CHAPTER 1

Why Critical Thinking?

Healthcare delivery, and nursing in particular, is in dire need of critical thinkers. If you don't believe us, look at **Box 1-1** for the words of other authors. The ever-changing healthcare system is becoming increasingly complex and fraught with decision points where mistakes can occur. Clinicians make a jillion decisions every day. Most of those decisions are made in microseconds but can have very serious consequences. Some decisions allow for more thinking time, consultation with others, and a search of other resources

Box 1-1 *Why* Critical Thinking Is Essential in Nursing

"To provide quality care in this environment, nurses need to develop critical thinking (CT) skills that will provide them with expertise in flexible, individualized, situation-specific problem-solving" (Brunt, 2005, p. 60).

"Other reasons why nurses must be competent critical thinkers include the dramatic changes happening in health care related to information technology, fiscal cutbacks, human resource limitations, and the acuity of many patient care situations" (Carter & Rukholm, 2008, p. 134).

"Critical thinking is an integral part of clinical decision making and therefore a routine part of nurses' work" (Daly, 2001, p. 121).

"To deal effectively with rapid change nurses need to become skilled in higher-level thinking and reasoning . . . There is not always theoretical evidence to support practice, therefore, nursing needs to incorporate into its practice critical thinking processes to provide new answers to practical questions . . . Every day nurses sift through an abundance of data and information to assimilate and adapt knowledge for problem clarification in an attempt to find solutions" (Edwards, 2007, p. 303).

"As health care systems become more complex . . . it is important for nurses to develop critical-thinking, problem-solving, and reflective practice techniques" (Rogal & Young, 2008, p. 28).

"Increasingly complex needs and expanding roles in the delivery of health care require professional nurses to be capable critical thinkers and self-directed learners" (Worrell & Profetto-McGrath, 2007, p. 420).

"Given the undoubted global health issues, the need for critical thought and action is paramount" (Morrall & Goodman, 2012, conclusion).

"As the discipline evolves alongside societal needs, the complexity of health care, increased use of technology, and increased patient acuity requires nurses with well-developed critical thinking" (Raymond-Seniuk & Profetto-McGrath, 2011, p. 49).

before a conclusion is reached. But all decisions must be accurate and made in a timely manner.

There are many resources—books, articles, speeches—out there telling us what needs to be done to improve the quality of health care. Many of them allude to the need for critical thinking (CT), but few provide concrete suggestions for how to improve thinking. That's because it's not simple to improve thinking; it's not even

simple to study it. Even a definition of nursing CT is hard to find. As complex as the healthcare system is, so too is CT.

The place of nurses in the healthcare system is also complex and getting increasingly so. Nurses are expanding their roles, taking on more responsibility, and learning to adapt to constant change. The kind of thinking that nurses do is convoluted and usually occurs in what Schon (1983) called the "swampy lowlands" (p. 43). The thinking of nurses is much more complex than most people realize.

It is within this complex context that we explore CT in nursing. We want to impress upon our readers why CT is so vital. We start this text with why, even before we tell you what CT is, because we want you to let your curiosity and questioning attitude lead the way into this exciting adventure.

Why Questions and Thinking

Why questions imply a search for reason, purpose, meaning, and value. The word *why* is frequently used to initiate inquiry, provide logic, justify conclusions, and find causes. *Why* demonstrates one of the first forms of thinking and exploration we used as children (Why is the sky blue?). Those of you with young children who constantly ask why might want the word banned from the dictionary on some of your tired days. But *why*, and the thinking connected with *why*, has triggered many important discoveries over the years. The discovery of penicillin, Einstein's theory of relativity, the exploration of space, and even the discovery of Viagra all followed *why*. (In fact, according to a personal communication with a pharmaceutical industry research scientist, it was a nurse who asked the question that led to the discovery of Viagra as a treatment for erectile dysfunction. During clinical trials of a pharmacological treatment of cardiovascular problems, she noticed that the volunteers were reluctant to return unused trial medications. She asked *why*, and the rest is history!)

For many, the natural tendency to ask *why* has diminished after years of traditional schooling. That is sad and also a bit frightening because *why* questions are powerful instigators of thinking. Even Einstein emphasized the value of *why* questions when he said, "The important thing is to never stop questioning. Curiosity has its own reason for existing" (Brainy Quote, 2013).

Why is also the favorite word of many educators who encourage students to provide rationales for their nursing interventions. *Why* is used by clinicians when they work as preceptors and mentors for new staff or when they question their own practice. Questioning why something is happening with a patient can be a life-saving inquiry. Clinicians and educators alike believe that *why* questions encourage CT (Scheffer, 2001). We will tease your brain to consider why in this first stop at action learning, **TACTICS 1-1**. As discussed in the preface, TACTICS for clinicians and educators will be used throughout this text to engage you in activities that will stimulate your CT and move thinking from abstract concepts to practical contexts.

TACTICS 1-1: Exploring Your Use of *Why*

Clinicians and Educators

With a colleague or on your own, think about the last time you asked *why*. How many times a day do you ask it? Enough times to learn what you want to know? Too many times? And what does it lead to? Are you simply asking out of habit, or do you then pursue the answers that prompt you to ask more questions and delve even deeper? How do colleagues react to your *why* questions? What motivates you to ask *why*?

Discussion

The answers to these questions should stimulate reflection. Are you satisfied with your answers? *Why* questions that stimulate reflection can prompt searches for purpose, meaning, and value. The great philosophers asked all these classic questions: *Why* are we here? *Why* do we exist? *Why* do we care? On a less esoteric level, reflecting on *why* helps us understand and appreciate the value of thinking. So *why* does CT benefit health care? To answer, we will look at *why* there has been so much interest in thinking in recent years. We will also respond to *why* thinking is so important.

Asking *why* questions will inevitably lead one to ask more questions, such as *who*, *what*, *when*, and *where*. It is this questioning stance that is essential to studying CT. We'd like our readers to begin their CT journey with questions for two reasons. First, we know this approach works because that's how we began our travels through the CT maze. Many years ago we knew why CT was important in nursing, and we asked how we could help nursing students become better thinkers; our exciting exploration of reading, researching, talking, and writing about CT took off. We want to share our discoveries so you can build on what we have learned. Second, we'd like you to think about your questions, and the questions that they lead to, because they are the essence of great thinking.

The great educational philosopher Paulo Freire (1998) wrote:

> To stimulate questions and critical reflection about the questions, asking what is meant by this or that question, is fundamental to curiosity. Otherwise, all we have is the passivity of students in the face of the discursive explanations of the teacher and answers to questions that have not been asked. (p. 80)

Although we cannot hear your questions, we'd like you to imagine a dialogue with us. Think about your questions and jot down your reflections on them in the margins as you read along. Even though we have been immersed in the teaching of CT in nursing for 2 decades, we are frequently faced with new questions. What is your most burning question about CT in nursing? Write it here, and after you complete your study, look back and see if that question was answered. My burning question is:

Why the Interest in CT in Health Care and Healthcare Education over the Past Two Decades?

Thinking has been a topic of discussion for philosophers for centuries, but other disciplines have also been concerned about thinking. Schon (1983) explored thinking in medicine, engineering, law, business, and education. Dreyfus and Dreyfus (1986) described the importance of thinking in the aviation industry.

Hundreds of thousands of articles and thousands of books have been written about CT in all disciplines. There are courses, whole curricula, and even institutes designed to improve thinking. We taught a required undergraduate nursing course called Critical Thinking in Nursing for several years. The National League for Nursing (NLN) highlighted the importance of promoting thinking in nursing curricula (NLN, 2006). An Australian website provides up-to-date information on colleges, universities, forums, and ongoing research on CT (Austhink, 2013). In health care, accrediting bodies, policy makers, and others promote CT. The Institute of Medicine (IOM, 2004) addressed CT across disciplines for improving national health care. Obviously, many people and organizations think CT is very important; some of their statements about the benefits of thinking are shown in **Box 1-2**.

Box 1-2 The Benefits of CT

"Professional knowledge is mismatched to the changing characteristics of the situation of practice—the complexity, uncertainty, instability, uniqueness, and value conflicts, which are increasingly perceived as central to the world of professional practice" (Schon, 1983, p. 14).

Problems encountered in practice "are not in the book" (Schon, 1983, p. 16).

"Knowledge is discovered by thinking, analyzed by thinking, organized by thinking, transformed by thinking, assessed by thinking, and most importantly acquired by thinking" (Paul, 1992, p. xi).

Thinking helps us recognize beliefs and assumptions that our minds consider to be facts (Brookfield, 1995).

Knowledge, facts, and information are frequently equated with intelligence. But the ability to use knowledge in logical, ethical, and moral ways is not always equal to the quality of the knowledge, facts, and information. Thinking provides the screening mechanism for converting knowledge, facts, and information into practical application in the real world (Schon, 1983).

There is "no way to create a neat and tidy step-by-step path to knowledge that all minds can mindlessly follow" (Paul, 1992, p. xi).

Pure logic and analytical reasoning is inadequate for expert decision making. Expert decision making is a blend of careful analysis, intuition, and the wisdom

(*continues*)

Box 1-2 The Benefits of CT (continued)

and judgment gleaned from experience. Human thinking and decision making continues to exceed that of machines (artificial intelligence) because of three key factors: awareness of the environment, the ability to discriminate, and tolerance for ambiguity (Dreyfus & Dreyfus, 1986).

"Only by changing how we think can we change deeply embedded policies and practices" (Senge, 1990, p. xiv).

"The deepest insight usually comes when they [people] realize that their problems, and their hopes for improvement, are inextricably tied to how they think" (Senge, 1990, p. 53).

Self-regulation, critical thinking, and creative thinking are probably the most important dimensions influencing learning (Marzano & Pickering, 1997).

True understanding comes from the ability to think and act flexibly, distinguish nuance, appreciate context, and use reflection (Wiggins & McTighe, 2001).

Our conceptualization of CT comes from years of practice and research in this area—most notably our Delphi study, which sought to find a consensus description for CT in nursing. Through that research, an expert panel of 55 nurses from 9 countries and 23 U.S. states described 17 dimensions of CT in nursing: 10 habits of the mind (affective dimensions) and 7 cognitive skills (Scheffer & Rubenfeld, 2000). The habits of the mind are *confidence, contextual perspective, creativity, flexibility, inquisitiveness, intellectual integrity, intuition, open-mindedness, perseverance*, and *reflection*. The cognitive skills are *analyzing, applying standards, discriminating, information seeking, logical reasoning, predicting*, and *transforming knowledge*. These 17 dimensions show CT broken down into manageable units. Because CT is complex, studying its pieces makes it more understandable, allowing you to see the thinking within various contexts. (Throughout the remainder of this text, every time we use one of the 17 dimensions, you will see them in italics to reinforce the language of thinking that you can begin to incorporate into your practice. **Box 1-3** gives you a quick list of these 17 dimensions.)

So why has there been so much emphasis on CT in health care over the past few decades? One has to only pick up a newspaper or magazine or listen to the news to learn the answer. Some of the key matters that require more or better thinking are the information and technology explosions; dwindling resources; cost containment; third-party payer gatekeeping; demographics; morbidity and mortality data; global economics and potential epidemics, patient safety, and failure to rescue; and emergent ethical dilemmas such as the right to life, prolongation of life without quality, and stem cell research.

Box 1-3 Quick List of the 17 Dimensions of Critical Thinking in Nursing

CT Habits of the Mind	*CT Skills*
Confidence	Analyzing
Contextual perspective	Applying standards
Creativity	Discriminating
Flexibility	Information seeking
Inquisitiveness	Logical reasoning
Intellectual integrity	Predicting
Intuition	Transforming knowledge
Open-mindedness	
Perseverance	
Reflection	

All healthcare disciplines are recognizing the need to pool their thinking to come up with better ways to deal with such complex issues. A notable example of such pooled thinking is the IOM project (2003). The project's charge was to tap into the thinking energy of an interdisciplinary group—nurses, physicians, pharmacists, physical therapists, social workers, and others—to identify new directions for health care. Past solutions clearly do not address the growing complexity of our current problems. If it's not working today, it surely will fail tomorrow. To quote from Einstein again, "We cannot solve our problems with the same thinking we used when we created them" (Brainy Quote, 2013).

One outcome of the IOM (2003) work was the development of five competencies—patient-centered care, interdisciplinary teams (IDTs), evidence-based practice, informatics, and quality improvement. These competencies were developed to help guide the thinking of all healthcare disciplines toward a unified plan of practice, education, and research to promote safe, effective, and efficient patient care. Let's look at some of the basic benefits of thinking in health care and who benefits from it. In **TACTICS 1-2** we'll start with a simple nursing situation and help Joyce, a novice clinician, who had trouble with a colostomy dressing.

TACTICS 1-2: Exploring Joyce's Thinking

Now wait a minute! I've done colostomy dressing changes a dozen times; I followed all the steps of the protocol exactly as I always do. Afterward I even checked out the textbook

the nursing student left on the unit, and it says to do exactly what I did. So I'm asking myself, why didn't it work?

Now refer to Box 1-1 and Box 1-2 and see if you can find any thinking clues that would help Joyce with her dilemma.

Discussion

The second statement in Box 1-2, "Problems encountered in practice are not in the book" (Schon, 1983), is a good match for what happened to Joyce. Do other statements also fit? "Not in the book" is the key here. One problem with a practice discipline such as nursing is that the real world seldom, if ever, looks like the book world. The book learning gets you started, but only started; it's never the whole solution. Nurses must rely on something else to deal with the many problems encountered in practice. Everything about nursing is contextual. Thinking is the only constant that will go from context to context.

The Context of Thinking

Studying CT by itself, outside context, is like studying how to take care of a colostomy without ever seeing a patient with a colostomy. There's only the abstraction of the idea, not the actual day-to-day reality of the concept. We can tell you why CT is important, but you won't fully appreciate that importance until you see CT in action. Studying CT by itself is a wonderful philosophical activity, but as nurses we must look at CT in action. CT is a tool to be used in the muddy world of health care.

Other authors have identified how important it is to address context. For example, Tesoro (2012) presented a Developing Nurses' Thinking (DNT) model showing CT within a context of nursing and nursing education. Four constructs were combined: "(a) patient safety, (b) domain knowledge, (c) critical thinking processes, and (d) repeated practice" (p. 436). Lunney's work (2008, 2010) put CT into the context of diagnostic accuracy. Without the necessary CT, diagnoses may be inaccurate and therefore affect the quality of health care as the nurse heads down the wrong path in patient care.

Because CT must be implemented within the context of specific problems or issues, this text addresses the CT needed to achieve five healthcare competencies outlined by the IOM in its Quality Chasm series. These competencies—patient-centered care, work in IDTs, evidence-based practice, using informatics, and quality improvement—will, in the IOM's vision, improve healthcare delivery in the United States (IOM, 2003). These and very similar competencies have been the foci of healthcare improvement plans in many other countries as well, and the international literature supporting movement in this direction is growing daily. Indeed, we have much to learn from clinicians, researchers, and educators in countries such as Canada, the United Kingdom, Australia, and the Netherlands, especially in the area of evidence-based practice. Informatics has made the world accessible as

it never has been before. Not only do we need to work in IDTs in our own institutions, but teamwork now crosses borders as all nations strive to improve the health of their citizens.

The Big Picture of *Why* Thinking Is Important

We've learned that the purpose of asking *why* is to find meaning and value or benefit. To focus on benefits, we need to explore who benefits and what is the benefit—*why* is thinking important to them? We will use the term *stakeholders* to describe the individuals and groups who have a stake (something to gain or lose) in some endeavor. Stakeholders may gain or lose power, control, money, and—yes—health. They are also thinkers who gain or lose from thinking or not thinking. And their thinking has an effect on the whole as well. Do you see how complex this is?

To use a two-dimensional analogy, consider all the stakeholders in health care as being in a sequence of concentric circles. The innermost circle in the healthcare system contains the primary stakeholders. We classify them as primary because they benefit directly from the thinking of healthcare providers and, it is hoped, they contribute their thinking as well. This primary group includes patients and their significant others.

The concentric circle of thinkers closest to the primary stakeholders includes clinicians, educators, and other providers in the IDT. The thinking of these people directly affects patient outcomes. If done properly, the thinking of the individuals in this circle merges smoothly with the thinking of the primary stakeholders of the innermost circle. The results of that merged thinking are quality patient outcomes.

Moving outward, the next circle in this image would include unit managers, administrators, third-party payers, healthcare organizations, government groups, and healthcare professions. These stakeholders experience less direct effects of thinking in the swampy lowlands of care, but they are still essential stakeholders because their thinking has both positive and negative outcomes as well. Their impact has broader, long-lasting, and longer-term consequences as a result of legislation, policies and procedures, and guidelines.

Now let's take this two-dimensional image of concentric circles and make it three-dimensional. Visualize the primary stakeholders (patients and significant others), along with clinicians, educators, and the IDT, as the very center or nucleus. Take all those concentric circles full of other stakeholders' thinking and spin them around so they are on different planes. Picture the images from grade school of the rings of electrons rotating around the spinning nucleus of an atom. Are you getting the idea of the complexity and dynamic nature of thinking among the stakeholders?

Don't get overwhelmed by this complexity. We are going to help you dissect, or unpack, things to get a better look at the thinking involved. Or, if you want us to sound more professional, we are going to do some *analyzing* to better understand the pieces of thinking and the impact they have on stakeholders, and then we will move to synthesis to find new meaning.

Major Stakeholders and Critical Thinking

This next section focuses on CT with the major stakeholders. The major stakeholders in health care include two basic groups. Patients and significant others are the primary stakeholders group because they experience the direct consequences of thinking or nonthinking care. Clinicians, educators, and IDTs make up the second major group. This group is closest to the recipients of care and see and feel the up-close and personal results of thinking or nonthinking. These two groups and their thinking have the most impact on patient outcomes.

Quality patient outcomes require multiple levels of thinking from all stakeholders, even beyond the major ones. Patients and significant others are thinkers themselves and often struggle to coordinate their thinking with that of the healthcare team.

Why *Is CT Important to Patients and Significant Others, the Primary Stakeholders*?

Explaining why CT is important to patients and significant others is a bit of a no-brainer. Patients and significant others are at the center of the healthcare system. They are the primary stakeholders in quality care. They are dependent on the thinking and actions of those who work in health care to receive quality care. For now, we will simply say that the delivery of safe, effective, and efficient care has always been the underlying goal of good nursing care. CT is essential to achieving these goals.

The exercise in **TACTICS 1-3** highlights how nursing staff using (or not using) CT affects the primary stakeholder, the patient. This exercise could be used by clinicians or educators to emphasize why thinking is important to safe, effective, and efficient patient care.

TACTICS 1-3: Exploring Safe, Effective, and Efficient Care for Mr. Stone

1. Read the scenario about Mr. Stone.
2. As you read, consider whether better thinking could have prevented the extended hospital stay.

Scenario 1-1: Mr. Stone

Mr. Stone is a 60-year-old male. He was admitted to the hospital 3 days before the Christmas holiday for emergency surgery after his left arm was severed midway between his wrist and elbow in an industrial accident. He was in good health prior to the accident but had smoked one to two packs of cigarettes per day for 40 years. The surgery to remove the severed portion of his arm and prepare for a prosthesis was successful. Nursing care included administration of pain medications, monitoring for infection at the wound site, and assistance with activities of daily living. Mr. Stone was expected to be discharged in 2 to 3 days. On the second day after surgery, he developed pneumonia, and his hospital stay was extended 6 more days.

Discussion

Your answers about better thinking may be more general, but we'll start using the language of the dimensions of CT that we described earlier in this chapter (in Box 1-3). Consider thinking dimensions that possibly were not used. If the nurses were *applying standards*, they would have designed care to include coughing, incentive spirometry, and precise assessment of respiratory status when developing their postoperative care plan, not just medications and wound care. If the nurses were using *contextual perspective*, they would have more carefully assessed Mr. Stone's smoking habits and any history of respiratory problems. If the nurses were *discriminating*, they would have identified Mr. Stone as a very high-risk patient for postoperative pulmonary complications because of his smoking. If the nurses were *predicting*, they would have recognized the serious consequences of not developing a rigorous plan for postoperative coughing and deep breathing. They might even have made a referral to respiratory therapy to institute such a prevention plan.

Of course, Mr. Stone might have developed pneumonia in spite of all those nursing interventions; however, with better CT, the chances of this outcome would have been greatly reduced. Not only did Mr. Stone suffer the physical and emotional pain of the loss of an arm and early retirement, but because of his potentially preventable pneumonia, he also was hospitalized over the Christmas and New Year's Day holidays, a time of year that he would have enjoyed with family and friends at home.

In addition to safe care, CT is important for effective and efficient care. Effective care is individualized and accurate. It employs the correct interventions for the health situation at hand. Efficient care requires timely thinking so that resources are used appropriately. If Mr. Stone's nurses had been more effective in their thinking, they would have individualized their assessment, accurately diagnosed his risk for pneumonia right from the start, and implemented proper interventions. In addition, if Mr. Stone's nurses had used more CT, his hospital stay would have been shorter, thus saving time, money, and energy. In short, his care would have been more efficient. This scenario demonstrates the impact that thinking has on patients and their significant others. CT makes a huge difference in patient care outcomes!

The group of stakeholders in the next circle includes the clinicians, the educators, and the IDT. The stakeholders in this circle have the most direct impact on outcomes for patients.

Why *Is CT Important to Clinicians?*

Clinicians who think critically have more *confidence* in their reasoning. *Confidence* in reasoning allows nurses to speak their minds, to openly identify potential errors and near misses, to contribute to team meetings, and to provide solid rationales for their decisions. *Confidence* empowers them to make valid contributions and decisions related to patient care and unit concerns.

CT is important to job satisfaction because it helps the clinician attain and maintain a professional nursing self-image. Even when parts of the nursing role are

uncomfortable, good clinicians rely on professional ethics and *intellectual integrity* to reinforce their thinking. They derive job satisfaction from knowing that their thinking was actively engaged and the job was done to the best of their ability. One strategy to achieve such satisfaction is through *reflection* (Gustaffsson & Fagerberg, 2004). The scenario in **TACTICS 1-4** illustrates how CT empowers decision making and enhances job satisfaction.

TACTICS 1-4: Enhancing Decision-Making Skills and Job Satisfaction through Professional Integrity

1. Read Scenario 1-2.
2. Where did Juan use his best thinking?
3. How do you think Juan felt about the situation?
4. How did Juan's CT affect both decision making and job satisfaction?

Scenario 1-2: Juan's Home Visit

Juan is a community health nurse. His home-care patient load today included 17-year-old Jenny and her 3-week-old newborn, Billy. This was Juan's first home visit with Jenny, following up on a referral from the pediatrician's office because Billy had not gained weight since birth. Jenny was an unwed mother living with her parents in a spacious, professionally decorated home in an upper-middle-class neighborhood. Jenny looked tired and interacted only minimally with Juan, and she rarely looked at the baby, who was restless and fussy in his bassinet. Jenny's mother was home, and she did most of the talking, explaining how she expected Jenny to take full responsibility for Billy's care. In fact, Jenny's parents both worked and were frequently out of town on business, but because of Juan's visit, Jenny's mother stayed home to assure the nurse that though the visit was well intentioned, it was certainly not necessary.

Juan examined Billy and found some disturbing data. Billy had lost another 3 ounces, and there were several dark areas on his back and legs. These markings had not been noted on the referral information.

Juan asked more questions. Jenny's mother assured him that Jenny was doing a fine job; they would be sure Billy got an extra feeding to gain his weight back; and all her children bruised easily, so Billy probably inherited that trait.

Juan, however, had to make a tough decision. He didn't want to believe the baby was being abused; this was a normal-looking family in a decent neighborhood. But he couldn't ignore the data: indications of ineffective maternal bonding, failure to thrive, and the apparent recent bruising all pointed to possible abuse. He also knew he was legally obligated to report suspected abuse. He was not comfortable with his decision to file a formal report, but he was confident it was the correct decision and that he could justify his reasoning. Juan found out later that the nurse at the pediatrician's office had

similar concerns, but she only had the original weight loss data to go on. She told Juan that she didn't want to bias his thinking, so she didn't share her suspicions with him until after his visit.

Discussion

The key thinking areas that Juan used in this situation were *intellectual integrity* (although he did not want to believe that the infant was being abused, he had to consider the evidence), *applying standards* (he was legally required to report suspected abuse), *confidence* (he trusted his reasoning ability), and *logical reasoning* (he believed he had adequate evidence to support his suspicions).

Juan very likely also felt shocked, uncomfortable, and annoyed: shocked and uncomfortable that an upper-middle-class family might be abusing a child, and annoyed that the nurse in the pediatrician's office had not been open about her suspicions before the visit. He believed that he would have been *open-minded* enough to collect accurate information even if he had known of the nurse's hunch.

When Juan reflected on the situation, he could justify and support his decisions. He knew his judgment was sound. As an individual and a professional, he derived satisfaction from knowing that he may have saved a life and provided an opportunity for a family to become more functional. He became a nurse because he wanted to help people, and that goal was accomplished. By doing his job with compassion and *intellectual integrity*, his behavior matched his role expectations, leading to job satisfaction.

Another way that CT benefits clinicians is by helping them move from novice to advanced beginner to competent to proficient and, ultimately, to expert (Benner, 1984). Throughout this process, the clinician moves away from the context-free rules of novice decision making to more sophisticated levels of thinking. Thinking is essential to expert nurses, who can imagine the whole of a situation from a few details. They use *reflection* in action; they have learned to trust their *intuition*. And they do all of this consistently. Expert nurses engage all CT dimensions so naturally and with such ease that their decisions look effortless. The hard work of the thinking behind their actions is rarely apparent unless they have recognized how important it is to think out loud. Many experts don't recognize how fine-tuned thinking is, but they couldn't be experts without it. This level of thinking benefits patients as well as nurses.

Why *Is CT Important to Educators*?

Nurse educators derive all the benefits that clinicians do from CT, and more. CT helps novice (and experienced) educators accept the reality that they do not need to know everything. This acceptance usually comes harder to the novice educator. Most experienced educators come to realize that their brains do not have enough random-access memory (RAM) to store all needed information and that the information they need to store keeps changing. With good CT habits of mind and skills, educators can be comfortable saying, "Let's go look that up," or "That's a good question, but I'll have to get back to you with an answer," or "Gee, I don't know, but let's see if we

can figure it out." Thinking helps educators accept that they don't know it all, but because of their CT, they have effective strategies to search for the best information.

CT helps both service-based and academic-based educators promote learning processes. Notice that we said learning, not teaching (see **Box 1-4**). Teaching can be simply imparting information to a passive recipient. Learning requires active engagement among the learner, the content, and the educator. CT helps the educator design such interactive learning processes, illuminating the connection between pieces of information and allowing learners to discover answers through their own use of CT. For example, instead of simply sharing the latest evidence-based guidelines on the use of a

Box 1-4 Comparing Learning and Teaching to Promote Critical Thinking in Nursing

Focus on Learning		*Focus on Teaching*	
The Teacher	Strong knowledge of content and the information needed for CT	**The Teacher**	Strong knowledge of content and information needed for CT
	Shares expertise with real-world examples		Shares expertise with real-world examples
	Designs active learning opportunities to engage learner and teacher in multiple levels of higher-order thinking skills		
	Strong emphasis on processes of learning, thinking, communication necessary to apply CT		Strong emphasis on content knowledge; for example, lab values, disease entities, etc.
	Integrates essential content knowledge with essential processes; for example, communication, CT, the nursing process		

Box 1-4 Comparing Learning and Teaching to Promote Critical Thinking in Nursing (continued)

Focus on Learning		*Focus on Teaching*	
Assessment/ Evaluation	Designs multiple mini formative evaluation points to check for understanding throughout the course of study to assess thinking and learning	**Assessment/ Evaluation**	Uses either instructor-developed or standardized assessment options (quizzes, examinations, papers, projects) given to students throughout and at end of course
	Engages writing consultants, librarians, and peers in designing both formative and summative evaluation activities; for example, writing assignments, projects, vignettes to assess for CT, etc.		
	Reflects on outcomes of assessment tools and explores options for improvement		Reflects on outcomes of assessment results
The Learner	Actively engages in thinking and problem solving with content knowledge	**The Learner**	Passive recipient of information
	Moves from memorization to integration of knowledge and application of higher-order thinking		Highly skilled in memorization
Student Learning Outcomes	Learner is able to repeat back information during assessment	**Student Learning Outcomes**	Learner is able to repeat back information during assessment
	Learner is consistently able to appropriately apply classroom and laboratory knowledge into practice arena		Learner is usually able to apply classroom and laboratory knowledge in practice arena
	Learner is successfully able to integrate both content knowledge and process knowledge in a variety of practice settings		

new heparin-lock device with her staff, the staff development specialist provides time and a place for focused dialogue, exploring the advantages and disadvantages of this new device. What are the challenges of using it? How is it best used in patient care? Does it meet guidelines? CT is important to create learning processes that maximize real behavior change and transform information into useable knowledge.

CT also helps educators assess learning outcomes. For example, rather than selecting prepackaged assessment tools or educator-created competency checklists for evaluation of learning, the critically thinking educator will examine existing tools to see how well they match what needs to be learned. CT is needed to make those comparisons. For example, a nursing practice laboratory coordinator will anticipate how students should demonstrate competency in intramuscular injections. She will think about the answers to the following questions before she facilitates learning:

- What principles must the student articulate?
- What level of psychomotor skill must the student achieve?
- How can learning be designed to achieve the desired outcomes?
- What is the best way to assess that learning?

These questions must be answered before the actual laboratory learning (and thinking) occurs with the students. This preteaching CT helps the coordinator design assessment tools that do the job they are intended to do. Without thinking about the assessment, as well as the learning, educators do only half of their thinking jobs. Thinking is the common denominator for service-based and academic-based educators if they want to promote learning that results in behavior change.

Why Is CT Important to Interdisciplinary Teams?

Effective IDTs (1) are made up of members from more than one discipline or professional group, (2) are expected to pool their CT skills and habits of the mind to expand on ideas, and (3) consider all members as equal partners in thinking, including patients and significant others. Current evidence indicates that functional IDTs are the ideal for achieving desired health outcomes (IOM, 2003, 2011), and experts have noted the need to improve team thinking and actions (Halpern, 1998; Sanderson, 2003).

Other teams—multidisciplinary teams, for example—also benefit from CT, of course. But because CT is so important to IDTs, let us distinguish them from other healthcare teams. Multidisciplinary teams typically provide their discipline's perspective on patient situations but do not necessarily engage in collective problem identification and decision making. IDTs do all of this, and more.

So what is different about CT in IDTs, and why is this thinking so important? To pique your interest, we have selected just three reasons why CT is so important to IDT.

First, the thinking of the individual team members provides a wide range of raw material on which team thinking can be built. Their CT, combined with their

individual knowledge base and paradigms for problem identification and decision making, is an essential contribution to the team's overall functioning.

Second, the team can examine, discuss, and select options from a larger pool of information and mix and match options before making decisions. It is this pooling of ideas that leads to the synergistic thinking so valued in health care.

Third, team thinking is also important to group cohesion. Starting in the 1960s, the literature on group work and teamwork consistently identified group cohesion as essential to effective outcomes (Massello, 1998). Team thinking provides opportunities for developing trust and respect, both of which contribute to this group cohesion and, thus, to more effective outcomes—the goal of IDT work.

Why *Is CT Important to the Other Stakeholders?*

The thinking of stakeholders who are less directly involved in care also can have a profound effect on the care of patients. Their CT is also important to the stakeholders themselves because CT affects their more immediate goals, such as unit functioning, survival of the organization, social policy, and professional responsibilities. We have selected unit managers; healthcare administrators and third-party payers; and a collective of healthcare organizations, governments, and professions as examples of these indirect stakeholders. As you read, see if you can think of additional reasons why CT might be important to them, and consider other such stakeholders who might be involved.

Why Is CT Important to Unit Managers?

Unit managers benefit from their own CT and the CT of others in many ways, including better use of resources, achieving unit goals, and demonstrating quality of care on the unit. The thinking unit manager (and thinking staff) might use *creativity* to rethink how clean linen is delivered to the unit to save money, or *flexibility* to schedule IDT meetings at convenient times to develop goals and strategies. He or she might model *inquisitiveness* by working with staff to identify new safety policies and procedures to improve quality on the unit. He or she might use *reflection* to mentor peers and improve consistency in management approaches (Hyrkas, Koivula, Lehti, & Paunonen-Ilmonen, 2003). Managers' CT abilities have a huge impact on all other stakeholders.

Why Is CT Important to Healthcare Administrators?

Administrators in charge of organizations such as hospitals, long-term care facilities, home-care agencies, trauma centers, and outpatient clinics are primarily responsible for maintaining and developing their organizations and promoting quality service in a cost-effective way. CT is the only way to find solutions to what some view as polarized interests. For example, quality and cost-effectiveness are frequently viewed as opposites, yet CT can help reframe that perspective. Polarity management is one strategy for using CT to *analyze* commonalities and then find *creative* ways to deal with other

issues (Yoder-Wise, 1995). *Transforming knowledge* is another CT essential for administrators whose organizations are moving toward more patient-centered care (Miller, Galloway, Coughlin, & Brennan, 2001). Hansten and Washburn (1999) noted that administrators must have "advanced abilities to think critically . . . to improve clinical systems, decrease errors and sentinel events, and engage staff involvement to refine patient care systems" (p. 39).

Administration in health care is not confined to the practice setting. Administrators in institutions of higher education who teach health providers also need and benefit from CT. The setting may be different, but the needs are the same; CT is important in finding the balance between quality education and its cost. We don't have to tell you that healthcare education—particularly in medicine, nursing, pharmacy, and dentistry—is expensive. Remember the bumper sticker that says, "If you think education is expensive, try ignorance!" Maybe we should make a bumper sticker that says, "If you think thinking time is expensive, try health care without it!"

Why Is CT Important to Third-Party Payers?

Speaking of cost, this is where thinking is important to third-party payers—insurance companies, Medicare, and Medicaid. Remember Mr. Stone, who developed pneumonia because of inadequate CT? Fortunately, his insurance covered the cost of his prolonged hospitalization, but that cost was unnecessary and a waste of resources.

Third-party payers must rely on CT to maintain their ability to pay for health care and keep their stockholders happy. They particularly depend on *analyzing* and *predicting* to do their jobs. They also recognize the importance of changing their thinking from a focus on short-term goals to what will occur over the long term. The Affordable Care Act in the United States is making all third-party payers devote attention to the costs of care and quality (Legislative Council, 2010).

Why Is CT Important to Healthcare Organizations, Governments, and the Healthcare Professions?

The outermost circle of stakeholders contains the most complex organizations. CT at this level is very challenging and equally essential. Although at first glance these stakeholders may seem to have little impact on the day-to-day activities of healthcare organizations, in reality, their CT is very important to clinicians and educators. The CT of healthcare organizations, governments, and the healthcare professions influences the policies, legislation, and standards that guide both practice and education. It has long-term effects on the day-to-day activities and thinking of all stakeholders. Because these stakeholders have such a broad span of influence, they can use CT to see the big picture and the details, allowing them to design and implement policies that affect many people. Does this sound like *contextual perspective* or what?

Healthcare organizations need to use CT consistently to function effectively and achieve their missions and goals while maximizing their resources. For example, *creativity* helps them find better ways to organize staffing patterns. *Analysis* and *logical*

reasoning help them examine infection patterns or track the rising costs of supplies. *Flexibility* helps them redirect services to meet changing customer needs.

All government organizations—be they international, national, provincial, state, or local—that are mandated to protect the public welfare need at least *analysis, logical reasoning*, and *contextual perspective* to help accomplish their goals while balancing the demands of other activities that are all competing for the same tax dollars. For example, *analysis* and *logical reasoning* can be used to determine why a state's mental health system is ranked lowest in the nation. *Contextual perspective* helps government groups understand how weather conditions affect the air conditioning needs of the growing number of citizens with chronic obstructive pulmonary disease. As the world gets smaller, the context of healthcare thinking must be global.

Other healthcare professions also rely on all 17 CT dimensions to meet the criteria for their professional status. Those criteria vary, depending on the source you use, but the basics of any profession include a code of ethics, a body of knowledge, higher education, and self-regulation (Haynes, Boese, & Butcher, 2004). How could one achieve a code of ethics without *reflection* and *logical reasoning*? How could one develop a body of knowledge without *analysis* and *inquisitiveness*? How could a professional organization design guidelines for a university curriculum without *perseverance* and *information seeking*? How could one manage self-regulation and accreditation standards without *applying standards, discriminating*, and *intellectual integrity*? *Contextual perspective* is essential as healthcare professions move toward interdisciplinary teamwork, learning from one another while maintaining their autonomous bodies of knowledge. You can probably cite examples for all the remaining CT dimensions.

Summary of the Impact of Stakeholders' CT on Quality Patient Outcomes

That's a whole lot of folks who need to recognize the impact of their thinking (or nonthinking) and the aspects of their thinking dimensions. We have summarized why CT is important for these various stakeholder groups in **Box 1-5**. This is only a very brief overview that we hope you will be able to expand on as you continue your thinking journey.

Box 1-5 *Why* Is CT Important for Various Stakeholders?

***Why* is CT important to:**

1. Patients and significant others?
   Thinking promotes safe care.
   Thinking enhances effective care.
   Thinking increases efficient care.

(*continues*)

Box 1-5 Why Is CT Important for Various Stakeholders? (continued)

2. Clinicians?
   Thinking empowers decision-making skills.
   Thinking enhances job satisfaction through professional integrity.
   Thinking achieves expertise in practice.
3. Educators?
   Thinking makes it OK to not know it all.
   Thinking promotes learning processes.
   Thinking enhances assessment of learning.
4. IDT?
   Individual thinking provides the IDT with raw material for problem identification and problem solving.
   Team thinking provides synergy to create ideas that individuals would not achieve independently.
   Team thinking enhances group cohesion.
5. Unit managers?
   Thinking allows better use of resources.
   Thinking promotes achieving unit goals.
   Thinking demonstrates the quality of care on the unit.
6. Healthcare administrators?
   Thinking promotes quality service in a cost-effective way.
   Thinking is the way to find solutions to what some view as polarized interests, such as quality and cost-effectiveness.
   Thinking promotes safe, quality, patient-centered care.
7. Third-party payers?
   Thinking maintains their ability to pay for health care.
   Thinking keeps their stockholders happy.
   Thinking keeps them in business.
8. Healthcare organizations, governments, and the healthcare professions?
   Thinking allows them to see the big picture and the details.
   Thinking allows them to design and implement policies that affect many people.
   Thinking helps maximize resources.
   Thinking forms professions' codes and bodies of knowledge.

What Else Is Needed to Emphasize *Why* CT Is Important?

Something is important only if we value it. Words on paper do not create value. As Fullan (1993) said, "You can't mandate what matters" (p. 21). CT can never be mandated; the only successful activity is using mandates "as catalysts to reexamining"

(p. 24) the current state of affairs, which can lead to value changes. This applies to the nursing and healthcare sectors very clearly. Clinicians who are expected to promote CT but don't value it may give lip service to its importance and will not (1) commit the energy necessary for CT or (2) experience the role satisfaction that CT produces. Educators who expect to teach nursing and CT but do not value thinking will experience the same dilemmas.

So how can we help people learn to value CT? We start with Fullan's (1993) catalysts—words in mission statements, accreditation standards, and textbooks—and then we have to bring the words to life. We do this by talking about CT every day to nurture and cultivate our own CT and the CT of others. Consider the following scenario, in which a graduate student is explaining to his instructor how he modeled CT for a nursing student he was preceptoring on an inpatient medical–surgical unit.

This scenario demonstrates why talking about your thinking makes it more real for your students (if you are an educator) or your staff (if you are a clinician). Because they cannot see your neurons firing, you have the responsibility to make CT overt. When CT becomes overt through specific language, its value can be recognized.

Scenario 1-3: Modeling CT

A patient was admitted to an inpatient medical–surgical unit for evaluation of cardiac arrhythmia. She also had a history of mental illness. Her recent symptoms included nausea, diarrhea, and a low-grade fever. This was the *reflection* the graduate student teaching assistant shared with his instructor detailing how he had modeled his CT for an undergraduate nursing student:

I wanted the student to see how I was thinking through this problem and that it was OK to not have all the answers. The patient had a long history of bipolar disorder and had been taking lithium for several years, successfully managing her disease. The staff told us she was also a bit of a hypochondriac and that this was the second time this month she was complaining of the flu. I told the student, "We have to be careful and not let our perceptions affect our data collection; we have to be open-minded from the beginning. Let's use some inquisitiveness *here and find out from the patient what is happening. We need a little more* contextual perspective*, so we need to get some historical information, a sense of what has been going on in her life recently, food allergies, and so on. I'm also wondering about the possibility of lithium toxicity. Go grab a drug book and let's check that out. What do you think? How do her lab values compare to the norms? Let's do some analysis here and look at all the pieces and then think about how they do or don't fit together. Think about it for a minute and tell me what dimensions of our thinking will be needed next." We discovered that the patient was, in fact, having a toxic reaction to lithium. Her blood levels were over 1.5 mEq/L. She wasn't just being a hypochondriac. I really tried to use my CT words so that the student could see inside my brain. I had to figure this out all on my own—I want my student to have a head start.*

The challenge is to really talk about thinking, not just talk about doing! It takes practice, *reflection*, and peer feedback to get things rolling. The TACTICS activity

activity in **TACTICS 1-5** was designed to help clinicians and educators stimulate, cultivate, and nurture their talking about thinking.

TACTICS 1-5: Verbalizing CT So Others Will See the Value

Clinicians and Educators

This activity requires three people, paper and pencil, and maybe some colored highlighters. One person assumes the role of the educator, one person assumes the role of the staff member or student, and one person assumes the role of the observer. Ideally this activity could be videotaped, but it works equally well without taping. The activity can be repeated by exchanging roles after the first time around.

Part I (5–10 minutes)

EDUCATOR: Your job is to select a teaching situation that will help your staff or students learn some aspect of nursing care but will also allow you to model your thinking as you are modeling your explanation of care.

STAFF/STUDENT: Your job is to listen for the educator's CT messages and jot them down as you are learning.

OBSERVER: Your job is to listen for both the educator's and the staff or student's thinking. Take notes that can be shared with the others later. Note: What words were used that reflect thinking? How many thinking words (*open-mindedness*, *confidence*, *analyzing*, *predicting*, and so on) were used in comparison with action words ("Next I need to flush the tubing")? Be as specific as possible as you take notes.

Begin the exercise. After 5–10 minutes, have each participant rate the educator, using the following scale of 1–10, with 10 being the total teaching activity.

What proportion of teaching focused on doing? 1 2 3 4 5 6 7 8 9 10

What proportion of teaching focused on thinking? 1 2 3 4 5 6 7 8 9 10

Which specific CT descriptors were used? _____

What might the educator do differently next time to more explicitly model thinking with CT words? _____

If you have highlighters, use them to mark the actual CT descriptors.

Part II (10–15 minutes)

OBSERVER: Share your notes and your rankings with the others.
STAFF/STUDENT: Share your notes and your rankings with the others.
EDUCATOR: Share your notes and your rankings with the others.

Discussion

How did everyone do? What did you discover about how your modeling of thinking can be used the next time you teach CT?

Educators in any setting are expected to teach thinking. Teaching CT, however, requires one to accept that CT is a process, not simply more content. For example, when teaching the process of communication, we don't simply lecture on it; we model it, provide lots of opportunities to practice it, and have students overtly identify skills such as restatement, clarifying, and open-ended questions. We use process recordings to help students see those skill labels and patterns of use. Teaching CT must also be process oriented. *Reflection* journals serve this purpose and are valuable tools to make thinking more overt.

Talking about thinking, as in the previous TACTICS exercise, helps us and others visualize thinking. Talking about thinking helps us recognize why CT is important to us and to our students, patients, organizations, and professions. Talking about CT using CT terminology can help us accomplish what organizational and professional mandates can only serve as catalysts for—valuing thinking.

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PAUSE *and Ponder*

Why Do You Think CT Is Important?

By now we hope you appreciate why CT is so important to healthcare stakeholders, particularly why thinking is so important to clinicians and educators. CT is that important bridge that transforms information to useful knowledge on which patients and all the stakeholders can act. Without CT, any attempts for safe, effective, efficient health care are meaningless.

Reflection Cues

- *Why* questions imply a search for reason, purpose, meaning, and value.
- *Why* and the thinking connected with *why* have triggered many important discoveries over the years.
- Many disciplines believe that CT is important: medicine, engineering, law, business, education, aviation, and health care.
- Current healthcare situations that require more or better CT include the information explosion; dwindling resources; cost containment; morbidity and mortality data; patient safety; and emergent ethical dilemmas, such as prolongation of life without quality and stem cell research.
- Many stakeholders experience the consequences of thinking and not thinking: patients and significant others, clinicians, educators and IDTs, unit managers, healthcare administrators, third-party payers, healthcare organizations, governments, and healthcare professions.
- CT leads to safe, effective, and efficient care for patients.
- CT leads to empowered decision making, job satisfaction, and expertise in practice for clinicians.
- CT leads to a focus on learning more than teaching.
- Clinicians and educators must begin to vocalize their CT to cultivate and nurture it in others.

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