Critical Thinking Indicators (CTIs)

2009 - 2010 Evidence-Based Version
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INTRODUCTION: WHAT’S IN THIS DOCUMENT?

Critical thinking (CT) --- the ability to focus your thinking to get the results you need --- is most important factor that decides whether you succeed or fail. Yet, many nurses haven no clue what critical thinking entails. The Critical Thinking Indicators (CTIs) on pages 7 and 8 are addressed in Critical Thinking & Clinical Judgment in Nursing: A Practical Approach to Outcome-focused Thinking, 4th Ed, and Applying Nursing Process: A Tool for Critical Thinking, 7th Ed. CTIs describe behaviors that demonstrate the knowledge, characteristics, and skills that promote critical thinking in clinical practice. They give you concrete examples of what you need to observe and do to assess and improve thinking—thereby giving a frame of reference to help get everyone “on the same page” and “fast forwarding” to developing the thinking skills needed today.

This document: 1. Describes what critical thinking and clinical judgment entails, 2. Explains the 4-Circle CT Model 3. Defines the term CTI, outlining how the CTIs were developed, and 4. Lists the CTIs in detail. Feedback and questions are welcomed! www.AlfaroTeachSmart.com

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USER COMMENTS

My life would have been easier if someone had given me the CTIs on my first day of nursing school. .... A Senior Nursing Student

The CTIs give us the language we need to talk about critical thinking. We request permission to laminate them and put them on all our hospital .... A Staff Development Nurse

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Critical thinking in nursing is outcome-focused thinking that:

- Is guided by standards, policies and procedures, ethics codes, and laws (individual state practice acts).
- Is based on principles of nursing process, problem-solving, and the scientific method (requires forming opinions and making decisions based on evidence).
- Carefully identifies the key problems, issues, and risks involved, including patients, families, and major care providers in decision-making early.
- Applies logic, intuition, and creativity and is grounded in specific knowledge, skills, and experience.
- Is driven by patient, family, and community needs, as well as nurses’ needs to give competent efficient care (e.g. streamlining paper work to free nurses for patient care).
- Calls for strategies that make the most of human potential and compensate for problems created by human nature (e.g., finding ways to prevent errors, using information technology, and overcoming the powerful influence of personal views).
- Is constantly re-evaluating, self-correcting, and striving to improve.

WHAT ARE CRITICAL THINKING INDICATORS (CTIs)?

The CTIs listed on pages 7 and 8, are evidence-based descriptions of behaviors that demonstrate the knowledge, characteristics, and skills that promote CT in clinical practice. CTIs give concrete descriptions and examples, and are listed in context of what’s likely to be observed when a nurse is thinking critically in the clinical setting. The process for gathering evidence to validate that the CTIs are indeed behaviors that promote CT follows.

- Version 1 of the CTIs. I developed a list of behaviors that I believed promoted critical thinking based on observation, reflection, and analysis during my work as a clinician, educator, consultant, and author. I then examined key literature related to critical thinking in nursing1,2,3,4,5,6,7,8,9 and compared my own work10,11 with the data in the literature. I added any missing behaviors to the list.

- Version 2 of the CTIs. In my workshops, and via the Internet, I asked expert and staff nurses to comment on whether they agreed that the listed indicators were indeed behaviors that promoted critical thinking. I revised the indicators based on their input.

- Version 3 of the CTIs (pages 7 and 8). I conducted a formal study to validate the indicators. Through the use of questionnaires, expert and staff nurses were asked to rate each of the indicators on a scale of 0-6, with “0” signifying I don’t agree at all that this is a behavior that promotes critical thinking and “6” signifying I very much agree that this is a behavior that promotes critical thinking. Data from 120 respondents, strongly suggests that most nurses agree that the indicators are behaviors that promote critical thinking. Ninety-five respondents (79%) rated all the indicators 3’s or better. Most respondents rated most of the indicators 4, 5, and 6. Only two “0” ratings were recorded. Since the original study, a few changes have been made, based on user comments and current literature (references have been updated).
The CTIs are NOT meant to stand alone --- they don’t replace the need for in depth understanding of critical thinking in nursing, including such things as: 1) the effect of diverse thinking, personality, and learning styles, 2) factors influencing thinking, and 3) the many sensitive issues related to assessment, teaching, and evaluation. For this reason, the CTIs are meant to be used in conjunction with the accompanying textbooks (see page 5) and other related courses.

UNDERLYING ASSUMPTIONS

- Because critical thinking is contextual (it changes depending on circumstances), it should be considered from three perspectives:
  1. **Thinking Ahead:** The ability to be proactive --- to anticipate what might happen and what you might do to be more prepared before encountering situations. For novices, with limited knowledge and experience, being proactive is difficult and sometimes restricted to reading procedure manuals and textbooks to anticipate what might happen.
  2. **Thinking in Action:** The ability to think on your feet --- this is rapid, dynamic reasoning that considers several cues and priorities at once, making it difficult to describe. Thinking in action is highly influenced by previous hands-on experience. It’s more intuitive and prone to “knee-jerk” responses than the other types of thinking listed here.
  3. **Thinking Back (Reflective Thinking):** The ability to think back over and analyze the reasoning process to identify assumptions, look for flaws and omissions, gain better understanding, and correct and improve thinking. Experienced clinicians double check and reflect on their thinking in a dynamic way during thinking in action. However, this doesn’t replace reflective thinking that happens after the fact. Deliberate, methodical reflective thinking that happens after the fact, using specific strategies and tools (for example, chart reviews, journaling, and open dialogue with others) brings new insights, more depth, and greater accuracy---you can objectively identify “lessons learned” from experience.

- No one is a mind-reader. Therefore, to understand thinking, observe behavior (what others say, do, or convey by writing, drawing, or other means of communication).

- Assessment of thinking is subjective and highly influenced by the knowledge and thinking, learning, and personality styles of those doing the assessment. For this reason, make assessment as objective as possible by: 1) ensuring that people doing the assessment use specific tools to assess and promote thinking, 2) having more than one person assess behavior using the same criteria, and 3) focusing on patterns of behavior and usual results, rather than single incidents.

- Asking nurses to explain their intent (motives) and looking at their results over time (e.g., assess their patients directly; review their charting) helps you understand their thinking. If you’re not sure about messages sent by behavior, clarify intent. For example, say something like, “Help me understand what you’re trying to do, and why and how you’re trying to do it.”

- Understanding individual personality and learning style preferences is key to being able to evaluate someone else’s thinking.

- Even the best thinkers’ behavior varies, depending on circumstances such as confidence, experience, practice, and familiarity with the people and situations at hand.

- The three CTI categories (Characteristics, Knowledge, and Intellectual Skills) are inter related. The ability to demonstrate knowledge indicators (page 8) alone doesn’t imply critical thinking. Critical thinking requires being able to apply knowledge to get desired results in real situations.
Because the CTIs give clear descriptions of what you need to do to demonstrate critical thinking, share them with students and nurses early in their learning.

The CTIs should not be used uncritically --- as you read them, ask yourself how, why, and whether they apply to the context in which you teach or practice. Delete those that don't apply, add indicators as needed (see next bullet). The first step for using the CTIs is to ask for agreement among users that the indicators are indeed behaviors that promote CT.

Knowledge indicators should be as specific as possible: Add or revise indicators based on the context in which they are used. For example, for specialty practices such as maternal-child nursing, make an addendum page that includes specific knowledge needed to practice maternal-child nursing. If you have recommendations for specialty practice indicators, please let us know by sending an email to AlfaroTeachSmart@aol.com

The CTIs are listed in context of what’s expected to be observed in registered nurses. Some of the behaviors may not be appropriate for students and other levels of nurses (use your judgment).

Clear expectations and a sense of trust between the teacher and learner is essential to improving thinking. Learners should be encouraged to identify how they can best use the CTIs for self-improvement (each person knows him or herself best).

Knowing how to give and take feedback (constructive criticism) is a key skill required to be able to improve thinking. (You can find specific strategies for giving and taking feedback in chapter 6 of Critical Thinking and Clinical Judgment, 4th Ed (2009).

Using the CTIs (a logical, left-brained approach) together with the 4-Circle CT Model (a graphic, right-brained approach) increases understanding of critical thinking by looking at CT from different perspectives (see next page).

The CTI of “healthy” (page 7) does not imply that unhealthy people can’t think critically. It simply points out that poor health --- especially if accompanied by uncomfortable symptoms, for example, fatigue or headache --- impedes critical thinking.

NOTE: People think better when they trust one another. You’re encouraged to download the one-page Code of Conduct (Handout #1 at http://www.alfaroteachsmart.com/handouts.htm). Permission is hereby granted to make as many copies as needed of the Code of Conduct for non-profit use in hospitals or schools of nursing, so long as the online permission form at the following link is submitted: http://www.alfaroteachsmart.com/otherreq1.htm

Click here http://www.alfaroteachsmart.com/books.htm for information on the books below


The 4-Circle CT Model above gives “a picture” of what it takes to think critically. Going clockwise above, here's what you need to do:

1. Develop CT characteristics and behaviors (see page 7). When someone has CT characteristics, the skills in the other circles come readily.

2. Acquire theoretical and experiential knowledge, as well as intellectual skills.

3. Gain interpersonal skills. If you can't get along with others, you'll be unlikely to think critically because you'll be “out of the loop” (people will avoid you). On the other end of the spectrum, if you're “too nice” to confront or give criticism, you contribute little to others' CT and often lose brainpower to stress.

4. If you don't have the related technical skills (for example, IV’s, N/G’s, computer skills) you'll have less brain power for critical thinking (due to the “brain-drain” of learning technical skills).

*Chapter 5 of Critical Thinking and Clinical Judgment gives case scenarios and practice exercises for acquiring key intellectual skills related to nursing process. Chapter 6 gives detailed guidelines for inter-personal skills such as how to give bad news, deal with complaints, work as a team, and manage conflict constructively. Applying Nursing Process focuses on CT skills in context of each phase of the nursing process.
**PERSONAL CRITICAL THINKING INDICATORS (CTIs)**

**BEHAVIORS DEMONSTRATING CT CHARACTERISTICS / ATTITUDES...**

- **Self-aware:** Clarifies biases, inclinations, strengths, and limitations; acknowledges when thinking may be influenced by emotions or self-interest.
- **Genuine:** Shows authentic self; demonstrates behaviors that indicate stated values.
- **Self disciplined:** Stays on task as needed; manages time to focus on priorities.
- **Healthy:** Promotes a healthy lifestyle; uses healthy behaviors to manage stress.
- **Careful and prudent:** Knows own limits—seeks help as needed; suspends or revises judgment as indicated by new or incomplete data.
- **Confident and resilient:** Expresses faith in ability to reason and learn; overcomes disappointments.
- **Honest and upright:** Seeks the truth, even if it sheds unwanted light; upholds standards; admits flaws in thinking.
- **Curious and inquisitive:** Looks for reasons, explanations, and meaning; seeks new information to broaden understanding.
- **Alert to context:** Looks for changes in circumstances that warrant a need to modify thinking or approaches.
- **Analytical and insightful:** Identifies relationships; expresses deep understanding.
- **Logical and intuitive:** Draws reasonable conclusions (if this is so, then it follows that ...because...); uses intuition as a guide to search for evidence; acts on intuition only with knowledge of risks involved.
- **Open and fair-minded:** Shows tolerance for different viewpoints; questions how own viewpoints are influencing thinking.
- **Sensitive to diversity:** Expresses appreciation of human differences related to values, culture, personality, or learning style preferences; adapts to preferences when feasible.
- **Creative:** Offers alternative solutions and approaches; comes up with useful ideas.
- **Realistic and practical:** Admits when things aren’t feasible; looks for user-friendly solutions.
- **Reflective and self-corrective:** Carefully considers meaning of data and interpersonal interactions, asks for feedback; corrects own thinking, alert to potential errors by self and others, finds ways to avoid future mistakes.
- **Proactive:** Anticipates consequences, plans ahead, acts on opportunities.
- **Courageous:** Stands up for beliefs, advocates for others, doesn’t hide from challenges.
- **Patient and persistent:** Waits for right moment; perseveres to achieve best results.
- **Flexible:** Changes approaches as needed to get the best results.
- **Empathetic:** Listens well; shows ability to imagine others’ feelings and difficulties.
- **Improvement-oriented (self, patients, systems):** **Self—** Identifies learning needs; finds ways to overcome limitations, seeks out new knowledge. **Patients**—Promotes health; maximizes function, comfort, and convenience. **Systems**—Identifies risks and problems with health care systems; promotes safety, quality, satisfaction, and cost containment.

**NOTE:** The above is the ideal—no one is perfect. Even the best thinkers’ characteristics vary depending on circumstances such as comfort and familiarity with the people and situations at hand. What matters is *patterns* of behavior over time (is the behavior usually evident?). If you’re a critical thinker, you can probably easily pick three or more of the above characteristics that you’d like to improve (critical thinkers are naturally focused on self-improvement).
### CRITICAL THINKING INDICATORS (CTIs)

#### Behaviors Demonstrating Knowledge & Intellectual Skills

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Intellectual Skills / Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Requirements vary, depending on context (e.g. specialty practice):</strong></td>
<td><strong>Nursing process and decision-making skills:</strong></td>
</tr>
<tr>
<td>Clarifies:</td>
<td>Applies standards, principles, laws, and ethics codes when planning, giving, and adapting care</td>
</tr>
<tr>
<td>Nursing and medical terminology</td>
<td>Identifies purpose and focus of assessment in each situation.</td>
</tr>
<tr>
<td>Nursing vs. medical and other models, roles, and responsibilities.</td>
<td>Assesses systematically and comprehensively as indicated by patient circumstances.</td>
</tr>
<tr>
<td>Signs and symptoms of common problems and complications.</td>
<td>Detects bias; determines credibility of information sources.</td>
</tr>
<tr>
<td>Related anatomy, physiology, pathophysiology</td>
<td>Distinguishes normal from abnormal; identifies risks for abnormal</td>
</tr>
<tr>
<td>Normal and abnormal function (bio-psycho-social-cultural-spiritual)</td>
<td>Distinguishes relevant from irrelevant; clusters relevant data together.</td>
</tr>
<tr>
<td>Factors that promote or inhibit normal function (bio-psycho-social-cultural-spiritual)</td>
<td>Recognizes changes in patient status—takes appropriate action.</td>
</tr>
<tr>
<td>Related pharmacology (actions, indications, side effects, nursing implications)</td>
<td>Identifies assumptions and inconsistencies; checks accuracy and reliability; recognizes missing information; focuses assessment as indicated.</td>
</tr>
<tr>
<td>Reasons behind interventions and diagnostic studies</td>
<td>Concludes what’s known and unknown; draws reasonable conclusions --- gives evidence to support them.</td>
</tr>
<tr>
<td>Normal and abnormal growth and development</td>
<td>Identifies both problems and their underlying cause(s) and related factors; includes patient and family perspectives.</td>
</tr>
<tr>
<td>Nursing process, nursing theories, and research principles</td>
<td>Considers multiple explanations and solutions.</td>
</tr>
<tr>
<td>Applicable standards, laws, practice acts</td>
<td>Determines individualized outcomes; focuses on results.</td>
</tr>
<tr>
<td>Policies and procedures and the reasons behind them</td>
<td>Manages risks, predicts complications, promotes health, function, and well-being; anticipates consequences and implications—plans ahead accordingly.</td>
</tr>
<tr>
<td>Ethical and legal principles</td>
<td>Sets priorities and makes decisions in a timely way; includes key stakeholders in making decisions.</td>
</tr>
<tr>
<td>Spiritual, social, and cultural concepts</td>
<td>Weighs risks and benefits; individualizes interventions.</td>
</tr>
<tr>
<td>Where information resources can be found</td>
<td>Reassesses to check responses and monitor results (outcomes).</td>
</tr>
<tr>
<td><strong>Demonstrates:</strong></td>
<td>Communicates effectively orally and in writing.</td>
</tr>
<tr>
<td>Focused nursing assessment skills (e.g. breath sounds or IV site assessment)</td>
<td>Identifies ethical issues and takes appropriate action.</td>
</tr>
<tr>
<td>Mathematical problem solving for drug calculations</td>
<td>Identifies and uses technologic, information, and human resources.</td>
</tr>
<tr>
<td>Related technical skills (e.g. n/g tube or other equipment management)</td>
<td><strong>Additional Related Skills:</strong></td>
</tr>
<tr>
<td>Clarifies:</td>
<td>Establishes empowered partnerships with patients, families, peers, and coworkers.</td>
</tr>
<tr>
<td>Personal values, beliefs, needs</td>
<td>Teaches patients, self, and others.</td>
</tr>
<tr>
<td>How own thinking, personality, and learning style preferences may differ from others’ preferences.</td>
<td>Addresses conflicts fairly; fosters positive interpersonal relationships.</td>
</tr>
<tr>
<td>Organizational mission and values</td>
<td>Facilitates and navigates change.</td>
</tr>
<tr>
<td><strong>Clarifies:</strong></td>
<td>Organizes and manages time and environment.</td>
</tr>
<tr>
<td><strong>Demonstrates:</strong></td>
<td>Facilitates teamwork (focuses on common goals; helps and encourages others to contribute in their own way).</td>
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<td></td>
<td>Gives and takes constructive criticism.</td>
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<td>Delegates appropriately; leads, inspires, and motivates others.</td>
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<td></td>
<td>Demonstrates systems thinking (shows awareness of the interrelationships existing within and across healthcare systems).</td>
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</table>
References


RECOMMENDED:

Download Creating a Climate to Promote Critical Thinking: 15 Things to Do from the following link (choose Handout # 14 – may be duplicated free): http://www.alfaroteachsmart.com/handouts.html

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