“CRITICAL THINKING IN NURSING EDUCATION”

Lucília Nunes, PhD, MScN, RN
Developing 21st-Century Critical Thinkers

Integrate critical thinking skills within and across all content areas.

Establish safe, intellectually risk-free learning environments.

Provide students with repeated opportunities to practice higher-order thinking.

Open-Minded

Engage in Problem Solving

Collaborate with Others

Think Critically and Creatively

Make Real-World Applications

Communicate Clearly and Accurately

Reflect on Learning

Analyze, Reason, and Evaluate

Consistently cultivate higher-order thinking skills.

Allow time to develop critical thinking skills.

Promote academic conversations or dialogue that foster critical thinking.
Begin to clarify what you need to know, what you already 'know', and what information you have about your issue/topic.

Look at your issue/topic more closely: start to be more directed and purposeful in seeking information.

Bring together the various ideas that you have considered in order to consolidate and articulate new understanding(s).

Consider different perspectives: engage in discussion with others.

Weigh up the evidence, test out different ideas and alternatives.
3. Defining Attributes of Critical Thinking

Walker and Avant (2005) posited that identifying the attributes that define the concept is the most crucial part of concept analysis. Attributes are the defining characteristics of a concept including factors that must be present for critical thinking to be successful. Numerous attributes emerged following a review of current literature on the concept of critical thinking including knowledge acquisition and application, analysis of information, decision making, and reflection.

3.1. Knowledge Acquisition and Application

3.2. Analysis of Information

3.3. Informed Decision Making

3.4. Reflection

3.5. Antecedents

3.6. Model Case

3.7. Borderline Case

3.8. Related Case
Critical Thinking: an Overview

What We Know

› Critical thinking is a complex cognitive process that can be broadly defined as a process of purposeful, insightful judgment that involves the development and effective utilization of multiple dimensions of cognition to interpret and analyze a situation and arrive at and act on an appropriate conclusion or solution\(^{(10,11,15)}\)

• Critical thinkers demonstrate the ability to ask relevant questions, clearly define a problem or situation, use knowledge and previous experience to guide problem solving, examine their own thinking and the thinking of others, and arrive at a conclusion that is not self-serving and reflects thorough analysis of all aspects of a problem or situation\(^{(10,12,15)}\)
  - Critical thinking is considered to be the basis for effective decision making by nurses\(^{(1,10,12)}\)
  - The ability of nurses to think critically is believed to be linked to improved clinical judgment and better decision making in patient care\(^{(8,12)}\)
  - Complex health care systems require nurses to implement various dimensions of critical thinking, including cognitive skills and habits of the mind. Critical thinking improves clinical reasoning, subsequently improving safe care processes\(^{(5)}\)
    - Clinical reasoning is a key component to developing nursing professional development; the foundation of critical thinking must be included in education and performance evaluations\(^{(14)}\)
  • The nursing process, which is a systematic approach to solving problems that is used to diagnose and guide treatment for patient responses to health and illness, is considered a critical thinking competency\(^{(15)}\)
Critical thinking is part of the process of purposeful self-regulatory judgment. This process gives reasoned consideration to interactive interpretation, analysis, inference, and evaluation (Profetto-McGrath et al., 2009). Critical thinking is regarded as the basis of professional judgment and has the potential to improve the quality of judgments and decisions in clinical practice (Fesler-Birch, 2005). This type of thinking is not considered to be a genetic disposition, and it has been suggested that nurses may need to be educated to think critically (Mantzoukas and Watkinson, 2007). Therefore, promoting a critical thinking disposition has been one goal of nursing education for many years (Del Bueno, 2005).

Critical thinking disposition as an intellectual character trait is the personal and subjective disposition of value. One uses critical thinking in response to problems and choices encountered in both one's personal and professional situations and is regarded as an important attribute of the critical thinking process (Facione et al., 1994; Lee, 2008). The
Integrating critical thinking strategies into nursing curricula

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Table 1  Critical thinking framework for a fundamentals course

<table>
<thead>
<tr>
<th>Learner setting</th>
<th>Reflection</th>
<th>CM</th>
<th>Questioning</th>
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</thead>
<tbody>
<tr>
<td>Classroom</td>
<td>Philosophy statement</td>
<td>Nursing paradigm</td>
<td>Socratic circles during each class session</td>
</tr>
<tr>
<td>Clinical setting</td>
<td>Weekly journals; postconference</td>
<td>One map for each client assigned</td>
<td>Pre/Postconference; medication administration</td>
</tr>
<tr>
<td>Laboratory</td>
<td>Thinking aloud</td>
<td>One map that describes each procedure learned</td>
<td>Small groups around the bedside with targeted questions that provide a “what if” scenario</td>
</tr>
<tr>
<td>Simulation experience</td>
<td>Debriefing</td>
<td>Patient safety, communication, collaboration, and leadership skills</td>
<td>Role playing</td>
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*Corresponding author.
Review

Strategies used for the promotion of critical thinking in nursing undergraduate education: A systematic review

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This is a systematic review (SR) of literature on interventions used to promote CT during undergraduate education in Nursing courses.
Critical thinking and creativity in nursing: Learners' perspectives

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Base on some information

Logical, make sense

Think out-of-the-box

Analysis

Think from others' viewpoints

Think about others' opinions

Strategy

Think in different perspectives

Read, evaluate and think in a different way

Draw conclusions after reading different sources

Screen some relevant information

Based on situation

Comprehensive thinking of the scenario

Linkage of objectives

Interpret & organise relevant information

Know how to improve

Critical thinking

Fig. 1. Concept map of critical thinking.
A systematic review of critical thinking in nursing education

Zenobia C.Y. Chan

https://doi.org/10.1016/j.nedt.2013.01.007
Factors influencing critical thinking in nursing education

There were nine studies that mentioned the factors influencing CT in nursing education. According to the studies, the influential factors were categorised into four categories: (i) students, (ii) educator, (iii) education system, and (iv) atmosphere/environment.

The first category is “students”. Students' cultural background may either hinder or facilitate CT. According to three articles (Jenkins, 2011; Kawashima, 2003; Mangena and Chabeli, 2005), students in some countries or cultures try to avoid conflicts, do not question teachers, and are aware of tradition seniority systems. Such cultural backgrounds may prevent students from speaking out and thinking critically. In addition, Mangena and Chabeli (2005) revealed that language barriers may play a role, as students who are not being educated in their mother tongue may focus on translating rather than thinking critically. Students' lack of awareness or lack of a foundational basis of CT is also viewed as an obstacle. Kawashima (2003), Myrick (2002), and Zygmunt and Schaefer (2006) pointed out that some students lacked confidence. They did not express their opinions or learn to think critically because they were too focused on getting the right answers and afraid of making mistakes.

The second category is “educator”. Four studies (Kawashima, 2003; Mangena and Chabeli, 2005, Myrick, 2002; Myrick and Yonge, 2004; Twibell et al., 2005; Zygmunt and Schaefer, 2006) pointed out that educators' role, attitude and belief play some role in influencing students' CT. According to the studies, educators should be open-minded, flexible, supportive and approachable. They should not hold strong beliefs (such as their own ideas, hierarchy), but rather value and trust students' opinions, accept changes and be open to students' challenges. Mangena and Chabeli (2005) pointed out that educators who lacked knowledge of nursing education trends and CT would not succeed in facilitating students' CT. Lastly, educators' behaviours, such as role modelling, facilitating, guiding and prioritising, play some role in developing students' CT (Myrick, 2002; Raymond and Profetto-McGrath, 2005).
The third category is “education system”. A study in Japan (Kawashima, 2003) indicated that lack of cultural sensitivity and a traditional education system hinder the growth of CT. When integrating a new concept, cultural appropriateness should be considered. The emphasis on rote learning, classroom teaching, and the power relationship between teachers and students discouraged students from cultivating CT skills and ability. Nursing education systems should value the importance of CT and teach it as a subject. Mangena and Chabeli (2005) reported that CT lectures should be well planned and provide students with active learning opportunities.

The forth category is “atmosphere/environment”. There were five studies (Kaya et al., 2011; Mangena and Chabeli, 2005; Myrick, 2002; Myrick and Yonge, 2004; Raymond and Profetto-McGrath, 2005) considered the learning environment and atmosphere to be influential factors. The studies revealed that a positive learning environment and atmosphere that facilitate students' CT should be culturally non-threatening, encouraging, and safe and free for discussion and expressing thoughts. Myrick's (2002) study revealed that being accepted by staff during clinical wards had a positive influence on students' CT.
Strategies to Promote Critical Thinking

Thirteen studies provided suggestions and interventions for promoting CT in nursing education, including (i) questioning, (ii) reflective writing, (iii) case-based interventions, and (iv) others.

Four studies explained that educator participants believed questioning could stimulate students to think critically (Jenkins, 2011; Myrick, 2002; Raymond and Profetto-McGrath, 2005; Twibell et al., 2005). The adopted questioning methods could be Socratic questioning, asking multiple questions rather than one, or asking from lower level to higher level questions.

Reflective writing was valued as a useful strategy in six studies (Callister et al., 2009; Jenkins, 2011; Kaya et al., 2011; Mun, 2010; Twibell et al., 2005). Student journaling or writing narratives with appropriate guidelines and questions were shown to have a positive influence on CT skill. Mun (2010) showed that as writing narratives could allow educators to understand students' difficulties and thoughts, the approach helps them to identify students' CT contexts and develop appropriate strategies or suggestions.

Six studies used or suggested that case-based interventions could uplift students' CT; such interventions include simulation (Jenkins, 2011; Kaddoura, 2010; Rush et al., 2008), clinical conferences (Jenkins, 2011; Twibell et al., 2005) and case studies/the case method (Hofsten et al., 2010; Jenkins, 2011). These interventions usually involve asking students to solve problems in given scenarios or cases.

In addition to questioning, reflective writing, and case-based interventions, there are other suggestions of strategies to promote CT. These strategies included good preceptorship experience (Myrick, 2002; Myrick and Yonge, 2004), an art-based workshop (Casey, 2009), and concept maps (Hicks-Moore and Pastirk, 2006). Based on the above findings, the nursing curriculum is striving hard to develop interventions to maximise students' CT.
A course learning activity to promote students' CT development is the use of quizzes that emphasize students' need to prepare for class. Michaelsen's Readiness Assurance Test (RAI) 2011. Incorporating in-class case study discussions or TBL activities is another course activity when students are a realistic patient's point of view and the information they receive. Simulation activities can provide students with opportunities to practice skills and develop CT. Simulation activities include mental simulations, role-playing, and working with simulations. Simulation activities can improve students' CT by applying knowledge in a realistic environment. One teaching-learning approach to promote students' CT development is drawing concept maps (Biniecki & Conceição, 2015; Sinatra-Wilhelm, 2012). The concept maps provide visual pictures of the cross-links among concept components' relationships. Development of the concept map allows students to reflect and identify gaps in their knowledge development and seek help from peers or faculty to improve understanding.
Critical thinking instruction and technology enhanced learning from the student perspective: A mixed methods research study

Ruth Swart

https://doi.org/10.1016/j.nepr.2017.02.003
Developing critical thinking disposition and emotional intelligence of nursing students: a longitudinal research

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Averages scores for sub-dimensions of critical thinking disposition at the beginning and end of academic year are as follows for each dimension from the highest to the lowest: broadmindedness, being analytical, curiosity, self-confidence, searching for truth and systematicity (Table 1). Study results show resemblance to those conducted by Dirimeşe and Dicle (2012), Şenturan and Alpar (2008), Shin et al. (2006), Tiwari et al. (2003), Wangensteen et al. (2010) and Ip et al. (2000).

Broadmindedness refers to tolerance toward different ideas and new viewpoints, being sensitive to one’s own mistakes, and taking into consideration not only one’s own ideas but also others’ viewpoints and ideas in decision-making (Wangensteen et al., 2010; Kökdemir, 2003;
The Ultimate Cheatsheet for Critical Thinking

Want to exercise critical thinking skills? Ask these questions whenever you discover or discuss new information. These are broad and versatile questions that have limitless applications!

<table>
<thead>
<tr>
<th>Who</th>
<th>... benefits from this?</th>
<th>... have you also heard discuss this?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>... is this harmful to?</td>
<td>... would be the best person to consult?</td>
</tr>
<tr>
<td></td>
<td>... makes decisions about this?</td>
<td>... will be the key people in this?</td>
</tr>
<tr>
<td></td>
<td>... is most directly affected?</td>
<td>... deserves recognition for this?</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>What</th>
<th>... are the strengths/weaknesses?</th>
<th>... is the best/worst case scenario?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>... is another perspective?</td>
<td>... is most/least important?</td>
</tr>
<tr>
<td></td>
<td>... is another alternative?</td>
<td>... can we do to make a positive change?</td>
</tr>
<tr>
<td></td>
<td>... would be a counter-argument?</td>
<td>... is getting in the way of our action?</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Where</th>
<th>... would we see this in the real world?</th>
<th>... can we get more information?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>... are there similar concepts/situations?</td>
<td>... do we go for help with this?</td>
</tr>
<tr>
<td></td>
<td>... is there the most need for this?</td>
<td>... will this idea take us?</td>
</tr>
<tr>
<td></td>
<td>... in the world would this be a problem?</td>
<td>... are the areas for improvement?</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>When</th>
<th>... is this acceptable/unacceptable?</th>
<th>... will we know we’ve succeeded?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>... would this benefit our society?</td>
<td>... has this played a part in our history?</td>
</tr>
<tr>
<td></td>
<td>... would this cause a problem?</td>
<td>... can we expect this to change?</td>
</tr>
<tr>
<td></td>
<td>... is the best time to take action?</td>
<td>... should we ask for help with this?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Why</th>
<th>... is this a problem/challenge?</th>
<th>... should people know about this?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>... is it relevant to me/others?</td>
<td>... has it been this way for so long?</td>
</tr>
<tr>
<td></td>
<td>... is this the best/worst scenario?</td>
<td>... have we allowed this to happen?</td>
</tr>
<tr>
<td></td>
<td>... are people influenced by this?</td>
<td>... is there a need for this today?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How</th>
<th>... is this similar to ______?</th>
<th>... does this benefit us/others?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>... does this disrupt things?</td>
<td>... does this harm us/others?</td>
</tr>
<tr>
<td></td>
<td>... do we know the truth about this?</td>
<td>... do we see this in the future?</td>
</tr>
<tr>
<td></td>
<td>... will we approach this safely?</td>
<td>... can we change this for our good?</td>
</tr>
</tbody>
</table>
The expert in anything was once a beginner.