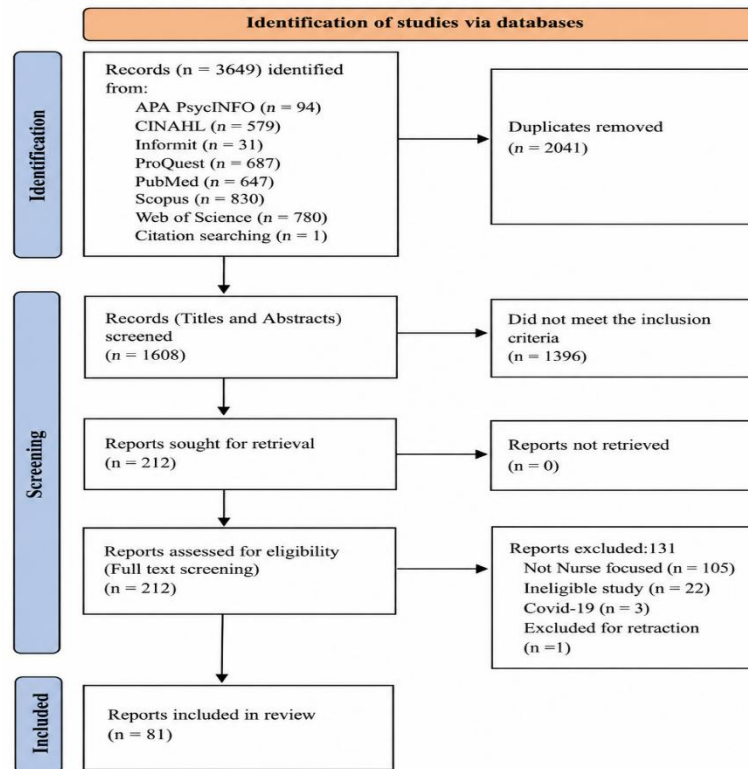
Thematic synthesis identified six major themes:

1. Curriculum fragmentation and theory–practice gap
2. Simulation and practice-proximal learning
3. Transition shock and emotional vulnerability
4. Workforce readiness and competency development
5. Mentorship, resilience, and digital health competencies
6. Emotional Readiness and Psychological Resilience

Simulation-based education, competency-oriented curricula, mentorship programs, and longitudinal clinical placements were consistently associated with improved clinical confidence, professional competence, and workforce adaptation among nursing students and newly graduated nurses.

3.1. PRISMA-ScR Flow Diagram

Figure 1. PRISMA-ScR flow diagram of study selection process



The PRISMA-ScR flow process illustrating identification, screening, eligibility assessment, and final inclusion of studies is summarized below.

Emerging Themes

Thematic synthesis of the included studies identified six major themes related to nursing education reform, student learning experiences, transition-to-practice challenges, and workforce readiness.

Theme 1: Curriculum Fragmentation and Theory–Practice Gap

The theory–practice gap emerged as one of the most frequently reported concerns across nursing education systems. Nursing students and newly graduated nurses often experienced difficulty translating theoretical knowledge into real-world clinical practice. Fragmented curricula, inconsistent teaching methods, and limited integration between academic and clinical settings negatively influenced clinical preparedness and confidence.

Several studies reported that insufficient collaboration between educational institutions and healthcare organizations contributed to inconsistencies in clinical expectations and competency development.

Theme 2: Simulation and Practice-Proximal Learning

Simulation-based education emerged as a major reform strategy in nursing education. High-fidelity simulation, virtual reality learning, and scenario-based teaching approaches improved:

- Clinical reasoning
- Decision-making skills
- Communication abilities
- Psychomotor competence
- Clinical confidence

Practice-proximal educational models such as longitudinal clinical placements and Dedicated Education Units (DEUs) enhanced experiential learning and facilitated smoother transition into professional practice.

Theme 3: Transition Shock and Emotional Vulnerability

Transition shock remained highly prevalent among newly graduated nurses. Studies consistently reported experiences of anxiety, stress, self-doubt, fear of making clinical errors, emotional exhaustion, and workplace pressure during the transition from student to professional nurse.

Factors contributing to transition shock included:

- Heavy workload
- Inadequate clinical exposure
- Workplace incivility
- Lack of mentorship
- Limited emotional support systems

Structured orientation programs and nurse residency initiatives were associated with improved adaptation and reduced professional stress.

Theme 4: Workforce Readiness and Competency Development

Healthcare employers increasingly expect nursing graduates to demonstrate:

- Clinical competence
- Leadership abilities
- Critical thinking
- Time management

- Interprofessional collaboration
- Communication skills
- Cultural competence
- Digital literacy

Despite curriculum reforms, many newly graduated nurses continued to report feeling underprepared in emergency response, prioritization, delegation, and leadership responsibilities.

Competency-based curricula and experiential learning approaches positively improved workforce preparedness and professional confidence.

Theme 5: Mentorship, Resilience, and Digital Health Competencies

Mentorship and supportive learning environments were consistently identified as critical factors promoting professional growth and workforce retention. Positive mentor-preceptor relationships improved:

- Clinical confidence
- Emotional support
- Professional identity formation
- Workplace adaptation

Recent literature also emphasized the importance of digital health competencies, informatics education, and artificial intelligence (AI) literacy in modern nursing curricula.

Resilience-building interventions such as mindfulness training, reflective practice, stress management education, and peer support programs contributed positively to emotional well-being and coping abilities.

Theme 6: Emotional Readiness and Psychological Resilience

Emotional readiness and psychological resilience emerged as increasingly important components of nursing workforce preparedness. Studies highlighted that nursing students and newly graduated nurses frequently encounter emotionally demanding clinical situations, including patient suffering, death, ethical dilemmas, workplace stress, and high-acuity care environments.

Insufficient emotional preparedness negatively affected confidence, decision-making, professional adaptation, and retention within the nursing workforce. Several studies emphasized that emotional resilience is essential for sustaining professional performance and preventing burnout, compassion fatigue, and psychological distress.

Educational interventions supporting emotional readiness included:

- Reflective journaling
- Debriefing sessions
- Emotional intelligence training
- Resilience workshops
- Peer-support programs
- Mindfulness-based stress reduction strategies

Programs integrating psychological support and resilience training demonstrated improved coping mechanisms, emotional regulation, self-efficacy, and professional identity development among nursing students and graduate nurses.

The findings suggest that emotional preparedness should be recognized as a core competency within contemporary nursing education reform initiatives.

4. DISCUSSION

This scoping review identified substantial reforms occurring within contemporary nursing education systems globally. The findings reveal persistent challenges related to theory–practice gaps, transition shock, workforce readiness, emotional preparedness, and technological adaptation despite ongoing curriculum modernization efforts. While nursing education has evolved significantly through competency-based curricula, simulation-enhanced learning, and digital innovations, evidence suggests that many graduates continue to experience difficulties translating academic knowledge into effective clinical practice.

The findings reinforce longstanding concerns regarding the disconnect between academic preparation and clinical realities. Similar to previous studies, this review found that fragmented curricula, inconsistent clinical learning experiences, and variability in teaching approaches negatively influence students' preparedness for professional practice. Nursing students frequently report challenges in applying theoretical concepts to complex and unpredictable clinical situations, particularly in areas requiring prioritization, critical thinking, interprofessional collaboration, and clinical decision-making. These findings suggest that educational institutions must strengthen alignment between classroom instruction and real-world healthcare environments to reduce the theory–practice gap.

Simulation-based education emerged as one of the most influential educational reforms identified across the literature. High-fidelity simulation, virtual simulation, and scenario-based learning were consistently associated with improvements in clinical reasoning, psychomotor competence, teamwork, communication skills, and self-confidence. Importantly, simulation provides students with psychologically safe opportunities to practice high-risk clinical situations without compromising patient safety. However, the findings indicate that simulation alone cannot replace authentic clinical exposure. Rather, simulation should function as a complementary strategy



integrated with meaningful clinical placements, reflective learning activities, and supervised practice experiences.

Structured mentorship programs, nurse residency initiatives, preceptorship models, and supportive clinical learning environments were repeatedly identified as protective factors that improve graduate adaptation and workforce retention. Effective mentorship promotes professional socialization, confidence development, clinical competence, and emotional support. The findings suggest that transition-to-practice programs should be considered an essential component of workforce development rather than an optional support strategy. Establishing structured and evidence-based transition frameworks may significantly improve graduate nurse retention and long-term workforce sustainability.

The review further demonstrates that workforce readiness extends beyond clinical competence alone. Contemporary healthcare environments require graduates to possess leadership capabilities, adaptability, communication skills, cultural competence, digital literacy, and emotional intelligence. Healthcare employers increasingly expect nurses to function effectively within multidisciplinary teams while navigating rapidly evolving technological and organizational changes. Consequently, nursing education must adopt a holistic perspective of readiness that encompasses cognitive, technical, interpersonal, and professional competencies.

The increasing integration of artificial intelligence, digital health technologies, telehealth systems, and electronic health records represents another important dimension of nursing education reform. Digital technologies offer opportunities to enhance personalized learning, clinical reasoning, and access to educational resources. Nevertheless, concerns regarding academic integrity, ethical decision-making, data privacy, and reduced human interaction require careful consideration. The findings suggest that future nursing curricula should explicitly incorporate digital health competencies, informatics education, and AI literacy to prepare graduates for technology-driven healthcare environments.

The findings indicate that resilience should be viewed as a professional competency rather than an individual personality trait. Educational strategies such as reflective practice, structured debriefing, mindfulness training, peer-support programs, emotional intelligence development, and stress-management education demonstrated positive outcomes in supporting psychological well-being and professional adaptation. Embedding these approaches throughout nursing curricula may improve students' coping abilities, professional identity formation, and long-term career sustainability.

Several important gaps within the literature were also identified. First, cultural safety and diversity-responsive education remain insufficiently addressed despite increasing multiculturalism within healthcare systems. Second, digital health and informatics competencies are inconsistently incorporated into nursing curricula despite growing reliance on healthcare

technologies. Third, trauma-informed educational approaches remain underdeveloped despite evidence demonstrating the impact of psychological stress on learning and professional performance. Finally, feedback literacy—the ability of students to effectively interpret and apply feedback for learning improvement—was rarely discussed despite its importance for lifelong professional development.

Collectively, these findings suggest that nursing education must move beyond isolated curriculum reforms toward a comprehensive and integrated model of workforce readiness. Future educational frameworks should combine competency-based learning, authentic clinical integration, digital preparedness, emotional resilience development, cultural responsiveness, and structured transition support. Such an approach would not only prepare graduates to enter the workforce but also equip them to thrive, lead, innovate, and respond effectively to the complexities of contemporary healthcare practice.

Overall, this review highlights that workforce readiness is a multidimensional construct influenced by educational, clinical, emotional, technological, and organizational factors. Addressing these interconnected dimensions through evidence-informed nursing education reforms is essential for developing a resilient, competent, and future-ready nursing workforce capable of meeting evolving healthcare demands.

Implications for Nursing Education and Practice

The review findings suggest several implications:

1. Nursing curricula should prioritize competency-based and practice-oriented learning.
2. Simulation-based education should be integrated consistently across nursing programs.
3. Dedicated Education Units and longitudinal placements may strengthen clinical readiness.
4. Structured transition-to-practice programs should be implemented universally.
5. Resilience training and psychological support should be embedded within nursing curricula.
6. AI literacy, digital health competencies, and informatics education should become essential educational components.
7. Stronger collaboration between academic institutions and healthcare organizations is necessary to reduce theory–practice gaps.

Limitations

The review included only English-language studies, potentially excluding important international evidence. Variability in study designs and educational contexts limited direct comparison across findings. Additionally, rapidly evolving educational technologies may result in emerging evidence not captured during the review period.



Conclusion

This scoping review highlights the ongoing transformation of nursing education and the need for continued reforms to strengthen student learning, transition-to-practice experiences, and workforce readiness. Despite advancements in competency-based curricula, simulation-based learning, and digital education, challenges such as theory–practice gaps, transition shock, inconsistent mentorship, and emotional vulnerability continue to affect nursing graduates.

The findings suggest that practice-proximal learning, high-fidelity simulation, structured mentorship, resilience-building strategies, and strong academic–clinical partnerships play a crucial role in enhancing graduate preparedness and professional adaptation. Furthermore, integrating digital health competencies, cultural responsiveness, and emotional readiness into nursing curricula is essential to meet the evolving demands of contemporary healthcare systems.

A holistic and future-focused approach to nursing education is required to develop competent, resilient, and practice-ready nurses who can confidently navigate complex healthcare environments and contribute to sustainable workforce development.

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