

ORIGINAL RESEARCH

Teaching to learn, learning to teach: Clinical thinking tools to support novice clinical educators, preceptors and students

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ABSTRACT

Introduction and background: Today's complex healthcare environment requires skilled clinical decision making. Yet, this skill in novice and student nurses is documented as linear, based on limited knowledge and experience, and often focused on single problems. Concurrently, an ongoing shortage of nurse educators has resulted in many clinical instructors and preceptors being relatively novice as educators.

Methods: Teaching and assessing critical thinking and clinical reasoning is challenging in the context of clinical practice education, especially for novice clinical instructors and preceptors. Critical thinking and clinical reasoning tools are presented as a useful pedagogical approach for teaching and assessing critical thinking, clinical reasoning and clinical decision-making both with students as well as with novice educators and preceptors.

Conclusions: By utilizing theoretically-based clinical thinking tools to guide learners through critical thinking, clinical reasoning and decision-making processes, both learners and novice educators benefit.

Key Words: Critical thinking, Clinical reasoning, Clinical decision-making, Novice nurse educators

1. INTRODUCTION AND BACKGROUND

The complexity of the current health care environment and patient situations requires nurses to have sophisticated skill in critical thinking, clinical reasoning and clinical decision-making. Indeed, since critical thinking skills, clinical reasoning and effective clinical decision-making are directly linked to patient safety and outcomes of care,^[1,2] nurses who have not effectively developed these abilities put patient safety at risk.^[3,4] However, clinical decision making in novice and student nurses is well documented as linear, based on limited knowledge and experience, and often focused on single tasks or problems.^[5-7] Thus, it is a professional imperative

to improve patient safety by integrating practical tools for developing critical thinking and clinical reasoning in both undergraduate and post-licensure education and practice.^[1,2] Various clinical decision-making theoretical frameworks to support nursing education exist in the literature, however operationalizing these frameworks can be challenging in the context of clinical practice education, particularly for novice clinical instructors and preceptors.

In the current context of a severe and ongoing nursing shortage,^[8] and a parallel shortage of nursing academia,^[9,10] the contribution of skilled clinical instructors and preceptors to the education and development of the nursing workforce is

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more important than ever. However, clinical nurse instructors in North America are typically hired for their clinical expertise and are not required to have training in pedagogical methodology or have past experience as educators.^[11–13] Similarly, nurse preceptors are responsible for developing and validating the competencies of new graduate nurses and post-licensure nurses new to specialty areas, but many do not have the education, training or preparation to do so adequately.^[14–16] Adding to the challenge, the severity of the nursing shortage in many areas has resulted in many clinical instructors and preceptors being relatively inexperienced as nurses themselves,^[17] and not having the experiential knowledge base on which to guide learners' critical thinking, clinical reasoning and clinical decision-making.

The purpose of this article is to offer convenient, easy-to-deliver Clinical Thinking Tools (CTTs) not only as strategies to teach and promote critical thinking, clinical reasoning and clinical decision-making with students, but that can also be used to support the development of teaching skills in novice clinical instructors and preceptors. Originally designed to support clinical instructors and preceptors in the use of a new clinical evaluation tool and process,^[18] the CTTs presented here are also an effective approach to teaching a step-by-step process to not only develop critical thinking, clinical reasoning, and clinical decision-making abilities, but also to learn to teach these skills.

2. DEVELOPMENT OF THE CLINICAL THINKING TOOLS

Originally, the Clinical Thinking Tools described in this article were developed by a small team of post-licensure specialty nurse educators to support clinical instructors and preceptors in adopting a new objective, evidence-based clinical evaluation process that shifts the responsibility for demonstrating attainment of clinical learning outcomes and competencies from the instructor to the student.^[18] Additional support was required as the new evaluation process was a significant change for the clinical instructors and preceptors to manage, and the pedagogy underlying the approach was a radical departure from what they knew and were comfortable with. These CTTs were designed with the intent to support clinical instructors and preceptors to objectively assess post-licensure specialty nursing learners' critical thinking, clinical reasoning and clinical decision-making in alignment with the new evaluation process and template. However, it became clear that the tools themselves were a valuable pedagogical approach for the students' learning of critical thinking, clinical reasoning, and clinical decision-making skills. Additionally, it also became clear that the CTTs were equally useful for the novice clinical instructors and preceptors in

learning to teach and support the development of these skills.

2.1 Clinical thinking tools: Theoretical foundations

Both critical thinking and clinical reasoning are vital to sound clinical judgments, or the "interpretation or conclusion about a patient's needs, concerns, or health problems".^[19] However, teaching or promoting learners' critical thinking and clinical reasoning skills has proven complex in nursing education. Gonzalez et al.^[4] point out that faculty can fail to "untangle and teach the intricate thinking skills" (p.486) that nurses require to translate learning into safe practice. Other nurse scholars posit that current approaches to teaching critical thinking and clinical reasoning may be insufficient because they do not apply a structured framework to guide teaching,^[20] or because they do not teach clinical reasoning skills directly while offering multiple learning opportunities to practice these skills over time.^[4,20,21] Yet many educators are uncertain about how to integrate these crucial skills into clinical education.^[22] Further, in the current healthcare context, there may not exist the time or opportunity to provide novice clinical instructors or inexperienced preceptors with the necessary pedagogical education or support.

Frameworks can provide a logical, structured approach to organize, plan, and implement curriculum, facilitate mental organization and recall of knowledge.^[4,23] As such, a clinical decision-making framework can simplify teaching clinical reasoning skills,^[24] develop students' reflective practice,^[7,25] and structure discussions and questions centred on critical thinking and clinical reasoning that stimulate deeper thinking.^[6,23,26] The Clinical Thinking Tools are theoretically underpinned by the Situated Clinical Decision Making Framework (SCDMF).^[7] Premised on the central thesis that learning is social and situated within a greater context from situated learning theory,^[27] the SCDMF also aligns with Tanner's Clinical Judgment Model^[19] and Caputi's^[28] approach to clinical evaluation. However, the SCDMF extends both of these models by the inclusion of the multi-layered context of clinical practice, which is the educational milieu in which novice clinical instructors and preceptors are embedded and strongly influences their clinical decision-making. The SCDMF incorporates foundational knowledge, decision-making processes, thinking processes, and the micro, meso, and macro levels of context (see Figure 1). Of note, the SCDMF's inclusion of thinking processes highlights the contribution of critical, systematic, creative, and anticipatory thinking to clinical judgment and clinical decision-making, and differentiates these processes from foundational knowledge.

2.2 Clinical thinking tools: Practical application

The core team developed five Clinical Thinking Tools; each links to and emphasizes one or more components of the SCDMF (see Figures 2-6). Each CTT leads the learner or instructor through a sequence of guiding prompts that intentionally engage them in the process of analysis using both inductive and deductive reasoning. These processes are key to gathering, interpreting and synthesizing all necessary information in arriving at clinical decisions, as well as to determining priorities of care.^[5,29] Each can be used in a variety of ways by either clinical instructor/preceptor or student, or by both. Clinical instructors and preceptors can utilize any of the Clinical Thinking Tools to guide clinical discussions with learners during the clinical shift or to frame a post-conference discussion. Each of the tools can be completed by a learner as a “mini assignment” before, during and/or after the clinical shift, providing the learner time to cognitively prepare, systematically organize and integrate information, and reflect on their thinking. Clinical instructors and preceptors can use the CTTs multiple times over the course of the clinical practicum to inform both their formative assessments and summative evaluations, while the learners can use the same tools to provide evidence of their clinical growth. This can be particularly useful in supporting learners who experience challenges in the development of clinical competencies. In this type of situation, the clinical instructor or preceptor may use the CTTs both to help identify the nature of the learning gap, as well as a supportive

strategy for both themselves and the learner to assess and demonstrate progress. Finally, in place of a reflective journal, the CTTs can also be used to promote reflective practice by providing a guided thinking process, prompting learners to identify their own areas for development and future learning goals.



Figure 1. The situated clinical decision making framework^[7]
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Clinical Thinking Tool: Foundational Knowledge – Knowing the Patient and Person

Knowing the patient reflects your knowledge of the specific patient you are caring for: their age, their reason for admission, and the presence or absence of risk factors.

Knowing the person emphasizes the importance of understanding the individual patient’s experiences, wishes and supports as they relate to the person’s health status.

<p>How did you come to know your patient? For example, what sources of information did you use?</p>	
<p>In what ways did this knowledge inform your care?</p>	
<p>How did you come to know your patient as a person?</p>	
<p>In what ways did this knowledge inform your care?</p>	
<p>Is there more information you need to inform your care and decision-making? How can you find this information?</p>	

What else do you need to know?

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Figure 2. SCDMF Thinking Tool: Foundational Knowledge – Patient and Person
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Clinical Thinking Tool: Judgments - Prioritizing Patients

AFTER REPORT: Prioritize your patients and explain why.

	Who?	Why? What risks make the patient a priority?	Context: What has influenced my decision?
First Priority			
Second Priority			
Third Priority			

AFTER ASSESSMENT: Did your priority patient change?

Explain why - include contextual issues and/or influencing factors.

What else do you need to know?

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Figure 3. SCDMF Thinking Tool: Judgments – Prioritizing Patients
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Clinical Thinking Tool: Critical Thinking - Problems and Priorities

What are the top 3 problems/priorities for your patient?
Explain your rationale – include contextual issues and/or influencing factors

After report	
After your assessment	
If any of your priorities changed, explain why	
After rounds or assessment by primary care provider	
If any of your priorities changed, explain why	

Further investigations:

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Figure 4. SCDMF Thinking Tool: Critical Thinking – Problems and Priorities
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Clinical Thinking Tool: Systematic Thinking

Cue recognition Observations, statements from the patient/family, lab and assessment data, atypical responses or behaviour, and your intuition.	
Judgment What you think is happening, what data supports that, what else could be happening?	
Priority What is your priority?	
Decision What is your course of action?	
Evaluation Did your decision achieve the outcome you wanted?	
Reassess and resume decision making process Is another decision required? Do you need more information or to involve someone else?	

What else do you need to know?

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Figure 5. SCDMF Thinking Tool: Systematic Thinking
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Clinical Thinking Tool: Reflective Thinking - About Interventions

Reflect on an intervention.

Decision What was the intervention?	
Cue recognition/ assessment data What data supported the intervention?	
Evaluation Was the intervention effective?	
Based on your reflection, would you do anything differently?	

What else do you need to know?

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Figure 6. Reflective Thinking - About Interventions
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2.3 Outcomes and insights

Initially developed to support the use of a new clinical evaluation tool and process in the context of post-licensure specialty nursing education, the strength of the Clinical Thinking Tools as a strategy for teaching and learning critical thinking, clinical reasoning, and clinical decision-making lies in their structured approach to prompt guided discussions and questions that stimulate deeper thinking and promote reflection in how the learner arrived at a clinical decision.^[7,28] By utilizing these tools in clinical practice education, students approach clinical decision-making and priority-setting in a systematic and reflective way, providing them insight into their own thinking processes and clarifying their own learning needs and areas for development.

However, the benefits that the Clinical Thinking Tools provide in clinical practice education are not limited to the learner. Because the CTTs assist the learner to articulate their thinking and rationale, they allow clinical instructors and preceptors insightful and objective data on the learners' critical thinking and clinical reasoning processes. This insight is important for the novice educator to provide perceptive and accurate feedback in their assessment and evaluation of learners' clinical decision-making that is not based on observation alone. However, we have found that perhaps the most beneficial impact the use of the Clinical Thinking Tools provides to novice clinical instructors and preceptors is the insight into the origin of any issues within the learner's clinical decision-making. Assessing and ascertaining students' challenges in clinical practice is frequently difficult for novice educators and preceptors.^[12,13,15] Using the CTTs allows the novice educator a more concrete way to discern challenges in clinical decision-making, for example, to differentiate issues with anticipatory thinking and priority-setting from foundational knowledge deficits. With such a "teaching diagnosis", or clear determination of the origin of issues within a learner's clinical reasoning and decision-making, a novice clinical instructor or preceptor is provided with clearer direction to tailor individualized supportive teaching and learning strategies. Thus, the CTTs may be used to help novice clinical instructors and preceptors develop their pedagogical practice as they learn to teach.

3. CONCLUSION AND IMPLICATIONS

The global shortage of nurses and by extension the shortage of nursing educators has led to a situation where many clinical instructors and preceptors are new to teaching and may even be relatively new to nursing.^[16,17] By utilizing the Clinical Thinking Tools as a teaching strategy in clinical practice education, both students and novice clinical instructors and preceptors may be better supported to teach, assess,

and develop critical thinking, clinical reasoning, and clinical decision-making in an increasingly complex healthcare environment.

Although the Clinical Thinking Tools are theoretically grounded and have been successfully applied in the context of post-licensure specialty nursing education, they require empirical validation. To this end, a study within the post-licensure specialty nursing education context is planned. We recognize that these tools are a work in progress and offer these as operational, critical thinking tools with the intent that others may adopt and/or improve them for use in other nursing education contexts. Patients and healthcare environments have become more complex, and nurse educators have a professional responsibility to assist both novice nurses and novice clinical instructors to navigate the development of the complex thinking required to provide high-quality, safe, ethical care with the use of innovative pedagogical tools and approaches.

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AUTHORS CONTRIBUTIONS

Dr. M. House-Kokan drafted the manuscript and Ms F. Jetha revised it. Both authors read and approved the final manuscript.

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