

Fostering clinical leadership in nursing education: insights for curriculum integration and teaching methods

Literature summary (WP4)

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Introduction

This literature summary was conducted as part of Work Package 4 (WP4), the clinical leadership library, within the Erasmus+ KA220-HED project *Clinical Leadership in Nursing Education* (CLNE).

Previous project activities focused on developing a clinical leadership framework and identifying gaps between current nursing education and the leadership competencies expected of graduate nurses. Building on this work, WP4 aims to identify and share educational approaches that foster bedside clinical leadership among bachelor-level nursing students.

Against this background, a structured literature summary was undertaken to explore how clinical leadership is integrated into undergraduate nursing curricula and which educational approaches are used to support its development.

The literature summary addresses two central questions: (1) why and how clinical leadership is structurally integrated into undergraduate nursing curricula, and (2) which teaching methods and materials are used to foster its development. By synthesising evidence across curriculum models and educational approaches, the literature summary seeks to identify principles that can inform curriculum design and pedagogical decision-making.

The findings presented in this report are based on a structured analysis of the literature and are complemented by ongoing discussions and reflections within the project consortium.

The findings are intended to inform the development of an open-access clinical leadership library and to support educators in designing nursing programmes that prepare students for their leadership role in clinical practice.

HOW TO USE THIS LITERATURE SUMMARY

Whether you are involved in curriculum design, teaching, clinical supervision, educational leadership, policy development or research, this literature summary offers insights that may inform your work. Depending on your role and interests, different sections may be particularly relevant.

Your role	Your question → where to look	Key topics
Nursing educators	**Looking for teaching strategies?** → Part B: Teaching methods	Simulation • Reflection • Coaching
Curriculum developers	**Designing or revising a curriculum?** → Part A: Curriculum integration	Leadership threads • Milestones • Progression
Clinical supervisors & practice partners	**Supporting students during placements?** → Experiential and practice-based learning → Reflective and relational learning	Role modelling • Feedback • Workplace learning
Educational leaders & policymakers	**Shaping educational strategy?** → Part A: Curriculum integration → Discussion	Graduate outcomes • Partnerships • Implementation
Researchers	**Interested in evidence and future directions?** → Discussion → Table: References mapped to each clinical leadership domain	Assessment • Evidence gaps • Future priorities

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1. Background

This literature summary was conducted as part of Work Package 4 (WP4), the clinical leadership library, within the Erasmus+ Clinical Leadership in Nursing Education (CLNE) project. Building on earlier project activities that developed a clinical leadership framework and identified educational gaps, WP4 focuses on identifying and sharing teaching practices that foster bedside (non-hierarchical) clinical leadership among bachelor-level nurses.

Clinical leadership is increasingly recognised as a key competency for nurses (James et al., 2021). In this project, clinical leadership is defined according to Grindel's description of the bedside clinical leader as "an empowered clinical expert who provides direct patient care, demonstrates emotional intelligence, challenges ineffective work processes, inspires others to act, and recognises their professional, ethical and autonomous role in decision-making within interprofessional teams." (Grindel, 2016). This definition, which reflects a broad body of nursing leadership literature, positions clinical leadership explicitly within everyday patient care and emphasises relational, practice embedded influence rather than formal authority.

Nurse leaders at the bedside are empowered professionals who demonstrate emotional intelligence, challenge ineffective work processes, and inspire others to act. They engage in decision-making related to patient care and nursing practice within interprofessional teams, recognising their autonomy and ethical responsibilities. Clinical leadership is associated with a broad set of competencies, including communication, interpersonal skills, delegation, teamwork, and critical thinking. It also involves reflective practice, information technology, problem solving, and the ability to work with diversity. Additional relevant skills and behaviours include accountability, teaching, supervision, decision-making, delegation, and conflict identification and resolution (Brown, Crookes, et al., 2016; Brown, Dewing, et al., 2016b). Across these competencies, the ability to influence *others* is central: articulating clinical concerns, mobilising colleagues, advocating for patients and aligning actions to shared goals are key expressions of bedside leadership (Cook, 2001; Grindel, 2016; Kouzes & Posner, 2010).

Clinical leadership is generally understood as a practice embedded form of influence enacted by nurses who are directly involved in patient care and who use their clinical expertise, judgement, and interpersonal skills to shape care processes and outcomes (Grindel, 2016). Unlike hierarchical leadership models, bedside clinical leadership is grounded in the nurse's proximity to patients and teams, with clinical expertise, not formal authority, serving as the foundation of leadership action (Grindel, 2016). This literature summary therefore focuses on clinical leadership as enacted at the bedside by EQF6 (bachelor level) nurses.

Together, these definitions frame bedside clinical leadership as a set of behaviours through which nurses

shape care processes, mobilise colleagues and engage in collaborative decision-making. This combined framing is essential because it emphasises both the close connection between clinical leadership and direct patient care, and the nurse's ability to influence colleagues, advocate for patients and contribute to shared clinical goals (Cook, 2001; Kouzes & Posner, 2010).

A key distinction from hierarchical or managerial leadership is that clinical leadership is enacted by nurses directly involved in patient care, using clinical expertise and relational skills rather than positional authority (Cook & Leathard, 2004; Grindel, 2016). This makes clinical leadership particularly relevant for bachelor level nurses who are expected to act as autonomous professionals capable of shaping team processes and contributing to safe, high quality care.

Within the CLNE project, bedside **clinical leadership** is conceptualised as a multidimensional construct encompassing six interrelated domains:

- **Ethics**
- **Professional nursing**
- **Innovation and change**
- **Influencing and advocacy**
- **Team leadership**
- **Communication and collaboration**

Together, these domains reflect the broad range of competencies required for nurses to influence patient care, support colleagues, contribute to quality improvement and act as accountable professionals in clinical practice.

Why leadership matters

Clinical leadership is essential for ensuring safe, high quality patient care and for creating nursing practice environments in which teamwork, communication, and shared decision-making can thrive (Costa et al., 2025). A recent review indicates that nursing students consistently recognise the importance of clinical leadership but frequently report feeling insufficiently prepared to assume leadership roles in practice, highlighting a persistent gap between expected competencies and educational preparation (Costa et al., 2025). The consequences of ineffective leadership are well documented across healthcare settings, where poor team coordination and weak influence skills are associated with errors, adverse outcomes, reduced patient safety (Costa et al., 2025). Conversely, effective bedside leadership strengthens teamwork, enhances staff engagement, improves communication flows, and contributes to greater patient satisfaction, fewer complaints, and—in some contexts even reductions in morbidity and mortality (Costa et al., 2025; Wong et al., 2013).

A series of systematic reviews led by Cummings demonstrates that relationally focused leadership styles (e.g., transformational, supportive, considerate) are consistently associated with higher nurse job

satisfaction, stronger organisational commitment, improved staff relationships, healthier work environment factors, and greater productivity/effectiveness, whereas task focused or dissonant styles show less favourable patterns on these outcomes (Cummings et al., 2010, 2018). The updated systematic review on nursing leadership and patient outcomes indicates that positive, relational leadership is associated with higher patient satisfaction and lower rates of mortality, medication errors, restraint use, and hospital acquired infections, strengthening earlier signals that leadership style relates to safety and quality indicators (Wong et al., 2013). Taken together, these reviews support the proposition that cultivating relational leadership at unit level is a plausible pathway to better workforce conditions and safer patient care, implying that undergraduate curricula should explicitly prioritise leadership identity and influence in team contexts rather than a sole emphasis on task completion (Cummings et al., 2018; Wong et al., 2013).

Leadership development programmes also consistently report individual level gains among learners, including increased confidence, stronger communication skills, clearer clinical reasoning, and improved decision-making capacity (Phillipson et al., 2025). However, Phillipson et al. (2025) note that despite these positive outcomes, long-term organisational impacts of leadership training such as sustained team performance, improved patient outcomes, or system-level cultural change are rarely measured, leaving an important evidence gap for curriculum designers (Phillipson et al., 2025). Together, these findings underline the need for undergraduate programmes to take clinical leadership seriously as a foundational element of nursing practice and to ensure that curricula are designed to equip students with the leadership identity, judgement, and influence skills necessary for safe, collaborative, and patient-centred care.

Although clinical leadership is acknowledged as important, it is not always clear how it is addressed in nursing education or which teaching methods are used to support its development (Page et al., 2021). Simulation-based learning has been suggested as a promising method to develop clinical skills and leadership-related abilities. However, its specific role in fostering clinical leadership within bachelor-level nursing education remains to be clarified. Recent literature highlights the need to introduce leadership development from programme entry, with active learning methods and progressive leadership objectives across courses and clinical placements (Costa et al., 2025).

2. Methods

A structured literature summary was undertaken to identify teaching methods, pedagogical strategies and curriculum level approaches used to foster bedside, nonhierarchical clinical leadership. This drew on an existing pool of literature previously identified in a broader search on clinical leadership in nursing education. From this pool, 196 articles were identified as potentially relevant based on title and abstract. These were screened for inclusion according to the presence of teaching methods or materials related to bedside clinical leadership, resulting in 95 articles selected for full text review and 27 classified as "maybe". Full text screening examined the aim, context, target population, teaching approach, level of applicability to nursing education programmes and the presence of concrete pedagogical examples. This process resulted in 34 included articles describing teaching methods to foster clinical leadership. Screening was carried out by two reviewers independently, supported by Rayyan, with conflicts resolved through discussion. The methodological quality of the included studies was appraised with the JBI critical appraisal checklists and the Mixed Methods Appraisal Tool (MMAT).

While this body of literature provided substantial insight into teaching materials, it contained only limited information on how clinical leadership is structurally or longitudinally integrated into nursing curricula. To address this gap, a targeted supplementary search was conducted in CINAHL and PubMed, supported by reference tracing, to identify literature specifically discussing curriculum level integration of clinical leadership. This complementary search identified 9 articles, which were analysed separately to synthesise principles relevant to curriculum design.

3. Results

The results are presented in two parts:

- **Part A** focuses on **curriculum integration** and addresses the question of how clinical leadership can be embedded within nursing programmes.
- **Part B** focuses on **teaching and learning approaches** and describes the educational methods most commonly used to foster clinical leadership.

Structure of the results section

Part A. Curriculum integration

This section explores how clinical leadership can be integrated and developed throughout undergraduate nursing programmes.

Topics include:

- Why should clinical leadership be embedded throughout the curriculum?
- How can clinical leadership develop across programme years?
- The clinical learning environment as a partner in leadership development
- Structural integration of clinical leadership in curriculum design

Part B. Teaching methods

This section examines educational approaches used to foster clinical leadership and illustrates them with examples from the literature and examples developed by the consortium. Topics include:

- Structured formal teaching methods
- Experiential and practice-based learning
    - Simulation
    - Action learning on authentic service problems
    - Service learning and work-based learning
    - Guided immersion and role modelling
- Reflective and relational learning
    - Reflective journaling and structured reflection
    - Coaching and mentoring
    - Observational learning and role modelling

RESULTS PART A:

Curriculum integration

KEY TAKEAWAYS

Part A: Curriculum integration

- Clinical leadership should be **embedded** across the entire nursing curriculum rather than taught as a standalone module.
- Leadership development requires explicit **progression** and clearly defined milestones.
- Clinical **placements** are an essential component of leadership development and need to be intentionally integrated into the curriculum.
- Educational institutions and clinical partners should work in **partnership** to create meaningful opportunities for leadership learning.
- Leadership expectations and behaviours should be made **visible** throughout the programme, with assessment approaches still to be developed.

Preparing nursing students for clinical leadership requires a curriculum that is purposefully designed as an integrated, longitudinal structure rather than a discrete, standalone course placed at a single point in time (Ailey et al., 2015; Brown, Crookes, et al., 2016). Across the sources compiled for this literature summary, clinical leadership is treated as a developmental trajectory that unfolds through progressive exposure to increasingly complex patient, team, and organisational contexts, which implies that curriculum must scaffold identity, judgement, and influence over time (Brown, Crookes, et al., 2016; Cook & Leathard, 2004; Costa et al., 2025). According to the AACN (2007), preparation for clinical leadership requires a structured form of professional socialisation, whereby nurse educators and clinical leaders induct students into leadership roles by modelling leadership behaviours, supervising students' early participation in team processes, and progressively guiding them toward greater responsibility; the AACN also argues that clinical leadership cannot be learned through classroom teaching alone but must be developed through guided participation in real clinical environments (American Association of Colleges of Nursing, 2007).

Yet many nursing programmes still lack a coherent architecture that sequences leadership development, embeds it across modules and internships, and aligns it with organisational priorities, which is precisely the gap this chapter addresses (Brown, Crookes, et al., 2016; Costa et al., 2025; Leathard & Cook, 2009). Focusing strictly on curricular structure (with pedagogical techniques reserved for a later chapter), this synthesis draws on empirical and conceptual contributions to specify how an undergraduate curriculum should be built to cultivate bedside clinical leadership.

Why should clinical leadership be embedded throughout the curriculum?



Clinical leadership should be embedded throughout the curriculum because leadership competencies develop progressively through repeated opportunities for practice, reflection and participation in increasingly complex clinical contexts.

The literature consistently describes clinical leadership as a developmental capability that evolves over time rather than as a discrete competency acquired through a single educational intervention. Through repeated opportunities for observation, practice, reflection and participation in authentic clinical situations, students progressively develop the knowledge, skills and behaviours required for clinical leadership (Ailey et al., 2015; Cook & Leathard, 2004; Costa et al., 2025).

Leadership development therefore requires a curriculum structure that supports **continuous growth over time**, enabling students to build on earlier experiences while gradually assuming greater responsibility. Rather than positioning leadership as a topic addressed within a single course or module, the literature emphasises the importance of sustained and progressive development across the entire educational journey (Brown, Dewing, et al., 2016b; Costa et al., 2025; Mohammadpourhodki & Heshmati Nabavi, 2025).

A consistent message across the literature is that clinical leadership should be embedded as a **longitudinal curriculum thread** extending from programme entry to graduation. Brown, Dewing and Crookes (2016b) argue that leadership development becomes more meaningful when leadership expectations are made explicit throughout the curriculum and linked to visible

learning and assessment moments. In this way, leadership becomes an identifiable component of professional formation rather than an incidental by-product of clinical education.

Several authors emphasise that leadership develops most effectively when it is closely connected to **authentic clinical practice**. Cook and Leathard (2004) describe leadership learning as an iterative process in which experience, reflection, conceptual understanding and renewed application continually interact. From this perspective, leadership capability is not acquired through knowledge transmission alone but through repeated participation in real clinical situations that require judgement, communication, influence and collaboration.

Ailey et al. (2015) reach a similar conclusion in their Model of Situated Learning in Nursing Leadership, where leadership is threaded throughout the curriculum and linked to **authentic service-improvement activities**. Their model emphasises that leadership develops when students actively engage with clinical challenges, collaborate with stakeholders and contribute to meaningful improvement initiatives within healthcare settings.

Recent evidence further supports this longitudinal approach. In their scoping review, Costa et al. (2025) conclude that leadership development is strongest when programmes adopt **progressive leadership objectives** that are integrated across both theoretical and clinical learning experiences. Rather than teaching leadership at a single point in the curriculum, programmes should create multiple opportunities for students to revisit, expand and deepen leadership capabilities throughout their education.

Taken together, the literature suggests that clinical leadership should not be viewed as a separate subject but as a **developmental process** that unfolds across the entire educational trajectory. Embedding leadership throughout the curriculum allows students to progressively strengthen their professional identity, leadership capabilities and capacity to influence patient care, teams and healthcare systems (Ailey et al., 2015; Brown, Dewing, et al., 2016b; Cook & Leathard, 2004; Costa et al., 2025).

How can clinical leadership develop across programme years?



Clinical leadership develops progressively throughout the nursing programme, moving from self-awareness and self-management towards influence within teams, quality improvement and broader organisational engagement.

Clinical leadership develops through a **progressive and developmental trajectory**, rather than emerging as a fully formed competency at the point of graduation. As students gain clinical experience, their leadership capabilities expand from understanding and managing themselves to influencing patient care, collaborating with teams and contributing to improvements in healthcare delivery (Brown, Dewing, et al., 2016b; Costa et al., 2025; Pepin et al., 2011).

A frequently described developmental framework distinguishes between **leading self** and **managing self**. Leadership development begins with the personal foundations of practice, including professional identity, self-awareness, communication, confidence, reflection and personal responsibility. As students become more experienced, these capabilities extend into decision-making, teamwork, quality and safety, prioritisation and the ability to support or supervise others. Effective leadership therefore starts with the ability to manage one's own practice before progressively influencing the practice of others (Brown, Dewing, et al., 2016a).

Clinical leadership development has also been described as a progression from **enlightenment**, to **empowerment**, and ultimately **emancipation**. Students first learn to recognise relevant issues in clinical practice, then gain the confidence and agency to act, and eventually develop the capacity to influence practice, initiate improvements and contribute to change. Leadership development thus involves not only acquiring competencies but also increasing autonomy, professional judgement and confidence in influencing others (Brown, Dewing, et al., 2016b).

Several authors describe this development as occurring through increasingly complex stages of leadership practice. Early stages focus on recognising leadership behaviours in others, understanding one's potential influence and developing confidence in everyday patient care situations. More advanced stages involve taking initiative in patient and family care, influencing team processes, mobilising colleagues and contributing to organisational improvement

activities. Leadership capabilities therefore broaden from an individual focus towards team and system-level engagement as students progress through the curriculum (Pepin et al., 2011).

An example of a developmental leadership trajectory

The Cognitive Learning Model of Clinical Nursing Leadership (CLM) conceptualises leadership development as a progression through five stages, advancing from leadership awareness to broader organisational influence (Pepin et al., 2011).

Stage 1. Awareness of clinical leadership

- Recognising leadership behaviours in others
- Positioning oneself on the leadership path
- Realising personal influence on patient care
- Sharing knowledge with peers

Stage 2. Integration of leadership in actions

- Acting with confidence in patient and family situations
- Communicating constructively with professionals
- Acknowledging personal strengths and limitations
- Identifying role models

Stage 3. Active leadership with patients and families

- Taking the lead in clinical situations
- Initiating collaborative, patient-centred care
- Acting as a role model
- Identifying and developing one's leadership style

Stage 4. Active leadership with the team

- Mobilising intra- and interprofessional teams
- Acting as a resource person
- Questioning established practices and implementing solutions
- Adapting leadership style to context
- Enhancing team competencies

Stage 5. Embedded leadership at organisational level

- Participating in organisational decision-making
- Leading change and proposing innovative approaches
- Anticipating and preventing problems
- Managing conflicts
- Acting as a mentor.

While Pepin et al. (2011) describe **how leadership progresses across developmental**

stages, other authors emphasise the different **domains of competence** that develop throughout this trajectory.

This progression spans multiple dimensions of leadership development. **Cognitive development** includes decision-making, clinical reasoning and quality-improvement knowledge. **Interpersonal development** focuses on communication, collaboration and influence within teams. **Intrinsic development** concerns self-confidence, empowerment, emotional intelligence and professional identity. Together, these dimensions illustrate that leadership development involves much more than acquiring knowledge alone and requires growth across personal, relational and professional domains (Guibert-Lacasa & Vázquez-Calatayud, 2022).

Recent evidence further supports the use of **progressive programme-wide leadership objectives** that increase in complexity across successive years of study. Early learning experiences should focus on leadership awareness, reflection and professional identity formation. Intermediate stages should introduce teamwork, communication and shared decision-making, while later stages should provide opportunities to influence practice, participate in quality-improvement activities and engage with broader organisational issues. This gradual increase in complexity allows students to revisit and expand leadership capabilities throughout the curriculum (Costa et al., 2025).

Taken together, the literature portrays clinical leadership development as a gradual progression from **leading self** towards **influencing others and improving care systems**. Rather than expecting students to demonstrate advanced leadership capabilities immediately, curricula should provide developmentally appropriate learning opportunities that progressively strengthen leadership knowledge, skills, behaviours and professional identity throughout the educational journey.

The clinical learning environment as a partner in leadership development



Clinical leadership develops most effectively when students actively participate in supportive clinical environments that provide role models, authentic leadership opportunities and meaningful engagement in patient care and team processes.

Clinical leadership cannot develop through classroom learning alone. Because leadership is fundamentally practice-based and relational, students require opportunities to observe, experience and enact leadership within authentic clinical environments. Clinical placements therefore function not simply as sites for skill acquisition, but as important learning environments in which leadership knowledge, behaviours and professional identity can be developed and refined (Cook & Leathard, 2004; Costa et al., 2025).

The quality of the clinical learning environment plays a significant role in shaping students' leadership development. Supportive clinical settings provide opportunities for participation, communication, shared decision-making and gradual increases in responsibility. In contrast, environments characterised by poor communication, limited support or negative role modelling may restrict students' willingness and ability to engage in leadership-related activities (Scammell et al., 2020; Walker et al., 2011).

Role modelling emerges consistently in the literature as a key ability through which clinical leadership is learned. Students often develop their understanding of leadership by observing how experienced nurses communicate, coordinate care, advocate for patients, manage challenges and influence colleagues in everyday practice. Leadership therefore becomes visible not through formal teaching alone but through the behaviours demonstrated by clinical supervisors, mentors and staff nurses during routine patient care (Cook & Leathard, 2004; Ha & Pepin, 2018; Walker et al., 2011).

Beyond observation, leadership development requires active participation. Students need opportunities to contribute to team discussions, coordinate aspects of patient care, communicate concerns, participate in quality improvement activities and gradually assume increased responsibility appropriate to their level of development. Such experiences enable students to move from observing leadership to enacting leadership within real clinical situations (Ailey et al., 2015; Costa et al., 2025; Pepin et al., 2011).

The literature further highlights the importance of **psychological safety** and supportive supervisory relationships. Students are more likely to speak up, ask questions, express clinical concerns and attempt leadership behaviours when they perceive the learning environment as respectful, supportive and non-punitive. Constructive feedback, mentorship and coaching therefore play an important role in helping students develop confidence and leadership agency during clinical placements (Costa et al., 2025; Duprez et al., 2024; Walker et al., 2011).

Effective leadership development also depends on alignment between educational programmes and healthcare organisations. When clinical placements expose students to authentic improvement initiatives, patient safety activities, quality improvement projects and collaborative decision-making processes, leadership learning becomes more closely connected to practice realities. Organisational priorities can thereby provide meaningful contexts in which students learn to influence care processes, contribute ideas and participate in service improvement activities (Ailey et al., 2015; Cook & Leathard, 2004; Phillipson et al., 2025).

Taken together, the literature suggests that the clinical learning environment should be viewed as an active partner in students' leadership development. Through role modelling, authentic participation, supportive supervision and meaningful involvement in clinical and organisational activities, students are provided with the experiences necessary to develop clinical leadership capabilities in practice (Ailey et al., 2015; Cook & Leathard, 2004; Costa et al., 2025).

Structural integration of clinical leadership in curriculum design



Clinical leadership becomes visible and sustainable when it is intentionally embedded, mapped and assessed across the curriculum through clearly defined learning outcomes, milestones and authentic learning experiences.

Embedding clinical leadership throughout a nursing programme requires more than the inclusion of leadership-related content. Leadership development must be deliberately integrated into curriculum structures, learning activities, clinical placements and assessment processes so that students encounter leadership expectations consistently across the programme (Brown, Dewing, et al., 2016b; Costa et al., 2025).

To make this clinical leadership thread visible, leadership expectations need to be explicitly embedded within existing curriculum structures. One proposed method is the use of curriculum **"knots"**, defined as planned points where leadership learning becomes explicit, observable and assessable. These moments allow leadership development to be recognised within existing modules and placements without requiring additional standalone courses (Brown, Dewing, et al., 2016b).

Effective integration also requires deliberate alignment between **learning outcomes, learning activities and assessment**. Leadership should be reflected in programme outcomes and translated into concrete expectations within courses and clinical placements so that students encounter leadership not only as a theoretical concept but also as a competency that is practised and assessed throughout the programme (Brown, Dewing, et al., 2016a; Costa et al., 2025).

Authentic learning experiences, such as quality-improvement projects, simulation activities, interprofessional learning and leadership-focused placement experiences, should be embedded within the curriculum to connect leadership learning with real patient care and organisational challenges (Ailey et al., 2015; Cook & Leathard, 2004).

Finally, curriculum integration requires ongoing **evaluation and curriculum** mapping. Monitoring where leadership is taught, practised and assessed enables educators to identify gaps, ensure coherence across the programme and evaluate students' progression over time (Brown, Dewing, et al., 2016a; Costa et al., 2025).

Taken together, effective curriculum integration requires more than adding leadership content to existing courses. It involves creating a visible leadership thread, establishing curriculum milestones, aligning outcomes and assessment, embedding authentic learning experiences and systematically evaluating leadership development across the programme.

RESULTS PART B:

Teaching methods to foster clinical leadership in nursing education

KEY TAKEAWAYS

Part B: Teaching methods

- The literature describes a wide range of teaching approaches, most commonly **experiential approaches** (e.g. simulation, workplace learning, service learning and quality-improvement projects), combined with **reflective approaches** (e.g. journaling and debriefing) and **relational approaches** (e.g. mentoring and coaching).
- **Structured teaching** provides conceptual foundations and a shared language for leadership, but is usually combined with experiential and reflective learning.
- Clinical leadership teaching emphasises **active participation**: students need **opportunities to practise** leadership behaviours, such as communication, teamwork, prioritisation, influence and clinical decision-making, in authentic or simulated clinical situations, rather than passively acquiring leadership knowledge.
- **Reflection, coaching, mentoring and role modelling** help students recognise, interpret and strengthen leadership behaviours and their leadership identity.
- Most studies report outcomes related to students' **confidence, communication skills and perceived leadership development**, while evidence on **longer-term behavioural outcomes** remains limited.

Clinical leadership development for bachelor-level nursing students requires pedagogical approaches that strengthen influence, communication, situational judgement and collaborative decision-making in the direct care context. Across the included literature, three broad clusters of teaching methods recur: experiential and practice-based learning, reflective and interactive learning, and formal or digital instructional methods, which are frequently combined into multicomponent or longitudinal programmes. Although the overall evidence base is heterogeneous and largely reliant on self-reported outcomes rather than objective or

patient-level indicators, these pedagogical strands are consistently associated with improvements in students' communication, confidence, situational awareness and early leadership behaviours. At the same time, findings should be interpreted with caution given that many studies use small samples, single-site designs, limited follow-up periods and predominantly self-reported outcomes, underscoring the need for more rigorous, behaviour-based and longitudinal evaluation. Many educational approaches described in the literature are not mutually exclusive and frequently combine experiential, reflective and relational components.

Across the included studies, workshops and coaching/mentoring emerged as the most frequently described teaching methods, followed by simulation-based learning and action learning. Reflective journaling and case- and problem-based learning were also described in several studies. Other approaches, such as service-learning, digital tools and work-based learning, appeared less frequently but contributed important contextual or relational components to leadership development.

The results section is organised according to the major pedagogical approaches identified. The structure is as follows:

Teaching methods to foster clinical leadership in nursing education

- Structured formal teaching methods
- Experiential and practice-based learning
  - Simulation
  - Action learning on authentic service problems
  - Service learning and work-based learning
  - Guided immersion and role modelling
- Reflective and relational learning
  - Reflective journaling and structured reflection
  - Coaching and mentoring
  - Observational learning and role modelling

Structured formal teaching methods



Structured teaching methods provide conceptual foundations and a shared language for leadership development, but are usually described in combination with experiential and reflective learning approaches.

Structured formal instructional approaches provide conceptual foundations for clinical leadership development and help establish a shared language regarding communication, influence, decision-making and team processes. Across the included studies, workshops, lectures and digital modules contribute to students' theoretical understanding of leadership, though their impact on behavioural change appears limited unless they are embedded within broader experiential and reflective learning structures (Cummings et al., 2021; Martin et al., 2012; Paterson et al., 2010).

Workshops are widely used to introduce specific competencies, including assertive communication, conflict management, coaching conversations and team coordination (MacKechnie et al., 2022; Qtait, 2023). Programme evaluations report perceived gains in self-confidence, clarity of expression and influencing skills following such sessions, particularly when cases, group discussions or scenario-based exercises are incorporated (Enterkin et al., 2013; Paterson et al., 2010).

Lectures typically provide the theoretical underpinnings of leadership concepts such as transformational leadership, emotional intelligence, change management or problem-solving models and offer learners an initial framework with which to interpret leadership behaviours encountered in practice. However, conceptual input alone is insufficient: a systematic review describes that while lectures increase knowledge, they do not reliably translate into observable leadership behaviours without opportunities for practice, feedback and reflection (Cummings et al., 2021).

Digital and blended learning modalities provide additional flexibility. Short video-based modules or e-learning primers can efficiently convey foundational knowledge. In one pre–post study, an educational video improved clinical leaders' understanding of nursing contributions to antibiotic stewardship (Gerostergios & Soroken, 2024). While this study did not target nursing students, it illustrates how concise digital materials can serve as preparatory learning

components when followed by structured discussion or applied activities, for instance in simulation or group debriefs. Despite their accessibility, digital methods are rarely evaluated using robust behavioural or long-term outcomes.

Taken together, structured formal methods offer an essential conceptual scaffold for leadership development, but they are pedagogically insufficient when used in isolation. Their effectiveness increases substantially when situated within curricula that integrate experiential learning, guided reflection and relational support, ensuring that theoretical concepts are reinforced, enacted and critically examined in authentic clinical contexts (Martin et al., 2012; Paterson et al., 2010).

Experiential and practice-based learning



Clinical leadership is most commonly developed through experiential learning approaches that provide opportunities to practise leadership behaviours in authentic or simulated care situations.

Experiential approaches place students in realistic care situations where they must prioritise, communicate, negotiate roles and coordinate actions. Across the included literature, such approaches are consistently associated with gains at the learner level in communication, role negotiation, teamwork and readiness for clinical practice, while recognising that most outcomes are self-reported and proximate rather than behavioural or patient-level. This pattern is visible in interprofessional simulation studies and in evaluations of action learning, service- or work-based projects, and guided immersion with role models (Cook & Leathard, 2004; Enterkin et al., 2013; McNamara et al., 2014; Mianda & Voce, 2018; Nieuwoudt et al., 2021; Scammell et al., 2020).

Simulation

Interprofessional simulation using ward-based scenarios has been shown to improve students' perceived ability to interact across professional boundaries, clarify roles and engage in structured team coordination before their first placements. In a mixed-methods evaluation with pre- and post-intervention measures, students reported clearer team processes, more

deliberate communication, and enhanced placement preparedness; leadership behaviours such as initiating the plan of care, structuring task flow and coordinating timing surfaced during the debrief even when leadership was not the stated primary outcome (Nieuwoudt et al., 2021). These findings underline the value of a deliberately sequenced prebrief–scenario–debrief arc with explicit attention to psychological safety and role clarity (Nieuwoudt et al., 2021).

Beginners appear to benefit from simulation designs that make leadership visible through contrasted trajectories. In a first-year intervention, video-based unfolding cases with pause-and-predict prompts enabled students to compare an episode enacted without leadership to an alternative in which the student nurse advocates for safety, seeks support, and negotiates a care plan; small-group discussion and structured journaling translated these observations into early leadership identity work. By combining concrete, visual examples with guided reflection, such designs help students to observe and analyse leadership behaviours (Ha & Pepin, 2018).

Although not conducted with students, work on technology-enabled simulations points to transferable design principles for communication and perspective-taking. For example, a programme combining a virtual-reality dementia experience with SBAR-centred actor-based scenarios and structured debriefing improved participants' confidence in organised communication and deepened empathic understanding; the reported learning processes included emotional insight, observational learning and psychologically safe feedback (Aicken et al., 2021). These principles are adaptable for student settings with attention to role relevance and feasibility (Aicken et al., 2021).

In addition to conventional clinical-deterioration or communication scenarios, simulation can also be designed to target leadership competencies that are central to bedside clinical leadership. Examples include simulation of constructive interruption, where a student must draw attention to overlooked clinical information in a way that preserves relational safety; negotiating priorities under resource constraints, in which learners must articulate and justify clinical reasoning to a colleague with conflicting views; and challenging ineffective ward processes, requiring students to restructure unclear workflows or explicitly assign roles during a high-stakes procedure. Other leadership-focused formats include escalating subtle deterioration to a reluctant colleague using repeated, evidence-based argumentation; leading a brief interprofessional micro-huddle under time pressure while managing disruptions;

navigating ethically tense communication (for example, when a family member and staff express divergent expectations); and interrupting a cascade of communication failures during handover by restoring shared understanding and synchronising team actions. These scenario types operationalise attributes such as highlighting, influencing, reframing and advocating, which feature prominently in qualitative accounts of effective clinical leadership.

Across the reviewed studies, simulation activities targeted a range of leadership behaviours relevant to bedside clinical leadership. Frequently described behaviours included recognising and drawing attention to clinical concerns, advocating for patient safety, seeking support when needed, communicating clearly within teams, coordinating collective action, negotiating with colleagues and mobilising others towards a shared goal. Several studies also highlighted the importance of role clarity, respectful collaboration, reflection on leadership actions and psychologically safe feedback as part of leadership development. Several of the behaviours identified across simulation studies, such as communication structuring, team coordination, situational awareness and leadership, show similarities with established crisis resource management (CRM) principles commonly used in simulation-based education.

Taken together, the simulation literature suggests that scenario realism, explicit scaffolding for communication and role negotiation, and a debrief space that names influence behaviours are central to translating simulation activity into leadership development, while recognising that most evidence reflects self-assessment rather than observed behavioural change (Ha & Pepin, 2018; Nieuwoudt et al., 2021).

Simulation is understood here as learning in a designed, controlled environment outside direct patient care (e.g. manikin, actor or video-based scenarios) that enables safe rehearsal and targeted feedback with educator control.

Simulation scenarios in clinical leadership nursing education

	Simulation example 1: constructive interruption in a high-risk medication process	**Simulation example 2: rapid team coordination under time pressure (micro-huddle)**	**Simulation example 3: negotiating divergent clinical judgement with a physician**	**Simulation example 4: rebuilding shared mental models during failing handover**
Aim	To train students in safe, relationally skilled interruption, advocacy, and structured communication when identifying a potential patient-safety risk	To practise leading short, high-stakes team coordination when resources are limited.	To strengthen advocacy, evidence-based negotiation, and respectful challenge when clinical perspectives differ.	To train students in recognising communication breakdowns and restoring shared understanding.
Clinical leadership targeted	Highlighting critical clinical information Influencing without hierarchical authority Advocating for patient safety Maintaining psychological safety within the team Structured communication	Prioritisation under uncertainty Rapid team role allocation Information structuring Team mobilisation	Reframing clinical concerns Evidence-based influencing Conflict navigation Interprofessional communication	Communication structuring Team sense-making Repairing breakdowns Leadership in routine workflow processes
Scenario overview	A nurse is preparing to administer IV antibiotics. The student notices that the documented penicillin allergy was not discussed. The senior nurse appears rushed and dismissive. The student must interrupt the process, justify concern with evidence, and renegotiate the workflow while preserving the relationship.	Three patients require attention simultaneously: one deteriorating vital sign trend, one requesting analgesia, one awaiting discharge with missing documentation. Student must initiate a micro-huddle, structure tasks, clarify roles, and maintain overview.	A patient shows subtle but concerning respiratory changes. The student believes escalation is required. The physician attributes symptoms to anxiety and proposes delaying further assessment. Student must present objective findings, request reassessment, maintain a collaborative tone.	Handover is chaotic. Information is inconsistent between nurse A and B. Student intervenes, requests reset, structures handover with SBAR, and ensures clarity on patient risks.
Roles	Student nurse (primary participant) Senior nurse (plays mild defensiveness) Patient (optional actor)	Two nurses + optional allied health professional.	Student nurse as primary communicator; physician who initially downplays concerns; optional bedside nurse adding contextual complexity; optional patient expressing worry or discomfort.	Student nurse receiving handover; one outgoing nurse who is overwhelmed and nonlinear in reporting; a second nurse offering contradictory details or interruptions; optional charge nurse or allied health professional adding complexity.
Critical events	Senior nurse states: "We need to speed up; there's a lot to do." Student identifies discrepancy (allergy + order). Senior nurse initially dismisses concern: "It's probably a documentation error." Student applies *constructive interruption* using SBAR + risk framing. Senior nurse shifts from defensiveness to collaboration.	Conflicting priorities One team member resists assigned task ("I'm already behind") Student must reframe goals and support colleague	Physician dismisses subtle signs Student must reference observations + guidelines Student proposes shared plan ("Can we reassess in 30 min?")	Loss of narrative coherence; contradictory statements about interventions or patient status; visible frustration or distraction within the team; incomplete information about risks or priorities; student must pause the process and introduce structure.
Expected leadership behaviours	Clear articulation of the risk ("I'm concerned because…") Reframing to shared goal: patient safety Maintaining relational safety Offering actionable next step	Explicit prioritisation ("First we stabilise…, then…") Clear task assignment with rationale Checking understanding (closed loop) Supportive communication toward	Clear articulation of concern using structured communication; linking rationale to patient safety; respectful but firm challenge of assumptions; offering specific next steps such as timed reassessment; maintaining calm,	Proposing a structure ("Let's summarise one patient at a time…") Regaining attention respectfully Ensuring final risk check ("Are we aligned on the plan for…?")

	(double-check order; contact prescriber)	overloaded colleague	professional tone; confirming agreement through closed-loop communication.	
Debriefing structure (10–12 minutes)	What did you notice about your own emotional response? Which influence strategies worked? Which escalated tension? Where did leadership show up in the micro-behaviours?	How did you balance assertiveness with empathy? What signals of team overload did you notice? How did you maintain situational awareness?	How effectively did the student present evidence and maintain relational safety? Which influencing strategies were effective? How was tension managed? How did the student link actions to shared clinical goals?	How did the student recognise breakdowns and restore structure? How did tone, timing, and presence influence team receptiveness? How did the intervention support safety and team cohesion? How can this be applied during real placements?
Advanced options	Add pressure (alarms, interruptions). Add interprofessional escalation (call to prescriber). Compare two recordings: with/without leadership behaviours (Ha & Pepin method).	Add electronic health record elements Introduce second deterioration partway through Require student to lead a brief reflection with the team afterward	Add family anxiety to increase relational complexity; include contradictory documentation; introduce competing clinical tasks; require escalation to a senior physician if negotiation stalls.	Add time pressure or urgent interruptions; introduce discrepancies in the electronic record; include a second patient with deteriorating status mid-handover; require the student to lead a follow-up micro-reflection with the team.
Depending on available resources, roles may be enacted by peers, educators or trained simulated participants. Facilitator preparation and role consistency are important to ensure a meaningful learning experience.				

The simulation scenarios above were developed by the consortium, informed by the literature summarised above, to illustrate how leadership-focused simulation can be designed.

Action learning on authentic service problems

Action learning treats service problems as the core curriculum for leadership development, engaging small groups in iterative cycles of inquiry, testing, and reflection. Evaluations in clinical leadership programmes report perceived gains in problem-solving, confidence to speak up, political and organisational awareness, and a reduced sense of isolation, provided the environment balances challenge and safety and facilitation quality is maintained (Edmonstone & MacKenzie, 2005; Enterkin et al., 2013; Fealy et al., 2015; Leigh et al., 2015; McNamara et al., 2014). While these studies often concern early-career nurses rather than preregistration students, several key features of action learning, including collective reflection on real work, explicit commitment to next steps and cyclical review of action, are directly transferable to undergraduate clinical blocks where students contribute to micro-improvements aligned with unit priorities (Enterkin et al., 2013; McNamara et al., 2014). The evidence base remains predominantly qualitative and single-site, warranting cautious interpretation (Enterkin et al., 2013; McNamara et al., 2014).

Action learning examples

	Pain score inconsistency	**Delayed discharge workflow**
Aim	To enable students to identify a small, real-world care inconsistency and test a simple improvement.	To engage students in analysing a recurrent workflow bottleneck and testing a targeted micro-intervention.
Scenario	The student notices that pain scores are documented differently across shifts. They discuss this with two nurses and test using a single agreed scale for one shift, then review whether clarity and continuity improved.	Repeated delays occur when preparing discharge summaries. The student maps one discharge process, identifies a delay (e.g., late documentation), and tests an early-initiated reminder during morning rounds.
Leadership behaviours	Highlighting the inconsistency respectfully, inviting colleagues into a small test, reviewing results, and proposing a logical next step	Structured inquiry, communicating with relevant staff, proposing a feasible intervention, and reporting early findings succinctly

The examples above were developed by the consortium, informed by the literature, to illustrate how action learning can be applied in nursing education.

Service learning and work-based learning

Service-learning is a structured approach that combines academic instruction with planned service activities that address real needs of patients, families or communities, with systematic reflection linking the service to curricular outcomes. In student leadership literature, service-learning, integrated academic–clinical teaching and explicit role modelling recur as approaches associated with leadership development, though designs and measures vary widely (Scammell et al., 2020). In participatory implementation accounts within hospital

services, staged capacity-building that couples workshops with coached practice, case reviews and reflective sessions appears to normalise new behaviours at the microsystem level (Kläusler-Troxler et al., 2019).

Service-learning is distinct from guided immersion in that it typically orients towards community or project-based contribution with explicitly designed reflection cycles, whereas guided immersion is situated within ongoing ward care and centres on real-time participation in clinical teamwork.

Service learning: compact examples

	Community health education project	**Supporting a vulnerable patient group**
Aim	To involve students in a meaningful community-oriented activity while developing communication, advocacy and collaboration skills.	To strengthen relational leadership and perspective-taking through direct engagement with individuals experiencing health inequities.
Scenario	Students co-facilitate a short educational session for a community group (e.g., diabetes self-management or fall prevention). They coordinate with a community nurse and a social worker, prepare materials, deliver the session and reflect on how their actions influenced engagement and understanding.	Students participate in a structured visit programme at a centre for older adults or migrants. They observe needs, identify one small supportive action with staff (e.g., improving clarity of medication instructions), and implement it during the visit cycle.
Leadership behaviours	Framing health information clearly, engaging community members, collaborating across roles, adapting style to the audience and reflecting on the impact of their contribution	Empathic assessment, engaging stakeholders, connecting observations to concrete actions, and reflecting on systemic barriers

The examples above were developed by the consortium, informed by the literature, to illustrate how service learning can be applied in nursing education.

Guided immersion and role modelling

Guided immersion means learning leadership directly in the clinical setting: students observe expert nurses, take part step-by-step in team work and discuss what happened with a mentor afterwards. Ethnographic work portrays clinical leadership as relational, contextual and enacted in everyday practice; learning arises from immersion, guided participation and reflection around lived cases rather than from decontextualised classroom exposure (Cook & Leathard, 2004). Unlike simulation, guided immersion cannot be scripted and exposes learners to authentic constraints, hierarchies and interprofessional dynamics, which complements the controlled rehearsal afforded by simulation (Cook & Leathard, 2004).

Guided immersion: compact examples

	Participating in real-time teamwork	**Active participation in patient-family conversation**
Aim	To expose students to authentic team dynamics and support them in gradually taking part in collaborative decision-making.	To support development of communication, emotional intelligence and influence during sensitive clinical encounters.
Scenario	The student accompanies an experienced nurse	The mentor leads a conversation with a family

	during a busy morning shift. The mentor invites the student to take responsibility for communicating one patient update during a brief team exchange. A short reflective dialogue follows, focusing on how influence and clarity shaped the outcome.	expressing concerns about care. The student observes how the mentor uses de-escalation, reframing and collaborative planning. The student then contributes one supportive statement or summary, followed by joint reflection.
Leadership behaviours	Observing relational cues, articulating priorities, coordinating with team members and reflecting on how everyday micro-actions influence care	Listening with intent, aligning with patient/family values, maintaining calm tone and offering structured summaries.

The examples above were developed by the consortium, informed by the literature, to illustrate how guided immersion can be applied in clinical placements.

Reflective and relational learning

Reflective and relational approaches constitute an essential strand in leadership learning because they support the internalisation of clinical leadership as a relational, identity-forming and context-dependent process rather than a set of discrete skills. Across the included studies, reflective journaling, facilitated group reflection, coaching, mentoring and structured observation of role models are consistently described as educational approaches that strengthen self-awareness, interpersonal competence, judgement and the capacity to influence others, though outcomes remain predominantly self-reported (Cook & Leathard, 2004; Duprez et al., 2024; Enterkin et al., 2013; Ha & Pepin, 2018; McNamara et al., 2014).

Reflective journaling and structured reflection



Reflection, mentoring, coaching and role modelling help students interpret clinical experiences, recognise leadership behaviours and strengthen their leadership identity.

Reflective journaling and guided reflection prompt students to examine the relational, ethical and situational dimensions of care and to consider how nurses enact influence in routine interactions. In a qualitative evaluation of a first-year leadership intervention, students reported that structured journaling and small-group discussion enabled them to deconstruct concrete leadership behaviours observed in practice and to articulate their own developing leadership identity. The study indicates that early-stage learners require explicit scaffolding to interpret leadership moments, as they do not yet have the clinical repertoire to recognise subtle influence behaviours on their own (Ha & Pepin, 2018).

Reflective practices in leadership programmes for early-career nurses show similar learning processes: collective analysis of real events, facilitated questioning, and structured linkages between observations and intended behaviours support deeper self-insight and shared learning (Enterkin et al., 2013; McNamara et al., 2014). Although these studies focus on registered nurses, the reflective processes they document sense-making, emotional processing and behavioural goal-setting are directly relevant to undergraduate learning when appropriately adapted.

Coaching and mentoring

Coaching and mentoring appear across multiple studies as central facilitators of leadership development. A realist review identified ownership, self-reflection, confidence and motivation as key outcomes of programmes that intentionally combine mentoring or coaching with reflective assessment and opportunities for practice (Duprez et al., 2024). These conditions are strongest when the learner experiences psychological safety, reciprocal dialogue and practical support for translating insights into action (Duprez et al., 2024).

Programme evaluations with early-career nurses further describe perceived gains in communication, conflict management, organisational awareness and ability to support colleagues when mentoring and coaching are embedded in workplace contexts (Leigh et al., 2015; McNamara et al., 2014; Paterson et al., 2010). Although not designed for preregistration

learners, these findings indicate how coaching and mentoring can be structured in undergraduate placements: recurring dialogues with a trained clinical mentor, explicit identification of leadership moments, and feedback that links actions to influence on patient care and team processes.

Observational learning and role modelling

Observational learning is repeatedly described as a core pathway through which learners acquire leadership behaviours, particularly those associated with relational influence. Ethnographic research into effective clinical leaders indicates that leadership is demonstrated through situated behaviours such as highlighting priorities, framing problems, influencing colleagues, supporting others and maintaining respectful communication (Cook & Leathard, 2004). These behaviours become visible and learnable when a more experienced nurse intentionally explains actions, articulates reasoning and engages students in post-event reflection. This positions role modelling not as passive exposure but as an active pedagogical strategy requiring intentional facilitation.

Table: References mapped to each clinical leadership domain

The table below maps included references to the six domains of the clinical leadership framework, showing how individual studies contribute to specific areas of clinical leadership development.

ERA+ clinical leadership in nursing education framework	**References**
Ethics	Aicken, C., Hodgson, L., de Vries, K., Wilkinson, I., Aldridge, Z., & Galvin, K. (2021); Cable, S., & Graham, E. (2018); Cummings, G. G., Lee, S., Tate, K., Penconek, T., Micaroni, S. P. M., Paananen, T., & Chatterjee, G. E. (2021); Edmonstone, J., & MacKenzie, H. (2005); Leathard, H. L., & Cook, M. J. (2009); Leigh, J. A., Wild, J., Hynes, C., Wells, S., Kurien, A., Rutherford, J., Rosen, L., Ashcroft, T., & Hartley, V. (2015); Mrayyan, M.T. (2022); Pepin, J., Dubois, S., Girard, F., Tardif, J., & Ha, L. (2011); Stubin, C. (2021).
Professional nursing	Aicken, C., Hodgson, L., de Vries, K., Wilkinson, I., Aldridge, Z., & Galvin, K. (2021); American Association of Colleges of Nursing (2007); Cable, S., & Graham, E. (2018); Clausen, C., Cummins, K., & Dionne, K. (2017); Connolly, M., Jacobs, S., & Scott, K. (2018); Cook, M. J., & Leathard, H. L. (2004); Cummings, G. G., Lee, S., Tate, K., Penconek, T., Micaroni, S. P. M., Paananen, T., & Chatterjee, G. E. (2021); Duprez, V., Dhont, L., van der Cingel, M., Hafsteinsdóttir, T. B., & Malfait, S. (2024); Edmonstone, J., & MacKenzie, H. (2005); Enterkin, J., Robb, E., & McLaren, S. (2013); Gerostergios, H., & Soroken, L. (2024); Gifford, W. A., Davies, B., Graham, I. D., Lefebre, N., Tourangeau, A., & Woodend, K. (2008); Guibert-Lacasa, C., & Vázquez-Calatayud, M. (2022); Ha, L. & Pepin, J. (2018); Joseph, M. L., & Huber, D. L. (2015); Leathard, H. L., & Cook, M. J. (2009); Leigh, J. A., Wild, J., Hynes, C., Wells, S., Kurien, A., Rutherford, J., Rosen, L., Ashcroft, T., & Hartley, V. (2015); McCarthy, V.J.C. et al. (2019); Mrayyan, M.T. (2022); Pepin, J., Dubois, S., Girard, F., Tardif, J., & Ha, L. (2011); Scammell, J. M. E., Apostolo, J. L. A., Bianchi, M., Costa, R. D. P., Jack, K., Luiking, M., & Nilsson, S. (2020); Stubin, C. (2021); Swanwick, T., & McKimm, J. (2012); Walker, R., Cooke, M., Henderson, A., & Creedy, D. K. (2011); Williamson, T. (2005).
Innovation and change	Aicken, C., Hodgson, L., de Vries, K., Wilkinson, I., Aldridge, Z., & Galvin, K. (2021); American Association of Colleges of Nursing (2007); Cable, S., & Graham, E. (2018); Clausen, C., Cummins, K., & Dionne, K. (2017); Cummings, G. G., Lee, S., Tate, K., Penconek, T., Micaroni, S. P. M., Paananen, T., & Chatterjee, G. E. (2021); Duprez, V., Dhont, L., van der Cingel, M., Hafsteinsdóttir, T. B., & Malfait, S. (2024); Edmonstone, J., & MacKenzie, H. (2005); Enterkin, J., Robb, E., & McLaren, S. (2013); Gerostergios, H., & Soroken, L. (2024); Gifford, W. A., Davies, B., Graham, I. D., Lefebre, N., Tourangeau, A., & Woodend, K. (2008); Guibert-Lacasa, C., & Vázquez-Calatayud, M. (2022); Ha, L. & Pepin, J. (2018); Joseph, M. L., & Huber, D. L. (2015); Leigh, J. A., Wild, J., Hynes, C., Wells, S., Kurien, A., Rutherford, J., Rosen, L., Ashcroft, T., & Hartley, V. (2015); McCarthy, V.J.C. et al. (2019); Pepin, J., Dubois, S., Girard, F., Tardif, J., & Ha, L. (2011); Scammell, J. M. E., Apostolo, J. L. A., Bianchi, M., Costa, R. D. P., Jack, K., Luiking, M., & Nilsson, S. (2020); Stubin, C. (2021); Swanwick, T., & McKimm, J. (2012); Walker, R.,

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Influencing and advocacy	Aicken, C., Hodgson, L., de Vries, K., Wilkinson, I., Aldridge, Z., & Galvin, K. (2021); Cable, S., & Graham, E. (2018); Clausen, C., Cummins, K., & Dionne, K. (2017); Connolly, M., Jacobs, S., & Scott, K. (2018); Cook, M. J., & Leathard, H. L. (2004); Cummings, G. G., Lee, S., Tate, K., Penconek, T., Micaroni, S. P. M., Paananen, T., & Chatterjee, G. E. (2021); Duprez, V., Dhont, L., van der Cingel, M., Hafsteinsdóttir, T. B., & Malfait, S. (2024); Edmonstone, J., & MacKenzie, H. (2005); Enterkin, J., Robb, E., & McLaren, S. (2013); Gerostergios, H., & Soroken, L. (2024); Gifford, W. A., Davies, B., Graham, I. D., Lefebre, N., Tourangeau, A., & Woodend, K. (2008); Guibert-Lacasa, C., & Vázquez-Calatayud, M. (2022); Ha, L. & Pepin, J. (2018); Joseph, M. L., & Huber, D. L. (2015); Leathard, H. L., & Cook, M. J. (2009); Leigh, J. A., Wild, J., Hynes, C., Wells, S., Kurien, A., Rutherford, J., Rosen, L., Ashcroft, T., & Hartley, V. (2015); McCarthy, V.J.C. et al. (2019); Mrayyan, M.T. (2022); Pepin, J., Dubois, S., Girard, F., Tardif, J., & Ha, L. (2011); Scammell, J. M. E., Apostolo, J. L. A., Bianchi, M., Costa, R. D. P., Jack, K., Luiking, M., & Nilsson, S. (2020); Stubin, C. (2021); Walker, R., Cooke, M., Henderson, A., & Creedy, D. K. (2011); Williamson, T. (2005).
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Communication and collaboration	Aicken, C., Hodgson, L., de Vries, K., Wilkinson, I., Aldridge, Z., & Galvin, K. (2021); American Association of Colleges of Nursing (2007); Cable, S., & Graham, E. (2018); Clausen, C., Cummins, K., & Dionne, K. (2017); Connolly, M., Jacobs, S., & Scott, K. (2018); Cook, M. J., & Leathard, H. L. (2004); Cummings, G. G., Lee, S., Tate, K., Penconek, T., Micaroni, S. P. M., Paananen, T., & Chatterjee, G. E. (2021); Duprez, V., Dhont, L., van der Cingel, M., Hafsteinsdóttir, T. B., & Malfait, S. (2024); Edmonstone, J., & MacKenzie, H. (2005); Enterkin, J., Robb, E., & McLaren, S. (2013); Gerostergios, H., & Soroken, L. (2024); Guibert-Lacasa, C., & Vázquez-Calatayud, M. (2022); Ha, L. & Pepin, J. (2018); Joseph, M. L., & Huber, D. L. (2015); Leathard, H. L., & Cook, M. J. (2009); Leigh, J. A., Wild, J., Hynes, C., Wells, S., Kurien, A., Rutherford, J., Rosen, L., Ashcroft, T., & Hartley, V. (2015); McCarthy, V.J.C. et al. (2019); Mrayyan, M.T. (2022); Pepin, J., Dubois, S., Girard, F., Tardif, J., & Ha, L. (2011); Scammell, J. M. E., Apostolo, J. L. A., Bianchi, M., Costa, R. D. P., Jack, K., Luiking, M., & Nilsson, S. (2020); Stubin, C. (2021); Swanwick, T., & McKimm, J. (2012); Walker, R., Cooke, M., Henderson, A., & Creedy, D. K. (2011); Williamson, T. (2005).

4. Discussion

KEY TAKEAWAYS

- Clinical leadership is a **practice-embedded** form of influence that must be clearly distinguished from generic or managerial leadership.
- Leadership development should be integrated with the development of **clinical expertise**, as effective influence at the bedside depends on sound clinical judgement.
- A wide range of teaching approaches is described in the literature, but evidence regarding their impact on observable leadership behaviour remains **limited**.
- Clinical leadership development appears to be most coherently supported through **longitudinal** curriculum integration, authentic clinical experiences and organisational alignment, rather than through isolated educational interventions.
- Current literature provides little guidance on how clinical leadership should be **assessed**, highlighting the need for behavioural indicators and longitudinal assessment approaches.

This literature summary demonstrates that a broad range of **pedagogical approaches** is used internationally to foster clinical leadership in nursing education, yet the evidence for their **effectiveness** within bachelor-level, bedside-oriented programmes remains limited. It was not designed to compare teaching methods, and the available evidence does not allow conclusions about the superiority of any specific approach. Experiential learning (e.g., simulation, internship with guided immersion in clinical practice), reflective learning (e.g., journaling, structured debriefing), relational learning (e.g., mentoring, coaching, role modelling) and formal learning (e.g., workshops, lectures, theoretical input) each contribute to essential components of clinical leadership, such as communication structuring (structuring information, SBARR, handover), influence behaviours (non-hierarchical influence, collegial persuasion), situational decision-making (prioritising, clinical reasoning, selecting appropriate actions) and reflective sense-making (interpreting events and understanding their meaning). However, although these pedagogies appear promising, most studies rely on self-reported outcomes, small samples or early-career nurse populations rather than undergraduate students. Consequently, the extent to which these methods reliably shape **observable leadership behaviour** in bachelor-level nursing students remains unclear.

A central challenge is the lack of **conceptual clarity** surrounding clinical leadership. Literature that does offer such clarity such as Grindel's description of the bedside clinical leader, as well as Brown's antecedents ("leading self" and "managing self") and Pepin's staged developmental model underscores that clinical leadership is rooted in **clinical expertise, relational**

influence and situated decision-making. This conceptual foundation is crucial: without an explicit and operationalised definition, curriculum design risks drifting toward **generic leadership training** instead of cultivating the practice-embedded, influence-focused behaviours that characterise bedside clinical nursing leadership. Moreover, because influence at the bedside is inseparable from accurate assessment, prioritisation and clinical judgement, leadership development must be aligned with rather than isolated from the growth of clinical expertise. In other words, leadership should not be taught beside clinical practice but through it, via longitudinal learning experiences across coursework and clinical placements that explicitly target these behaviours.

A further, and particularly striking, gap concerns **evaluation and assessment**. Although numerous teaching methods are described, the literature provides very limited guidance on how clinical leadership should be assessed in undergraduate programmes. This absence of robust assessment frameworks makes it difficult for nursing education to monitor students' progression, ensure consistency across educators or demonstrate that leadership development is occurring beyond student self-perception. Because bedside clinical leadership is behavioural and relational, progress must be made visible through clear, observable indicators that translate theoretical constructs into concrete behaviours. However, this requires further validation and consensus.

Although evaluation was not an explicit focus of this literature summary, this absence of assessment guidance suggests that clinical leadership especially in its bedside, practice-embedded form is not easily captured through traditional assessment approaches or standardised leadership scales. Widely used instruments such as the Leadership Practices Inventory (LPI) can be valuable for developing leadership self-awareness and for introducing students to observable leadership behaviours; however, these tools were not designed to assess the situated, influence-based and clinically grounded behaviours that define bedside clinical leadership for bachelor-level nurses. Their usefulness therefore depends on embedding them within a broader, explicitly articulated clinical leadership framework, supported by a clear conceptual definition and complementary behavioural indicators.

Given the relational, contextual and developmental nature of bedside clinical leadership, evaluation may need to move beyond traditional assessment approaches towards strategies that document leadership development over time and across multiple learning environments. Relevant evidence may emerge from classroom-based learning activities, guided reflection, simulation experiences and clinical placements, allowing educators and students to identify patterns of growth across different contexts. Such approaches recognise that leadership

development is gradual and context-dependent rather than demonstrated through isolated assessment moments.

A portfolio-based approach, embedded within a broader programmatic assessment framework, may offer a promising avenue for capturing this development. Within such a programmatic assessment approach, portfolios are not an end in themselves but serve as a vehicle for collecting evidence of development across learning experiences and contexts. Portfolios allow students to document leadership experiences across coursework and clinical placements, integrate supervisor, mentor and peer feedback, and reflect on their evolving leadership identity and practice. Rather than focusing on single high-stakes assessments, portfolio approaches can support ongoing dialogue about development and provide a longitudinal view of students' progression.

Such an approach aligns well with the developmental and practice-based nature of bedside clinical leadership, while also preserving the educational value of learning environments that are primarily designed for growth, reflection and feedback. Establishing such longitudinal and behaviour-oriented approaches therefore represents an important direction for strengthening the evaluation of clinical leadership in undergraduate nursing education.

Another important consideration concerns the boundary between undergraduate education and workplace-based leadership development. Several developmental models included in this literature summary describe progression towards organisational influence, change leadership, mentoring and participation in broader decision-making processes. However, these models often represent a continuum of professional growth rather than minimum expectations for graduating nurses. Not all leadership capabilities described in the literature are equally attainable or assessable within undergraduate programmes, particularly when learning opportunities depend on placement contexts. Nursing education should therefore focus on establishing strong foundations for bedside clinical leadership, including self-management, communication, teamwork, advocacy and the ability to influence patient care. More advanced leadership capabilities may continue to develop during the transition to professional practice and throughout nurses' careers (Chappell & Richards, 2015).

Moreover, the literature reviewed suggests that isolated interventions (workshops, simulations, action learning sets or reflective exercises) are insufficient as standalone strategies. Instead, clinical leadership develops most coherently within **longitudinal, integrated curricula** that thread leadership expectations across courses, clinical placements and progressive milestones. Such integration ensures that students repeatedly encounter, practise and reflect on leadership

within **authentic care environments**, supported by role models and organisational alignment. Yet evidence describing how to structure, map or assess such longitudinal curricula remains sparse. This points to an urgent need for programmes to move beyond discrete teaching methods toward strategic curriculum design, in which leadership is positioned as a core graduate attribute, supported by clear learning outcomes, partnership with clinical environments and systematic evaluation.

A further challenge concerns the shared responsibility for clinical leadership development between educational institutions and clinical practice settings. Many of the approaches identified in this literature summary, including role modelling, mentoring, participation in quality improvement activities and opportunities for increasing responsibility, depend on supportive clinical learning environments. However, the literature suggests that effective leadership development cannot be achieved simply by transferring additional responsibilities to clinical partners. Clinical settings themselves require conditions that enable student leadership development, including educators and mentors who understand the concept of bedside clinical leadership, opportunities for meaningful student participation in team processes, psychological safety to speak up and experiment with leadership behaviours, and sufficient organisational support for coaching and reflection. Leadership development is therefore best understood as a partnership in which educational institutions and healthcare organisations share responsibility for creating learning opportunities. Rather than focusing on where responsibility begins or ends, future work should explore how both partners can align expectations, prepare mentors and create consistent leadership learning experiences across educational and clinical settings.

Taken together, these findings emphasise that the development of bedside clinical leadership cannot rely on generic leadership frameworks or isolated pedagogical techniques, nor can it be assumed to transfer uniformly across educational or clinical contexts. Clinical leadership is inherently shaped by local professional cultures, organisational expectations, patterns of communication and the degree of autonomy afforded to students. Leadership teaching must be **context-sensitive** and tailored, rather than prescriptive or universal. To advance the field, nursing education programmes will need to combine a clear and operationalised definition of clinical leadership with longitudinal curricular integration, behaviour-based assessment and a culturally responsive approach that aligns learning opportunities with the realities of diverse practice environments. Further research is required to develop and validate such context-appropriate frameworks. This includes the behavioural indicators, assessment strategies and curricular structures needed to support the consistent development of bedside clinical leadership in bachelor-level nursing education and in nursing practice.

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