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Methods Faculty Use to Facilitate Nursing Students' Critical Thinking[1]

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ABSTRACT

Faculty facilitate nursing students' critical thinking (CT) in classroom. This article describes methods faculty should use to facilitate nursing students' CT and illustrates which of the 17 dimensions from CT Nursing Consensus Statement are apparent when the suggested methods are implemented. Course organization includes students' learning outcomes for CT, selection of reading assignment, timing to give class/lesson slides to students, and course delivery approaches. Students apply knowledge and use CT when taking examinations.

Introduction

Nurses and nursing students must use cognitive skills to acquire new knowledge and execute judgmental processes to deliver safe quality health care (Burrell, 2014; Facione & Facione, 1996; Lunney, 2010; Rubenfeld & Scheffer, 2015; Tanner, 2009; Thompson & Stapley, 2011). Nursing students must learn how to think like a nurse (Tanner, 2009). Faculty must guide students to become critical thinkers and perform self-assessment regarding their needs (Facione, 1990; Facione, Sánchez, Facione, & Gainen, 1995; Ku & Ho, 2010; Poorman & Mastorovitch, 2008).

Various definitions of critical thinking and then put (CT) are found in nursing literature (Romeo, 2010). Chan's (2013) systematic review of qualitative studies reported that critical thinkers demonstrate four characteristics: they gather information, examine data, analyze data, and determine what intervention is best for the situation. Chan offered three strategies to promote students' CT in nursing: questioning of students, reflective writing by the students on their learning experiences, and discussion of case study interventions. Jenkins (2011) suggested that a common CT definition in nursing needs to be identified to facilitate CT nursing research. Multiple commercial assessment tools based on different CT definitions from nonnursing disciplines have been used to assess nursing students' CT (Romeo, 2010; Staib, 2003). There is a need for reliable and valid assessment tools to measure CT by nursing students (Popkess & Frey, 2016).

Initial work on development of a consensus CT statement across disciplines began with 46 experts from education, physical science, social science, and philosophy disciplines under the guidance of Facione. This consensus statement described an individual who used CT as one who displayed a purposeful cognitive thinking process and used six core skills: interpretation, analysis, evaluation, inference, explanation, and self-regulation (Facione, 1990). Multiple assessment tools based on these six core skills have been developed to measure the CT skills across disciplines. These nonnursing CT assessment tools have inconsistent results when measuring nursing students' CT (Romeo, 2010).

Some nurses and nursing educators questioned whether these six CT core skills were the best fit for CT in nursing because no health care professionals (nurses) were members of the expert panel (Allen, Rubenfeld, & Scheffer, 2004). An international panel of 55 expert nurses inductively developed the CT in Nursing Consensus Statement (NCS; Scheffer & Rubenfeld, 2000). The NCS has 17 dimensions: 10 habits of the mind (affective domain) and 7 cognitive skills (Scheffer & Rubenfeld, 2000). The habits of the mind include: perseverance, open-mindedness, flexibility, confidence, creativity, inquisitiveness, reflection, intellectual integrity, intuition, and contextual perspective (p 356). The cognitive skills include information seeking, discriminating, analyzing, transforming knowledge, predicting, applying standards and logical reasoning (p 356). The NCS provides nurses, nursing educators, and nursing students a common language that describes CT in nursing. This article's purposes are to (a) describe educational approaches faculty should use to facilitate nursing students' CT development and (b) illustrate which of the NCS 17 dimensions are demonstrated by students when the suggested teaching approaches are implemented. Nursing students do not use all 17 dimensions concurrently. Some dimensions are more applicable in the clinical setting. This article is divided in four sections: (a) nursing students' CT development, (b) course organization approaches, (c) course activities, and (d) students' CT for knowledge application.

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Nursing Students' CT Development

Most nursing students demonstrate acquisition of knowledge by using learning techniques that produced high grades in prerequisite nursing courses. A frequently used technique is rote learning (memorizing words) through mnemonic schemes (Gleason et al., 2011; Tan, 2011). Memorization is often considered a "shallow approach" to recall words that match specific words in an examination answer (passive learning) and rarely results in understanding the facts or future application (Gleason et al., 2011; Tan, 2011). Students need guidance to adopt new active learning techniques to develop knowledge (Gleason et al., 2011; McGarry, Theobald, Lewis, & Coyer, 2015). Faculty must coach students to ask questions regarding the relationships among concept components and explain how one component affects the other components. Students who become active learners incorporate a "deep approach" to maximize knowledge development for application when making nursing care decisions (Gleason et al., 2011; McGarry et al., 2015; Rubenfeld & Scheffer, 2015; Thompson & Stapley, 2011; Wiegart, Scager, & Boonstra, 2011). Active learners do self-assessments to determine their learning needs and identify resources that facilitate knowledge development (Choy & Oo, 2012; Poorman & Mastorovitch, 2008). These learners demonstrate four NCS cognitive skills of information seeking, discriminating, transforming knowledge, and logical reasoning. Active learners who can explain relationships demonstrate three NCS habits of the mind: confidence, inquisitiveness, and contextual perspective.

Course Organization Approaches

Faculty must evaluate course organization, plan approaches to be used, and write course expectations to facilitate students' demonstration of CT (Burrell, 2014; Lunney, 2010; McGarry et al., 2015). Four areas of course organization include course/lesson CT learning outcomes, size of reading assignments, timing to provide class/lesson slide handouts, and selection of course delivery methods. Nursing students indicate that their learning is improved when there is congruence between course purposes, learning outcomes, and assignments (Shaha et al., 2013). When students give meaning to the assignments, there is greater knowledge development and connection to the real world (Conklin, 2012).

Course/Lesson Learning Outcomes

Course organization for faculty begins with assessment of the course/lesson learning outcomes to ensure that these reflect the expectation that nursing students use CT. Learning outcomes are recommended instead of lesson objectives because learning outcomes are student-focused, with identified behaviors, to reflect expectations (Courey, Tappe, Siker, & LePage, 2012; Kaylor, 2014; Keating, 2015; Scheckel, 2016). Learner-centered outcomes emphasize high-level cognitive domains of application, analysis, and evaluation (Keating, 2015; Scheckel, 2016). These high-level cognitive domains correspond to NCS cognitive skills of discriminating, analyzing, transforming knowledge, predicting, and logical reasoning. Students report that written lesson learning outcomes guide them in knowledge and CT development (Kaylor, 2014; Shaha, et al. 2013).

An example of two different learning outcomes for a lesson is illustrated in Table 1. The first learning outcome as what was written focuses on knowledge, whereas the second learning outcome expects application of CT. The knowledge outcome only expects students to state facts, whereas the CT learning outcome expects students to (a) use data to describe types of arthritis manifestations, (b) explain the pathophysiologic differences between types of arthritis and patients' responses, (c) identify problem(s) associated with different types of arthritis and include patients' concerns and experiences, (d) state rationale for the prescribed interventions, and (e) predict the patients' benefits from the interventions. The CT learning outcome requires students to use the seven NCS cognitive skills of seeking information, discriminating, analyzing, transforming knowledge, predicting, applying standards, and logical reasoning. The students also use two NCS habits of the mind: confidence and contextual perspective. When students know the expected learning outcome, they demonstrate accountability and responsibility for learning (Han & Newell, 2014; McGarry et al., 2015; McLaughlin et al., 2014; Mennenga & Smyer, 2010; Taylor, McGrath-Champ, & Clarkeburn, 2012).

Table 1
Example of Two Learning Outcomes for Lesson on Mobility

Knowledge learning outcome: emphasizes facts	Students will compare and contrast manifestations and interventions for types of arthritis (gouty, juvenile idiopathic, osteoarthritis, psoriatic, rheumatoid, and septic).
Application learning outcome: expects use of CT cognitive skills	Students will explain the benefits of prescribed interventions for patients with one type of arthritis compared to patients with other types of arthritis (gouty, juvenile idiopathic, osteoarthritis, psoriatic, rheumatoid, and septic).

Size of Reading Assignments

The second area of course organization is faculty's selection of reading assignments/resources for essential information versus the nice-to-know facts (Geist & Catlette, 2014; Kaylor, 2014; Vafeas, 2013). An important fact to acknowledge is that most students are overwhelmed with the number of reading assignments in multiple courses (Scheckel, 2016; Vafeas, 2013). I have had students report not using any reading assignment because of the lack of time and their belief that class/lesson slides provide all the information to know.

Even when the reading assignments have a few pages, beginning nursing students need faculty guidance on how to discriminate what must be known about the concept or context; otherwise, they think they must read every word on every page. Faculty can highlight the significant information in E-Learning textbooks to demonstrate the cognitive skill of discriminating information to increase understanding and reduce excess facts (Geist & Catlette, 2014). Other resources faculty can consider for lessons include up-to-date practice or clinical guidelines (Wiegart et al., 2011), videos, audio recordings, and Internet Web sites (Courey et al., 2012). Students indicate lessons that use current references for the assignments direct them to appreciate the significance of up-to-date knowledge (Vafeas, 2013). The students begin CT development when they apply NCS cognitive skills while using the assigned readings and resources.

In addition, faculty need to recognize that students differ in preference for the printed textbook or E-Learning textbook. Faculty can assist students not accustomed to using E-Learning books with computer setup and navigating the electronic textbook site to find the additional resources not in the printed version (Shrimplin, Revelle, Hurst, & Messner, 2011).

Timing to Provide Class/Lesson Slides

The third course organization area involves the timing to provide students the class/lesson slides. Class/Lesson slides expand from simple to complex content (Kaylor, 2014; Konrad, Joseph, & Itoi, 2011) and allow faculty to illustrate three NCS cognitive skills of discriminating, transforming information, and logical reasoning. The class/lesson slides/notes are key themes (outline) but are not all of the essential information. Students should be directed to add priority

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