Measuring Thinking Worldwide

This document is a best practices essay from the international, multidisciplinary collection of teaching and training techniques, "Critical thinking and Clinical Reasoning in the Health Sciences." Each essay in this set provides an example of training reasoning skills and thinking mindset described by international experts in training clinical reasoning.

Teachable Moments in Clinical Practice: Promoting Clinical Judgment Skills

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Margot Thomas is an advanced practice nurse (APN) in the Pediatric Intensive Care Unit at Children's Hospital of Eastern Ontario, in Ottawa, Canada. As a critical care APN, she is directly involved in continuing professional development and competency acquisition of staff nurses caring for infants, children, and youth experiencing life threatening illnesses. She seeks to improve clinical judgment by focusing on the recognition of cues used by clinicians to make diagnostic inferences. Although this process requires the iterative use of the full range of critical thinking skills, Ms. Thomas centers this lesson on the practice of two of these skills: interpretation and explanation.

Others have tried to build the critical thinking skill of interpretation by asking students to continue to ponder a seemingly transparent situation until they uncover more subtle details that were previously unnoticed but prove to be highly significant. Here Ms. Thomas applies the idea of 'seizing a teachable moment,' a moment when the clinician is making a difficult decision. In the midst of the teachable moment, when asked "Why do you think that?" or "Why did you decide to do that?" the critical thinking task turns to talking aloud about the clinical reasoning process and explaining the clinical judgment. The idea is to capture a near to real time decision process. The result is likely to increase the habit of more closely monitoring the quality of one's own thinking (metacognition). This chapter is an interesting blend of phenomenology and cognitive theory. We think you will find this discussion helpful for identifying teachable moments in your own work and practice settings, and ways to incorporate this idea into your teaching of clinical reasoning.

Background

My focus as an APN is to assist staff nurses to acquire and maintain the competence and confidence necessary to provide safe patient care and to effectively participate as a full partner in the multidisciplinary health care team caring for patients and their families. This example focuses on the 'teachable moments' (Benner, Hooper-Kyriakidis &

Stanndard, 1999; Rashotte & Thomas, 2002) that occur in the clinical setting where I have the opportunity to facilitate experiential learning, reflective practice (Schon, 1987), and transformative learning (Cranton, 1996; Cranton & Carusetta, 2004) in other members of my health care team. Teachable moments are occasions that spontaneously arise out of a 'ready-to-hand' clinical situation in which a practice question, concern, doubt, or uncertainty suddenly surfaces.

Usually teachable moments occur as short conversations at the bedside. They rarely last more than 15 minutes. Often the focus of the moment is to identify how best to proceed, or how to make the right or best decision in "this case." The term 'naturalistic decision' has been used to describe this type of real life decision, where there are high stakes consequences and where there is significant uncertainty (Zambok, & Klein, 1997). Nearly all clinical problems that present novel circumstances are of this type.

My task as a clinical teacher is to seize or even create a teachable moment where I can assist other clinicians or student clinicians to examine and refine or disconfirm and revise the assumptions or expectations they hold about what will occur in response to their actions. Although there is much value to staff development opportunities that are structured seminars, teachable moments most often occur when the teacher (e.g., advanced practice nurse, nurse educator, preceptor, senior resident, clinical instructor) connects with the clinician or health care team member at the bedside in response to their recognition of a patient problem and their own learning needs.

There are two kinds of situations where I try to seize the teachable moment. The first is when the patient assignment challenges the clinician's or student clinician's clinical expertise. One example is the situation that occurs when a nurse cares for an infant requiring high frequency oscillation for severe respiratory failure for the first time. The second is a bedside request for assistance with some 'needed' clinical intervention. In this chapter the example is a staff nurse's request for assistance from the advanced practice nurse. Help is needed to do endotracheal tube suctioning, and this brings an opportunity for a teachable moment when the staff nurse is likely to be open to learning about their reasoning process.

In essence, teachable moments are opportunities to critically and reflectively think out loud, thus making critical thinking both conscious and visible. Svenson (1989) described the value of thinking aloud as a way of externalizing one's thinking process so that it can be observed and evaluated by oneself and by others. When this is done well, the thinker has the potential to move theoretical and/or experiential knowing into a conscious, reflected upon, and articulated knowing-in-action.

My goals for this learning opportunity

In the following example, my goal during the teachable moment is to focus on helping the novice staff nurse (learner) make linkages between her or his theoretical knowledge about mechanically ventilated infants (specifically the endotracheal tube suctioning procedure) and the specific decisions and actions needed to be carried out for this patient in this situation. The purpose of the interaction between learner and teacher is to draw forth the complexity of the real clinical situation, including the context and the unique attributes of this particular patient in real time - all of which cannot be learned in a didactic session. I also seek to keep the learner connected to multiple ways of knowing about the best course of action in this case. My interaction with the nurse during the teachable moment is intended to support the nurse in the development of a sense of knowing *this* particular patient, *this* type of patient, and *this* practice environment through this co-created, reflecting-in-action activity. Analysis of the unique aspects of this case makes it a worthy exemplar, and an explanation of why planned interventions are appropriate.

I have summarized my theoretical basis for how to guide a teachable moment with a particular focus on the skilled performance of endotracheal tube suctioning using a model of clinical judgment first proposed by Thomas & Fothergill-Bourbonnais (2005). Guiding the discussion about endotracheal suctioning using this model facilitates

meeting a number of learning objectives (listed below). After each of the following learning objectives, I've also included mention of the critical thinking skill that is being practiced by the thinking process involved as they are briefly referred to in the APA Delphi Report.

Learning objectives

Through guided conversation, the learner who participates in a teachable moment related to endotracheal tube suctioning will be able to:

- Articulate the patient cues (visual, auditory, tactile) to which they are attending in this patient/this type of patient/ this practice environment) they recognized as indicating a need for endotracheal tube suctioning; (interpretation)
- Discuss why they considered the cues recognized as important and relevant to the judgment, considering the general and the particular (weighing the evidence); (analysis and explanation)
- Consider alternative cues that might be relevant (although perhaps not present) to making the judgment to suction (analysis and inference);
- Describe the ways in which they corroborated the significance of those impressions with others or with practical knowledge (explanation); and
- Evaluate the quality of the judgment to suction in response to the cues recognized in the patient and in the clinical context (analysis and self-regulation, also known as metacognitive self- critique).

I also evaluate the quality of the nurses' technique in suctioning the child, and if this is not a high standard of care, I move to teaching the suctioning skills themselves.

My work before the teachable moment

In order to be able to connect with clinicians, and most particularly staff nurses, to assist them in developing the practical knowledge essential in a clinical context, I must understand the patients and their health care needs in the unit. It is the patients' needs associated with the clinician's learning gap that determines the focus and timing of a teachable moment. I often find the opportunity for these learning sessions by attending the daily health care team rounds in the Pediatric Intensive Care Unit, listening attentively to what clinicians say in order to assess their knowledge and understanding of the patients' clinical situations.

As a clinical expert, I come to this situation to assess the depth and breadth of the clinician's knowledge and understanding of this situation in order to identify any areas into which I can bring evidence to support or add to the reasoning that supports the clinician's practices. In addition, the teachable moment is an opportunity to engage the clinician in a discussion that identifies different ways of thinking about what is happening in this particular patient context and how it relates to this type of patient in general.

Teaching the Teachable Moment

When I note that a clinician has been given an assignment that appears to challenge their expertise level, or potentially present them with novel patient care situations, I recognize the potential opportunity for a teachable moment. For instance, if I observe that a nurse has been given an assignment to care for an infant with severe respiratory failure for the first time, I make of point of coming back to talk with that nurse to both act as a resource and also to engage the nurse in a teachable moment about procedures that the nurse may need to perform for this child. For example, I might

initially ask the nurse who is new to performing endotracheal tube suctioning, "Tell me about your patient today. How does the patient respond to being suctioned?" Or I might ask, "So what made you decide that the baby needed to be suctioned?" I've noticed that rather than listing the cues that they observed in the infant that they are suctioning, they will more often quickly recite the cues that are identified in the practice guidelines for suctioning. In this case they may say, "coughing, visible secretions, desaturations."

However, when I ask them to think aloud and tell me the story about what other cues they recognized in *this* patient, they may reveal other cues previously hidden from their immediate awareness. This storytelling becomes an opening to explore with the nurse other auditory, visual, and tactile cues that had also indicated this infant's need for suctioning. They might talk about the baby's restless behavior, grimacing, the pattern of the baby's breathing, tugging movements of the baby's shoulders, or the sensation of secretions felt when the nurse laid her/his hand on the baby's chest. The conversation becomes a chance for the nurse to reflect on this longer list of cues that they have now identified, and to more carefully analyze the meaning of these cues in context. Together the cues represent a pattern that the nurse comes to know as one where suctioning might be needed.

Weighing the evidence should be an important step in determining the timing and method of endotracheal tube suctioning. "When to suction?" may be a novel problem for new nurses. When I see that the nurse does have a knowledge gap and could benefit by analyzing their clinical judgment to suction the patient, I extend the conversation to discuss the specifics of the patient and clinical situation as a way of bringing forth how *knowing this patient* (how this baby responds to endotracheal tube suctioning) and *knowing this type of patient* (how babies in severe respiratory failure can develop complications from endotracheal tube suctioning) is relevant to the judgment of whether and/or when to suction. For example, I might ask the nurse to consider the significance of the cues recognized in this baby in relation to other pathophysiological conditions that may be relevant to the baby. This might be done by asking the nurse to identify situations when the judgment to suction might need to be reconsidered, or when collaboration with respiratory therapists might be indicated, such as when pulmonary hypertensive crises or severe bradycardic events can result.

I might also ask them to consider what other contextual factors influenced their decision-making to suction. This begins a thinking process where the nurse should be able to identify the evidence that supports their practice decision. And I am looking for particular responses that I can see to be relevant, such as the availability of backup support or the presence of family members. When they do provide appropriate comments, the ones I already had in mind or others I can see are relevant, I model the responsibility to be evidence based by offering additional explanation for why these are appropriate and important influences. If they fail to provide an adequate response, I suggest some relevant considerations and then listen as they integrate this information into their own thinking process.

When appropriate, I will stay at the bedside while the nurse performs endotracheal tube suctioning, purposefully observing for specific behaviors that the nurse implements as means of protecting the patient from the potential complications of endotracheal tube suctioning. Once the suctioning is completed, I ask the question, "When you were suctioning your patient, what was going through your mind?" as a way of helping the nurse reflect on her/his actions. Usually, the staff new to suctioning ventilated critically infants will respond with answers indicating a focus on information obtained from monitor equipment (e.g., heart rate, blood pressure, and oxygen saturations) and the effectiveness of suctioning (e.g., amount and color of the secretions obtained). This then becomes another opportunity to invite the nurse to consider other cues gathered and considered by expert pediatric critical care nurses (e.g., the sounds of secretions during the manual ventilation process, or resistance felt when the suction catheter is passed through the endotracheal tube), as well as other aspects of safe suctioning practice. This same approach to the teachable moment can be adapted to any other area of expertise in regard to excellent practice. In this pediatric unit other areas would include ways to reduce patient's distress, monitoring the number of suction passes, or protecting of the stability of the endotracheal tube.

Comments on teachable moments

Teachable moments are not just for nurses new to the critical care setting. They are also valuable learning opportunities for nurses who have well developed knowledge based on experience with multiple prior cases, yet may need opportunities to refine, challenge, or disconfirm their current beliefs before integrating "new evidence" into their practice. As a point of illustration, it is at the bedside that I have been able to invite experienced nurses to reconsider the practices of routine suctioning based on a timed schedule and the routine instillation of normal saline prior to endotracheal tube suctioning. It is often in the course of caring for patients myself that the experienced nurse will question my practice, thus creating a teachable moment, an opportunity to co-create understanding and reflecting-in-action. I talk aloud about my own clinical reasoning process and model the use of research findings in clinical practice. This strategy has been identified as a strategy to promote evidence-based practice.

In addition, I use teachable moments to help experienced clinicians advance beyond competent practice to proficient or expert practice. Questions such as, "What do you expect from your patient over this shift, tomorrow, and next week?" engages the clinician in projecting patient trajectories and forming conjectures or hypotheses. Asking "What surprised you about this patient, or this situation?" encourages the clinician to consider not only the unique attributes of this patient in relation to what he/she knows about this type of patient, but also other alternative meanings to the event, and possibly even new conclusions. "What did you do differently in this situation?" also encourages the clinician to discover possible cause-effect relationships in her/his actions, while such simple questions as, "What did you see and what did you do in response?" helps to uncover the unnoticed and subtle perceptions that expert clinicians so frequently act upon that contribute to clinical expertise at the bedside.

Evaluation of the teachable moment

The teachable moment provides the opportunity for both the teacher and learner to come to an awareness - albeit it potentially different for both individuals - of the breadth and depth of the cues identified as relevant by the clinician and how they were critically appraised in this specific patient situation as to timing and performance of the endotracheal tube suctioning procedure. In just a few minutes, both teacher and learner are able to shed further light on practice expectations for this particular setting and to identify if they were met. Asking the question, "Would you do anything different the next time?" offers the learner the opportunity to reflect on his/her practice and to self identify further learning needs. The door is also open for the teacher to propose further learning strategies, including more teachable moments, as a means to support the clinician in acquiring the knowledge, skill, attitudes, and judgments expected in the specific practice environment.

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