

Contemporary issues

The structured practice approach: An innovation for clinical skills education

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ABSTRACT

In nursing curricula, it is vital that undergraduate nursing students learn specialist clinical skills within simulated laboratory settings and understand their application to practice. Along with the physical clinical skill, students must develop their critical thinking and clinical reasoning skills to understand when and why certain skills would be utilised, and what outcomes are predicted. There are many ways to facilitate learning within this setting, but there is little clear instruction for the educator tasked with demonstrating within simulated clinical environments. With this in mind, the Structured Practice Approach was developed, incorporating current teaching and learning practices and philosophies, with added targeted questioning to facilitate critical thinking and clinical reasoning. This approach clearly outlines teaching steps for a clinical skill.

The approach was trialled at a regional university with positive anecdotal outcomes and feedback, highlighting the need for more formal analysis of the use and effectiveness of the Structured Practice Approach.

1. Introduction

Nurses must acquire both cognitive and psychomotor clinical skills during their undergraduate education if they are to engage in safe clinical practice; however, research has found that some nurses feel underprepared or do not have the requisite psychomotor or cognitive skills upon graduating their programs (Daniels and Heradien, 2023; Missen et al., 2016; Ravik et al., 2017; Zamanzadeh et al., 2015). Patient safety is linked to nurses having well-developed cognitive as well as psychomotor skills. Nurses must understand when, with whom and why it is appropriate to use a particular clinical skill, as well as be able to perform the skill. Simulated education environments, such as simulated nursing wards, provide the conditions in which cognitive and psychomotor clinical skills can be practiced safely prior to attending clinical settings (Bloomfield et al., 2013). To facilitate the development of the required cognitive and psychomotor clinical skills, a variety of teaching strategies are used within nursing including low, medium and high fidelity face-to-face and online simulation, clinical skills demonstration, use of task-trainers, e-learning and video simulation (Arabpur et al., 2022; Bloomfield et al., 2013; de Lima Lopes et al., 2019; Hanshaw and Dickerson, 2020).

The International Association for Clinical Simulation and Learning (INACSL) Standards Committee identified five criteria required for

facilitation during simulation-based experiences including: the facilitator/demonstrator having specific skills and knowledge in simulation pedagogy; the approaches are appropriate for the participants; the inclusion of preparatory and debriefing activities, and the delivery of cues to assist participants to meet outcomes as well as post-simulation support. Additionally, Topping et al. (2015) found that nursing demonstrators delivering simulated education were expected to have an understanding of group dynamic theories/team facilitation, learning theories and strategies as well as have a repertoire of real-world examples and the ability to create realistic scenarios. Ideally, nursing demonstrators would have the knowledge, skills and approaches to be able to meet these criteria and expectations; however, that is not always the reality, especially for nursing educators new to demonstrating in simulated education environments. Nursing educators engaging in demonstration may be currently practicing clinicians with little or no education experience, qualifications or training, may not have knowledge of simulation pedagogy, may not have developed the simulation activities/program they are teaching and may not be involved in pre or post simulation activities. To support nursing demonstrators in simulated education environments it is important to provide an approach which supports them to develop both the psychomotor and cognitive skills of undergraduate nurses; however, currently, there is no prescribed approach to nursing demonstration evident in global literature (INACSL

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Table 1
Simulated education environment demonstration approaches – advantages and concerns.

Pedagogical approach/ instructional technique	Advantages	Concerns
Halsted's See one, do one, teach one method (Romero et al., 2018)	■ Demonstration of educator's psychomotor skills prior to students undertaking the skill.	■ Demonstrator is expected to be accurate and proficient with the psychomotor skill otherwise errors may be passed to learners. ■ Competency is expected after seeing it once. ■ Psychomotor skill focused, no/limited cognitive skills development. ■ Memorisation rather than active learning. ■ Limited opportunity for practice. ■ Unclear when/if errors are corrected.
Peyton's Four-Step approach (Romero et al., 2018)	■ Demonstration of educator's psychomotor skills prior to students undertaking the skill. ■ Student requires memorisation of sub-steps to be demonstrated.	■ Demonstrator is expected to be accurate and proficient with the psychomotor skill otherwise errors may be passed to learners. ■ Psychomotor skill focused, limited cognitive skills development. ■ Memorisation rather than active learning. ■ Limited opportunity for practice. ■ Unclear when/if errors are corrected.
Clinical Reasoning Cycle (Levett-Jones et al., 2010)	■ Application to practice incorporated. ■ Cognitive skills development.	■ Relies on the learner already having and understanding the application of the requisite psychomotor clinical skills.
Kolb's Experiential Learning (Fewster-Thuente and Batteson, 2018; Kolb, 1984; Li et al., 2022)	■ Psychomotor skills actively practiced. ■ Students are required to reflect on the skill.	■ Demonstrator may/may not show how to perform the psychomotor skill – focused on active learner. ■ No guidance on how the psychomotor skill is practiced or experienced by the learner – sub- steps may not be included. ■ Reflection and abstract conceptualisation need to be guided – demonstrator skill required.
Video demonstration (Anuramalar et al., 2023; Devi et al., 2019)	■ Accessible across distance. ■ Psychomotor skills can be viewed multiple times.	■ Cognitive skills may not focus on application to practice. ■ Video requires accuracy of the demonstrated skill otherwise errors may be passed on to learner. ■ No psychomotor practice. ■ No/limited cognitive skills development. ■ Memorisation rather than active learning. ■ Impersonal and the ability to ask questions during demonstration is not available.
Face-to-face demonstration (Anuramalar et al., 2023; Devi et al., 2019)	■ Psychomotor skills can be practiced. ■ Cognitive skills can be developed alongside psychomotor practice. ■ Application to practice can be incorporated. ■ Learners can be provided with the opportunity to ask questions.	■ Demonstrator is expected to be accurate and proficient with the psychomotor skill otherwise errors may be passed to learners. ■ Demonstration method and amount of practice is reliant on the experience and preference of the demonstrator. ■ Cognitive skills and application to practice may not be a focus.

Standards Committee et al., 2021).

Demonstration is a direct instructional technique available to educators which allows them to illustrate to learners how to perform specific tasks or skills. Direct instruction such as demonstration is teacher led, de-emphasises exploratory approaches and focuses on learning foundational information including psychomotor clinical skills (Churchill et al., 2011). While direct instruction facilitates the transfer of how to perform clinical skills, the face-to-face setting of a simulated nursing ward also enables the dialogue necessary for educators to lead learners to understand the application of the skill to clinical practice and to develop their cognitive skills of critical thinking and clinical reasoning (Arabpur et al., 2022; Bloomfield et al., 2013; Daniels and Heradien, 2023).

Several instructional techniques for demonstrating psychomotor clinical skills are evident in healthcare literature including Halsted's three-tiered approach of 'see one, do one, teach one' in which medical students are expected to become proficient in a task after seeing it performed just once (Cameron, 1997; Romero et al., 2018). Peyton's four-step approach is another method used: first step - the educator demonstrates a task at their normal pace without discussing any of the sub-steps; second step - the educator repeats the procedure while also describing each sub-step of the task; third step - the educator performs the task while the student explains each of the sub-steps to the educator; fourth step - the student performs the skill themselves (Romero et al., 2018). Video demonstration is another approach which has increasingly been used to facilitate the transfer of understanding of how to perform clinical skills; however, there are mixed results when comparing this to traditional face-to-face demonstration. Anuramalar et al. (2023) found that both traditional face-to-face and video demonstration produced

comparable results in student learning on oral medication, while Devi et al. (2019) found that traditional face-to-face demonstration was more effective in assisting nursing students to learn how to perform obstetrical palpation. Each of these instructional approaches are reliant upon both passive and active learning on how to complete the clinical skills but lack any significant focus on the development of cognitive clinical skills, that is, critical thinking and clinical reasoning.

Clinical reasoning incorporates the use of critical thinking, discipline specific knowledge and experiential learning to enable professional judgements, identification of appropriate interventions and resolution of issues (Levett-Jones and Smith, 2023; Morgan, 2022). In response to a failure of nurses to identify and respond to patient deterioration due to poor clinical reasoning, Levett-Jones et al. (2010) developed the Clinical Reasoning Cycle and determined that the initial development of clinical reasoning needed to be facilitated during undergraduate programs. Utilising the Clinical Reasoning Cycle, nurses identify which patient needs their care at that time through considering cues such as signs and symptoms, what actions need to be undertaken, when and why these actions are needed, then they determine if the actions have been effective or not and if any further actions are necessary. As part of the Clinical Reasoning Cycle, the nurse reflects on the process to determine what worked and what did not so they can respond more effectively in a similar situation (Levett-Jones and Smith, 2023). Another instructional technique which aims to develop cognitive skills is Kolb's Experiential Learning. Kolb (1984) describes experiential learning as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combinations of grasping and transforming the experience." Kolb (1984) developed a four stage learning style theory involving four components: a concrete experience (clinical

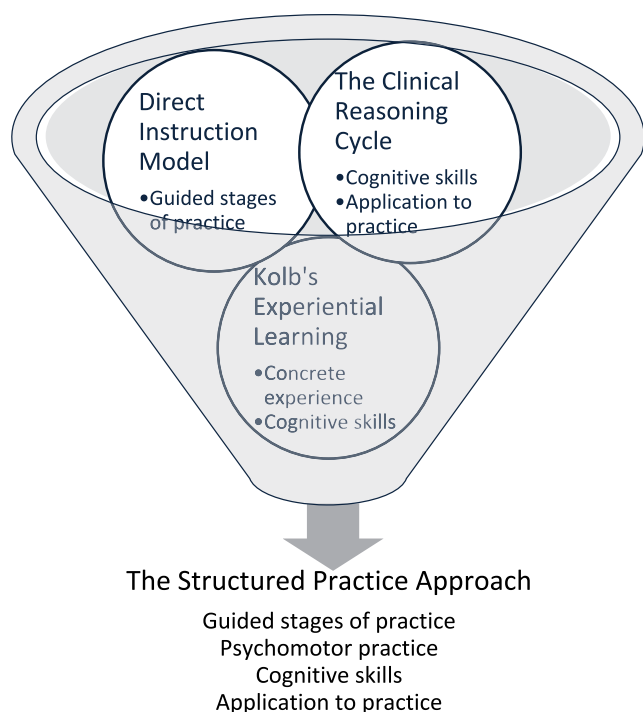


Fig. 1. The Structured Practice Approach

Note. This figure demonstrates the elements from the Direct Instruction Model, The Clinical Reasoning Cycle and Kolb's Experiential Learning which are incorporated/adapted in the Structured Practice Approach.

skill); reflective observation on this experience; abstract conceptualisation and active experimentation (Fewster-Thunte and Battenon, 2018; Kolb, 1984; Li et al., 2022). During the concrete experience, the student undertakes the skill, then engages in reflective observation in which they consider the skill from different perspectives. This leads them to abstract conceptualisation whereby they link their reflections to what they already know potentially transforming their understanding. The last component is active experimentation where they use their new understanding of the skill in a more expansive environment (Fewster-Thunte and Battenon, 2018; Li et al., 2022). A comparison of these pedagogical approaches and instructional techniques demonstrates that there are advantages in their use as well as areas of concern which were considered when developing a new approach for use by nursing educators demonstrating in simulated education environments (Table 1).

1.1. Structured practice approach

The pedagogical approaches and instructional techniques currently used in demonstration focus either on the development of psychomotor or cognitive skills and not both, provide limited opportunity for practice, do not provide clear instruction on the psychomotor components of the skill, do not provide opportunity for early error correction or are reliant on the educator having a previous understanding of learning and teaching theories and simulation pedagogy. In response to the limited guidance on how to effectively demonstrate clinical skills to nursing students within the simulated education environments and due to concerns related to the teaching approaches currently available, the first author adapted the Direct Instruction Model described by Joyce et al. (2009) to integrate components of Kolb's Four-stage Learning Style Theory and the Clinical Reasoning Cycle described by Levett-Jones and Smith (2023) (Fig. 1). The Direct Instruction Model described by Joyce et al. (2009) incorporates five phases: orientation, presentation, structured practice, guided practice and independent practice. The 'orientation phase' describes the preparation undertaken prior to commencing the task while during 'the presentation phase', the educator provides an

explanation and an initial demonstration of the task. The third phase, 'structured practice' involves the educator leading the students through practice examples one step at a time, followed by 'guided practice' in which students practice the task with support from the educator. During the final phase, 'independent practice', students complete the task without the need for educator support.

The step-by-step schema of The Structured Practice Approach gives clear guidance to nursing educators on how to demonstrate within simulated education environments and how to actively engage students in practicing both psychomotor and cognitive skills. The Structured Practice Approach incorporates the concrete experience described as an experiential learning by Kolb (1984) while also utilising the guided step-by-step approach of the Direct Teaching Model (Joyce et al., 2009). The Structured Practice Approach requires students to actively practice the psychomotor skill rather than passively watching the demonstrator or a peer undertaking the clinical skill, while repetition of the psychomotor skill enables the student to become familiar with and increase their confidence on how to perform the clinical skill.

The Structured Practice Approach provides understandable, step-by-step instructions for students on how to perform psychomotor skills and supports the development of their cognitive skills related to the clinical skill. The integration of questions and discussion as well as guidance and clarification allow the nursing demonstrator to assist learners to develop cognitive skills (clinical reasoning) alongside their psychomotor skills. The step-by-step approach of The Structured Practice Approach utilises the cognitive process of chunking by breaking down the large amounts of information required to understand an entire clinical skill into smaller segments (chunks) which may be more easily recalled. Chunking refers to the grouping of items with strong associations together into a singular familiar chunk thereby reducing the load on working memory and supporting integration into longer term memory (Thalmann et al., 2019). The step-by-step approach also allows psychomotor and cognitive errors to be addressed during the associated step, thus reducing the risk of early errors negatively impacting the overall correctness of the clinical skill. An example of correcting an issue may include showing a student how they have contaminated their sterile environment during a wound dressing. The questioning of students at each step of The Structured Practice Approach is important in the development of critical thinking surrounding the clinical skill and its application to practice, that is, clinical reasoning (Levett-Jones and Smith, 2023).

The first author coined the term 'The Structured Practice Approach' to describe the guided teaching approach which nursing educators could utilise to actively develop the psychomotor and cognitive skills of learners within simulated education environments. The first phase, the orientation phase, is undertaken through preparatory activities prior to the learners attending the simulated education environment. The foci of the Structured Practice Approach are the second (presentation), third (structured practice) and fourth (guided practice) phases as these are carried out within the simulated education environment. Nursing students engage in the fifth phase, independent practice, during later simulated education sessions in their nursing program and during professional experience placements (Table 2). The Structured Practice Approach incorporates placing nursing students into learner groups of up to four. This enables them to work with and learn from their peers as well as from the educator while each clinical skill is broken down into a series of steps. Peer to peer learning actively supports the development of relationships, enables the sharing of ideas and knowledge, increases interest and the likelihood of sharing content which is relevant, while expanding the understanding of those participating (Omar, 2021).

Throughout each step of The Structured Practice Approach, the educator is asking questions and providing information which requires critical thinking and supports the development of clinical reasoning. For example, while using The Structured Practice Approach to complete a wound dressing, the educator may ask "why do we need to use an aseptic technique for wound dressings?" or "who is at risk for slow wound

Table 2
Structured practice approach phases.

	Action	Note	Rationale
Step 1 Orientation	Students engage in preparatory activities prior to attending the simulated clinical environment.	The activities relate to the clinical skills which will be undertaken in the simulated clinical environment.	<i>Preparation ensures expectations are understood and increases confidence during participation.</i>
Within the Simulated Clinical Environment			
Step 2 Presentation/ Setup	The educator describes the skill and gathers the necessary equipment to undertake the clinical skill, then each learner group gathers the same equipment.	Description of skill is brief. Enough equipment for each group member to practice the clinical skill.	<i>Describing the skill orients the student to what they are doing. All students will have the opportunity to practice the skill.</i>
Step3 Structured Practice (steps 3–5)	The educator undertakes the first step of the clinical skill. After the educator has finished the step, each student performs the same step.	The educator circulates to check techniques and understanding and corrects any issues at this step. Educator asks questions related to the skill while circulating.	<i>Correcting techniques ensures the clinical skill is completed correctly. Questioning helps to develop cognitive skills and understanding.</i>
Step 4 Structured Practice	The educator undertakes the next step of the clinical skill. The student then completes this step. This step-by-step approach continues until the skill is complete.	The educator circulates to check techniques and understanding and corrects any issues at this step.	<i>Checking understanding supports the development of clinical reasoning. Using a step-by-step approach reduces the cognitive load of trying to recall large amounts of information.</i>
Step 5 Structured Practice	The entire skill is then repeated, combining smaller steps together.	All students should have a minimum of two practices.	<i>Repetition increases recall of the clinical skill and allows for the development of clinical reasoning around the skill.</i>
Step 6 Guided Practice	Students continue practicing the learnt clinical skill within the simulated education setting while being guided by the educator.	Peers guide each other to practice the clinical skill. The educator guides students to apply the clinical skill to case studies.	<i>Students need to consider why the clinical skill is appropriate for the case study.</i>
In Clinical Placements or Clinical Simulation sessions later in their program of study			
Step 7 Independent Practice	Students practice learnt clinical skills, critical thinking and clinical reasoning with growing independence in the clinical setting.	Supervision of clinical skills is still required during this stage.	<i>Students are required to be independent beginner practitioners upon graduation.</i>

healing and why?” or “when would you need to contact the doctor about a wound?” The questioning can extend to specific components of clinical skills, for example, asking learners “although a 90° angle is recommended for subcutaneous injections, when might you need to adjust the angle?”

As the course coordinator of clinical skills courses at a regional university, the first author, instructed sessional educators in the simulated education environments on The Structured Practice Approach and requested they use this instructional technique. The sessional educators were a mix of staff who were new to nursing education and demonstration, while others had previously engaged in demonstration activities. The staff who were new to demonstration required guidance on instructing and engaging nursing students as well as on how to demonstrate, while those who had previously engaged in demonstration indicated that they learnt how to demonstrate as they taught. To ensure effective instruction of educators in The Structured Practice Approach, a multimodal strategy was employed which included face-to-face sessions, the provision of a video on how to undertake this approach, written instructions in an orientation manual for the simulated nursing wards was provided and email or telephone clarification was available when questions arose (de Lima Lopes et al., 2019; Topping et al., 2015). No challenges were experienced in the implementation of The Structured Practice Approach.

Anecdotal informal feedback was obtained from four nursing educators in 2019 who used The Structured Practice Approach. Feedback indicated that The Structured Practice Approach was easy to use, it saved time explaining the skill to all students, it was easy to correct

students if there was an error during one of the steps and that students who would otherwise step back and allow other students to undertake clinical skills practice participated. Educators also found the overall engagement of students increased during the clinical skills practice sessions. Educators indicated that a written template with items to include would be helpful, that they wanted examples of the clinical reasoning associated with clinical skills to be provided and that they felt the step-by-step approach was too slow for some learners. It was not clear from the educators’ feedback why they required examples of clinical reasoning for clinical skills but may relate to their own clinical reasoning abilities – this is an area for further research.

Anecdotal informal feedback via a survey was obtained from nursing students at the end of their three-day clinical skills practice sessions in 2019 and 2022 where The Structured Practice Approach was used for demonstration. Descriptive statistical analysis was undertaken with the results indicating that most students found that The Structured Practice Approach enabled clear demonstrator explanation, was helpful, that they experienced few difficulties and would recommend its use (Table 3).

The informal feedback from students and nursing educators indicates that further research surrounding The Structured Practice Approach as a method for demonstrating clinical skills and developing the associated critical thinking and clinical reasoning of nursing students is needed. This innovative instructional technique has potential to provide a clear, standardised method for demonstration of clinical skills within simulated education environments to ensure undergraduate learner engagement, improve understanding of the psychomotor components of

Table 3
Anecdotal informal survey feedback from students.

Survey responses	Semester 12,019 (n = 168)	Semester 22,019 (n = 123)	Semester 12,022 (n = 180)
Agreed demonstrator provided clear explanation	92.22 % (154) 1 no response	99.19 % (122) 1 no response	99.4 % (176) 3 no response
Student found Structured Practice helpful	98.14 % (163) 8 no/not applicable responses	99.19 % (121) 2 no response	96.07 % (171) 2 no response
Student experienced no difficulties	84.05 % (137) 5 not applicable responses	85.37 % (105) 1 no response	79.55 % (140) 4 no/not applicable responses
Student recommended Structured Practice	98.75 % (162) 8 no/not applicable responses	99.19 % (121) 2 no response	100 % (172) 8 no/not applicable responses

Note. The no and not applicable responses were excluded from percentage calculations.

the clinical skill as well as the clinical reasoning and application to practice.

CRedit authorship contribution statement

Susan Morgan: Writing – original draft, Project administration, Formal analysis, Data curation, Conceptualization. **Andrew Davies:** Writing – review & editing, Writing – original draft, Conceptualization. **Liz Ryan:** Writing – review & editing, Writing – original draft, Conceptualization.

Author statement

Dr. Susan Morgan conceptualised the Structured Practice Approach, data curation and formal analysis of the anecdotal survey feedback, project administration and wrote the original manuscript. Dr. Morgan revised the manuscripts in consultation with the other authors.

Dr. Andy Davies contributed to the conceptualisation of the research project and writing of the original draft, review and editing of the manuscript.

Dr. Liz Ryan contributed to the conceptualisation of the research project and writing of the original draft, review and editing of the manuscript.

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