Nursing faculty have a historical tradition of teaching their students to think like a nurse as originally described by Florence Nightingale. “If then, every woman must, at some time or other of her life, become a nurse, i.e., have charge of somebody’s health, how immense and how valuable would be the produce of her united experience if every woman would think how to nurse” (see preface of reference 1). Notably, thinking critically like a nurse is becoming a benchmark of professional competence and student performance. Hence, the ability to think critically, to improve clinical systems, and decrease errors in clinical judgments is ever the vision of historic and futuristic nursing practice.

Critical Thinking

Creative thinking, smart thinking, high-quality, and in-depth thinking are semantic representations of the concept that is widely labeled as critical thinking. The famous adage by Descartes “I think, therefore I am,” has contributed much worth to the idea that thinking plays a key role in the very existence of man. In evaluating critical thinking models from 1912 to 1992, Gendrop and Eisenhauer found the common elements of process (active, explicit, purposeful), cognitive skill (inquiry, interpretation, reflection, analysis, creativity, inference, conceptualization, evaluation), data source (reality, evidence, theoretical), reflection, analysis, creativity, inferential cognitive skill (inquiry, interpretation, process (active, explicit, purposeful), found the common elements of reflective thinking, critical thinking, smart thinking, and in-depth thinking. Nearly all definitions of critical thinking emphasize reflection (reflection, perspective); and 7 cognitive skills: inductive reasoning, deductive reasoning, logical reasoning). Nearly all definitions of critical thinking emphasize logic and reasoning.

Teaching/Learning Strategies That Facilitate Critical Thinking

Nursing education involves adult learners as students. Knowles’ theory implies that adult learners are capable decision makers who need to be active participants in the learning process. The adult learning environment reflects a relaxed and informal climate where processes, activities, and collaboration are encouraged and evaluation is by the teacher, oneself, and peers. Adult learners construct knowledge by linking concepts together in meaningful ways based on former learning and life experiences. Research by Novak on meaningful learning led to his adoption of Ausubel’s Assimilation Learning Theory. Ausubel’s theory includes the interrelationships of subsumption (an interactive process between newly learned material and existing concepts (subsumers)), progressive differentiation (refinement of a concept with more precision and specificity), and integrative reconciliation (crosslinking of concepts; similar but not always exact). These conceptual interrelationships are evident in concept mapping, where understanding is characterized by the structure and nature of knowledge, how facts are organized, and the relationships between superordinate concepts. Importantly, “learners first may learn the higher-order concept and then subsume the lower-order concepts, or learners may learn the lower-order concepts and then relate them to the higher-order one.”

The ability to visualize conceptual interrelationships in a hierarchical and causal manner is useful to many disciplines, and provides the learner with an opportunity to practice both inductive and deductive thinking. The distinction of the organizing techniques in concept mapping is evidence that concept maps are not flow charts or outlines.

In many aspects, the use of concept maps in nursing education demonstrates the shift in nursing education from “an information-driven approach in teaching to a process that...
promotes higher level thinking and clinical judgment.12213 The shift emphasizes that nursing education is not just a fact-loading process.15 This has stimulated interest and research into other innovative teaching/learning strategies that facilitate the development of critical “in-depth” thinking in nursing students. Several studies identified teaching/learning strategies that facilitate the development of critical thinking in clinical judgments.121421

The teaching/learning strategies are self-directed learning activities, interactive discussion, role playing, problem-based learning, mastery learning, case studies, clinical rounds, reflective logs (journaling), and reflective practice groups.

The skill of metacognition, thinking about thinking, is a strategy that promotes the use of reflective writing in clinical logs. Reflective writing provides the student with the opportunity to define and express the clinical experience in his or her own words. An analysis of reflective logs by faculty permits individual student instruction and creates a potential arena for personal dialogue between faculty and student for an optimal learning experience.

Another teaching/learning strategy that promotes open communication is student-led clinical rounds. During clinical rounds, students have the opportunity to communicate assessment data, collaborate ideas, create plans for patients, and view the situation from multiple perspectives.19 During rounds, nursing faculty have the opportunity to engage themselves in the thinking processes of their students and present themselves as superior in their critical thinking abilities. “This externalization of the thinking process and the fair-mindedness in thinking is what is meant by ‘modeling critical thinking’ in our teaching of clinical judgment.”2225

The Students

To understand nursing students’ perspectives about the phenomenon of critical thinking and what they believed are the most helpful teaching/learning strategies in developing those thinking skills, I mailed a cover letter, an abridged proposal, and documents of the study protocols to 6 deans I knew at baccalaureate schools of nursing. The cover letter requested that they invite all junior and senior nursing students in clinical nursing courses to participate in the study. Four deans volunteered to act as the study coordinator at their institution. The purposive sample of 134 nursing students came from 3 private and 1 state university. The students voluntarily read, signed, and dated the informed consent form and participated in the study. None of the students were licensed healthcare providers. There were 59 (44%) junior and 75 (56%) senior nursing students, whose ages ranged from 18 to 54. There were 5 ethnic groups represented, with the primary ethnic group being European-American.

The students responded in writing to the following questions: (1) How would you describe how you think (the thinking process that you go through) when making clinical judgments? and (2) What were the most important teaching/learning strategies in the development of your clinical judgment? Upholding confidentiality, I collected the responses and analyzed the data using the constant-comparative approach developed by Glaser and Strauss.23 The general process involved bringing together provisional categories that relate to the same content, have specific properties and dimensions, and are internally consistent and mutually exclusive.2425 The findings in this study describe the experience of junior and senior nursing students in response to the study questions. The results of the data analysis are expressed in narrative statements of the story that is grounded in the data.

The Student Responses on Critical Thinking

The students described their thinking as a cognitive process that was developing through experience in practice. Often, the responses reflected a similar understanding that the process of critical thinking was not polished but would improve in time with the opportunities to practice using those skills in a clinical setting. Broader ways of thinking are learned by working in the field, and although one’s experience may be limited, it becomes clear that education is an essential first step. However, education without experience lessens the capacity of an individual to think critically in a situation where lives are at stake. Education and experience must go hand in hand so that the knowledge gained in the classroom becomes second nature in practice. While a lot can be learned from books, the best experiences come from real-life situations.

Critical thinking in clinical judgments goes beyond what is seen, heard, and presently known; it requires discipline and a willingness to round everything up and put it all together. How the thinking process comes together can be likened to a television screen without an antenna, where things are scrambled, confused, and hazy. Attach the antenna and you get a perception—the light goes on and you can put things in their proper place. Also, thinking is clarified when reasoning skills are used to figure out what is wrong, what is right, and what could have caused the problem. By thinking through different options and weighing each option according to the best interest of the patient, family, and community, what should be done first to improve patient outcomes is realized.

During the thinking process, the thinker may integrate different concepts and relate them to each other while recollecting facts, situations, and patients he or she cared for in the past. This reflective processing is like a mind picture, a concept map of the patient’s varying problems. By going back to the earliest recognizable contributing factor then forward to the patient’s current disease, the correlations and the evolution of the disease process are recognized. Then, by prioritizing and grouping information, the thinker may see how the factors connect to each other and realize their influences on the patient and his or her condition.

Notably, deductive and inductive reasoning enter into the thinking process. Deductively, it begins with the most obvious whole picture and works toward minute details, and inductively, one puts 2 and 2 together, step by step, and thinks it through. Both types of reasoning involve calculating assessment information gathered from both the healthcare and patient point of view. Finally, when the thinking is unsuccessful the
process should be open to the expertise of nursing faculty and other resources. This ensures the soundness of choices when making clinical judgments for the patient and family.

**Student Exemplar 1**

I look at a situation and follow through by doing a little research, before actually planning or implementing decisions. For instance, a patient’s BP has been low, 100/50, but the patient has a history of HTN. Do I hold the drug? I’ll look in the chart at yesterday’s vital signs and whether the drug had been given. If the drug was not given yesterday or the day before, I question myself as to whether I hold the drug or call the doctor regarding the situation. By thinking through different options and weighing each option, what should be done first to improve patient outcomes is realized. I know it is hard to put all the knowledge learned in school into practice, but I know it will come with practice.

**The Student Responses on Important Teaching/ Learning Strategies in Developing Clinical Judgment**

Clinical experience is the most important learning strategy in developing clinical judgment. You cannot learn that skill from a book. Moreover, the clinical experience provides opportunity to observe other healthcare professionals in the healthcare field who are known for their competence and ability. In the clinical environment, other healthcare workers influence clinical judgment; students have the opportunity to watch others and see how they respond. This contributes greatly to knowing what to do in a given situation.

Learning by example and hands-on experiences require more clinical time to be immersed in the environment and to practice, practice, and practice interventions that have been learned. Some of the interventions include completing assessments, giving reports, providing patient care and developing a therapeutic relationship through a fuller awareness of individuals and their family. Clinical time is most important because performing an activity or procedure allows one to understand and remember.

Clinical experience and interaction with direct care nurses provide models for different approaches to care: nurses who care, are very excellent, helpful, encouraging, and facilitate learning; these nurses are willing to help and provide more in-depth teaching. However, nurses who are impatient, unkink, and lack enthusiasm hinder learning. Fortunately, there are many people in the clinical setting to draw knowledge from like clinical instructors who make students think and are open to suggestions. For example, students felt instructors who questioned the thinking behind assessment findings until the most sound clinical choice is made are most helpful.

Apart from clinical and classroom work, linking concepts using maps is helpful. The maps display the interrelatedness of all aspects of patient care and how that work together to create optimal health outcomes. Notably, case studies allow students to focus, think critically, make learning real, and tie things together. Case studies can also be visually displayed on a concept map.

**Student Exemplar 2**

The most important teaching/learning strategies in the development of clinical judgments have been observing procedures being done, then having to do them myself, and then basic repetition from there. Each time that I perform procedures, and take care of patients, I have seen new things and learned more. So, my judgment has become more in tune and accurate from this. You see I can read it in a book a thousand times but until I see it demonstrated and implement it myself, it is just a bunch of words. I would definitely say that having more clinical experience would help develop better critical thinking skills in regard to clinical judgments.

**Conclusion**

The teaching and learning strategies that students described as facilitating development of clinical judgment are as follows: case studies that can be displayed on concept maps, having in-depth discussion with instructors while observing clinical dynamics, and making joint decisions on care. The development of these strategies is critical in the learning environment and lies heavily on the quality and quantity of the interactive discussions students have with faculty and other nurses who openly reflect what they know, how they know it, and who they are in nursing.

However, no strategy was perceived as more important from the data than the desire for “more clinical time and experience.” The challenge for faculty is identifying appropriate clinical facilities despite the challenges often encountered in the evolving healthcare environment. Hence, seeking out exemplary direct-care nursing role models who actively demonstrate their critical thinking processes is paramount for nursing students at all levels on learning how to “think like a nurse.”

These nurses’ demonstration of their critical thinking processes is paramount to nursing students of all levels.

**References**