

Review Article

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Critical Thinking Development in Nursing

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ABSTRACT

Critical thinking in nursing is an important aspect of their education and training but is often neglected. It is of critical importance in patient care and training programs need to provide a rich, robust introduction to it and continue to foster its development. This paper provides an overview of this relevant, salient topic.

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One of the characteristics nurses are inspired with, in their education is critical thinking. It has been a pertinent topic in nursing for some time now. Nurses should possess this skill to provide effective and efficient patient care. Critical thinking is an essential skill that aids in vital health decisions, care management, safety, and well-being of the nurse and the patients they care for. The emphasis has been on critical thinking skills to be a core competency in the nursing educational process. Through school, nursing students are to be taught how to implement this core technique's components as they learn to make patient care decisions. Critical thinking skills are not innate; they are to be taught [1]. A weight is placed on nursing educators' shoulders as they embark on developing their student's high-ordered thinking skills. The United States Governors in the late 1980s proposed educational mandates to teach and assess students thought processes through educational programs that produce outcomes worthy for problem-solving assessments [2]. This paper aims to discuss the components of critical thinking in nursing and how educators take on the challenge to teach their students the essentials of learning and applying critical thinking skills. Once students move into their career paths, they will take these learned skills with them. Refinement will happen as they experience critical thinking encounters as lifelong caretakers working in hospitals, clinics or any nursing career they partake in.

Defining critical thinking

Critical thinking has been defined in various ways by many scholars, but each translation has a similar sentiment. Critical thinking is a concept with character traits and learned actions that are constantly in development as one experiences more and more situations that build upon their learning application. The process of critical thinking is not a method, but a way that the mind orients itself to the situation. Some scholars declare that critical thinking is a mentally active process that is creative in its decision-making

as solutions are refined, flexible, individualized, and situationally specific. Critical thinking is a skill that is necessary for individuals to learn, as it helps them become better students, active learners, insightful mentors, and teachers [3]. Individuals must open up their perspectives, leaving behind their egocentric and socio-centric points of view as they seek fair-mindedness, deliberation, and attention to a more detailed thought process. Formal explanation informs us that critical thinking is a process of purposeful, self-regulated judgment with the goal to consider what is believed from the evidence presented in its context [2]. The nurse then uses knowledge, acquired skills of practice, and training to anticipate the effects of the methods applied.

Actions are chosen to move the nurse on to finally monitoring the delivered care outcomes as evaluation on the new evidence and criteria present themselves [2]. Seifert gives a notably informal definition to critical thinking that uses the four W's & H to relax the defining terms making them straightforward. She states that critical thinking is deciding what to do, when, where, why, and how to apply and act on nursing care [4].

Certainly understated, nurses use the what's, where's, when's, why's, and how's to analyze, implement, reflect, research, and make optimal care decisions when faced with challenging situations. Looking into history, in 1987, Ennis acknowledged the groundbreaking early start to defining critical thinking came from a study by Bloom in 1956. Bloom's proposed that critical thinking was the mastery of a set of skills on knowledge, comprehension, application, analysis, synthesis, and evaluation that provides the best-known action to situations that are novel [1]. Today, educators use the very well-known Bloom's Taxonomy to determine, grade and evaluate the six thinking levels. These levels triangle from low to high in the activity's students are asked to complete and be evaluated on get deeper into the definition of critical thinking, discussing how one can encompass the ability to analyze facts, generate and organize ideas, understand multiple opinions, compare and make inferences, and solve problems [1]. This also

goes with the ability to use scientific and analytic methods that gather information, conduct reasoning and knowledge to get to an impartial conclusion, and probes deeper, eliminating assumptions and logically reasoning out the situation presented.

Lastly, examine cognitive and personal competencies that make up critical thinking components [1]. Although these competencies are separate and have different defining characteristics, they interact with each other constantly when critical thinking is in the works. Cognitive competencies are the intellectual abilities that help one break down, modify, analyze, synthesize, interpret, and summarize information that is presented [1].

Personal competencies bring about independent thinking, perseverance, self-confidence, inquisitive natures, motivation, reflection, creativity, courage, and curiosity [1]. These critical thinking traits are similarly described by as attitudes and characteristics that need to be developed in the educational setting and through personal growth as one develops their career [5]. Additionally, these analytically cognitive attributes aid in the acceptance of conquering a novel situation that needs a sharp eye. The various virtues within each trait are different as cognitive capabilities look more to one's thought process, where personal aptitude accesses our intimate sides. Together they intermingle when critical thinking techniques are applied to create new ideas or to devise productive solutions. Defining critical thinking and understanding the traits that are ignited when one starts to use this higher-ordered cognitive process signals educators to begin the introduction process of critical thinking early, as experience and practice are essential to the novice. Providing learning activities that expose the student to new experiences lets them practice their thinking skills. This is imperative to enhance and improve students' cognitive skills as they move through their educational process speeding up analytical habits and their time to think.

The importance of how we think

Thinking skills are developed over time, and through experiences. The more time one is given to enhance their critical thinking traits and the process of critical thinking, the more these special skills will be used daily and not just saved for experiences in the clinical setting. refer to Newell from 1991, who notes that when humans are faced with a novel issue, eleven to sixteen seconds are needed to interpret the presented situation, and a basic solution be offered [1].

Initially, the novice nurses may take up to the sixteen-second mark to formulate their response. The extended seconds may feel like they are taking too long to provide an optimal solution. Novices sense the pressure of extended response time and may even take longer as they ask for a moment of thought; this elicits doubt. If one is not familiar with the process of critical thinking, the extended time will affect self-esteem when devising a solution. Exposure to critical thinking strategies aids the novice and the experienced to expert nurse in addressing problems in a critical cognitive fashion.

When presented with a question to address, there are two systems that process reasoning. These two reasoning systems are noted by as to how we process decisions as they interlace, mentally aiding us to determine a response [1]. System One is reactive, quick, and instinctive, and System Two is reflective, problem-solving, and critical in its thought process. The intertwining of these two systems forms our decision-making process. We toggle the received information back and forth between systems one and two, concluding a decision/judgment about what we believe

or what actions to take. Reflection follows as we reason out our verdict, taking in any other considerations that need to be made.

Learning decision making proceedings that focus on the core values in the critical thinking process aids the learner to identify problems correctly and find proper solutions. These two goals are essential per to clinical practice, because not taking a critical thinking approach to clinical treatment care decisions is imperative to one's health [1]. If decisions are made that cause misuse, impairment, or misfortune and are not productive to health improvement, harm happens. Training health professionals to use their critical thinking judgments and high-ordered thought processes of analysis, synthesis, and evaluation generate an honest, analytical, fair-minded resolution.

Giving time to think should be looked at positivity as one is producing a fully encompassing decision rather than not knowing or producing an ill-fitted solution to the problem. Critical thinkers may ever so briefly pause when responding as they are holistic in their answers and care decisions.

Creation of the critical thinking nurse

Nurses make up a majority of the hospital and healthcare workforce. They are responsible for providing most of the healthcare activities to their patients. A majority of a nurse's time is spent caring, assessing, and evaluating their patient's health status. Their constant involvement in health care decisions places them in a position to be consistently aware because of their environment, their actions, their thought processes, and their ability to deal with the complexities of the health care day. As nurses deal with the intricacy of the day, they must become skilled in the higher-leveled thought processes that will help them filter safe, competent, creative care plans. Nurses are to start to learn these higher-ordered cognitive processes early in nursing school.

The National League of Nursing has called for educational nursing programs to incorporate critical thinking into their curriculums for the purposes of accreditation likewise emphasizes the call for a change in teaching methods as the nursing profession asks for greater autonomy to grow its professional practice and for it to be seen as more than just a task-oriented occupation [6,7].

Nursing classrooms are the perfect setting to start critical thinking introductions. Critical thinking skills should be incorporated into the curriculum, promptly building on the cognitive and personal competencies as students learn to become nurses. How nursing students are presented with critical thinking techniques is special to how it is best taught.

Critical thinking needs practice with frequent repetitions, active learning strategies that convey realistic care situations. Routine classroom lectures and rote learning are popular styles in education that pass on a large amount of foundational information, but these are ineffective methods to use when working to the develop critical thinking skills of students [8]. proposes that critical thinking skills are achieved through clinical practice encouraging educators to provide these opportunities often as they show to be undoubtedly constructive [7]. propose that critical thinking can be found both integrated into the full nursing curriculum and or be a separate classroom experience onto itself [9,10]. These instructional design decisions depend on the comfort and strength of the faculty in teaching critical thinking methods. remark that instructors are challenged to know what is meant in reference to critical thinking skills[1].

Noting that before they can teach this imperative cognitive process, they must see what critical thinking is and how best to incorporate it in their educational design. Educators are encouraged to understand that critical thinking is not a set of mental competencies, but rather intellectual skills gained as a result of practice [1].

Some educators are also challenged by transferring critical thinking skills in relation to what they teach. Learning and understanding the different pedagogical styles that are best for critical thinking development helps teachers to integrate these essential skills into their instruction plans. Active learning can be seen when students perform assignments such as reflective writing of persuasion or argument, complete concept maps, engage in group discussion sessions, keep journals, participate in case-based studies and join in Socratic questioning practices [11]. Problem-based learning and case-based learning are two pedagogical styles that improve critical thinking skills. Similar to their application, both give students opportunities to practice.

Active Learning

Active learning involves students doing and thinking about the activities that they are accomplishing as they participate in their learning process. It is said that active learning helps students climb the Bloom's Taxonomy pyramid from simply remembering the material to creating a project that is genuine. Active learning is interested in students focusing on the higher-ordered thinking skills set of analysis, evaluation, and creativity. Students can engage in two kinds of activities to promote active learning: doing things and thinking about things [12]. Doing things in active learning means that students are energized to participate in discussions, make concept maps, or debate on presented issues instead of passively listening, memorizing, or reading.

Students must also think about what they are doing to engage in this second category. Here metacognition comes into play as activities get students thinking about thinking, completing self-assessments, and putting the learning concepts into their hands. report that students who have high metacognition skills are academically successful as they are well versed in critical thinking techniques that promote meaningful learning [11].

Active learning can take place through differing assignments that immerse the student into the activity. The blog supports reflective notetaking, one-minute reflection papers, think-pair-share activities, demonstrations, concept mapping, and case study assignments, as these are just a few learning modules that instructors can assign to activate the learning process [12]. Two well acquainted active learning assignments that engage critical thinking are concept maps and case-studies.

Active learning through concept maps

Concept maps are becoming a popular way for students to sketch out the problems presented within an assignment as they create an outline that helps them link together known information with the discoveries they need to understand. promotes concept maps as they are a hospital-based teaching strategy that has shown to promote critical thinking skills guiding students in their patient care decisions and intervention processes. Additionally, nurse educators find the use of case studies as a way to prepare their students for realistic situations they may face in a professional setting [13]. promotes the using case-studies in reverse as clinical reasoning skills are heightened when a small amount of information within a case is presented[14]. The students must build a scenario, case, and interventions from the minimal information furnish as they play

detective connecting the puzzle pieces together. Problem-based learning and case-based learning are two types of pedagogical styles that embody an active learning nature as they incorporate the two different modalities active learning is known for.

Problem-based learning

Problem-based learning is a favorable pedagogy used in many medical and nursing schools worldwide. It is said that this style fashions lifelong learners who are inquisitive, independent, and have high interpersonal skills as they use critical thinking approaches to address problems and questionable situations that need solutions [6,15]. This method involves gathering students into small groups, as this is the most conducive grouping for problem-based learning. Students focus on the process of learning through discovery once a problem is presented.

Problem-based learning is a student-centered instruction where the students are in the driver's seat, taking an active role in what they are learning. Thought by some to be consequentially an extremely learner-centered approach [16]. The instructor plays a minimal role in the educational learning process as they may help the students apply Socratic questions and listen when students need to think through their thought processes. Students are not guided by the instructor when they follow tangents that lead them off-topic or in the wrong directions, as it is the student who needs to learn that the path, they followed was misleading.

Central knowledge is gained as the student's research the information they need to find their solutions. This may lead to the student not gaining all of the foundational instruction and materials needed to be received compared to a lecture-based class. However, note that problem-based instruction helps students learn to solve problems in a critical thinking manner rather than master content[17].

Instructors who use problem-based learning must be flexible, open-minded, supportive, and approachable per [11]. They set the tone for discovery and coach the student through their problem-solving process [17005D].

Case studies are frequently used as assignments as they present a real-world approach to solving ill-structured problems. Concept maps, Socratic questioning games, reflective writing, and journaling assignments can also help students in their critical thinking development. Students who have experienced problem-based curriculums have commented on enhanced communication skills, situational awareness, openly sharing knowledge with peers, improved active listening skills, and searching of evidenced-based practices. These dexterities are imperative for nursing students to gain as they develop the critical thinking skills they will one day need when caring for the patients.

Instructors of problem-based learning have seen that critical thinking skills are transferred to their students as evaluations note the effectiveness of this pedagogical style in its increased communication and teamwork skills. As institutions and faculty start to use problem-based learning pedagogy more, note that specific attention should be placed on how it will be added into curriculums[17]. Faculty may not be very familiar with this pedagogical style, so training and team developments will need to be implemented and request students' acceptance of this new learning technique. Students should start by practicing problem-solving skills before entering into a problem-based curriculum to familiar themselves with investigative practices. Similarly, students who enter into case-based learning will experience the

same inquisitive styles but find they are not left to wander off task.

Case-based Learning

Case-based learning is popular not only in healthcare pedagogies but also in medical, law, and business educational systems, as it provides students with an active learning setting[18]. The students learn to link theory and practice together while investigating the issues presenting within the situation given as their instructor guides them in discussion and solution [16]. Case-based learning is also conducted in small group fashions, and students are given some time before the instruction to prepare and study the topics that will be presented. Both the students and faculty work together to define, understand, question, and resolve the staged situations. Case-based learning is a guided inquiry approach as camaraderie is formed between the instructor and his students. This pedagogical style is an excellent way for nursing students to be challenged by the realities of healthcare dilemmas in a story form. It is noted that a neurochemical reaction is elicited when one listens to a story. Listening to a story can release oxytocin in the body, which is a hormone that is sensitive to social prompts and increases empathy, compassion, and generosity in the listener as they may make an association with the material or find a new understanding for the characters and situations presented ("Case-Based Learning," 2020). Noting this, instructors must see that there is power in case-studies as students become linked in, finding relatable connections and become more invested in plotting out a well-devised solution. This positive outcome is just one of many that are related to case-based learning. mention that gaining more perspective about real-life positions develops a mindset that is cooperative and accepting and lets students practice their listening assessment skills as they prepare for their professional roles[19].

Students who get to take advantage of case-based learning are able to openly explore the issues presented in a structured setting with goal-directed focus and instructors who lead students away from tangent exploration, refocusing their path to find the best solution. However, proposed that a consequence of this guidance may halt the inquisition of the student if too much management on the solution is in place[15]. This is one of the negative reactions that may surface. Instructors of case-based learning modalities need to be aware of their part in the learning scenario, for taking the learning out of the student's hands is the reverse effect of case-based learning.

completed a study comparing both problem-based and case-based learning styles[15]. In that study, students and faculty provided more positive feedback on their learning experiences with case-based learning because of the guided provisions that structured their learning experiences. found that students and faculty also felt they stayed on tasks and did not follow unfocused tangents and received a deeper learning experience with their class materials[16].

Just as in problem-based learning, case-based learning may find its challenges as curriculums adjust to adding this learning style into their mix. call for programs that are going to prioritize the development of student's critical thinking skills and include course-specific methods that raise students who use high-ordered thinking techniques[10].

Conclusion

Critical thinking skills require time to be developed. Both the students and educators need to be invested in carving out the characteristic traits that heighten one's ability to cognitively surpass the basics of mundane thought. Students throughout their

nursing school experience will consistently hear the phrase "think like a nurse." This emphasizes to the nursing student that they must take in the holistic picture presented before they apply clinical judgment upon it and use their critical thinking nursing hats on novel situations or complex care problems that may emerge. Faculty make it their ambition to foster opportunities that support students' growth. It is imperative to know which pedagogical styles or active learning strategies will help students advance their thought process. Students who can engage in a problem-based or case-based learning environment that focuses on developing critical thinking skills will gain the upper hand in crafting the top tier of their Bloom's taxonomy pyramid. Critical thinking skills are not only important in one's professional growth path. These skills can be applied anywhere at any time to help one progress through the daily challenges that may arise.

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