The Critical Difference Assignment: An Innovative Instructional Method
Virginia Ann Utterback, PhD, RN, CNE; Deborah Davenport, MSN, RN, CNE; Belinda Gallegos, MSN, RN, CNE; and Enola Boyd, MEd

ABSTRACT
Nurse educators are faced with the challenge of developing and evaluating learning methods that promote knowledge acquisition, problem solving, and the development of clinical judgment to meet today’s expectations of new graduates. Clinical judgment is at the heart of decision making and drives nursing action. It encompasses perceptions and intellectual processing of information through mental operations of reasoning, resulting in appropriate actions. An instructional method, entitled the Critical Difference Assignment, aimed at developing clinical judgment has been developed and piloted at a southwestern university. This instructional method requires students in small groups to engage in intellectual processing of case study information using mental operations of reasoning to discriminate between two case studies through a process of comparing and contrasting the data.

The educational needs of 21st century nurses demand fundamental change within nursing education to prepare graduate nurses for the ever-changing landscape of health care (Benner, Sutphen, Leonard, & Day, 2010). Nurse educators are faced with the challenge of developing and evaluating learning methods that promote knowledge acquisition, problem solving, and the development of clinical judgment (Del Bueno, 2005; DeMarco, Hayward, & Lynch, 2002). Benner, Tanner, and Chesla (1996) used the term clinical judgment to refer to the ways in which nurses come to understand the problems, issues, or concerns of patients; and to attend to salient information and to respond with deliberate decision making and competent performance. Tanner (2006) described clinical judgment as an interpretation or conclusion about a patient’s needs, concerns, or health problems and the decision to take appropriate action. It is a complex process involving an understanding of not only the pathophysiological and diagnostic aspects of a patient’s clinical presentation, but also the patient’s response to their illness (Tanner, 2006). Clinical judgment is at the heart of decision making and drives nursing action. It encompasses perceptions and intellectual processing of information through mental operations of reasoning, resulting in appropriate actions (Phaneuf, 2008).

According to Murphy (2004), clinical judgment develops following a novice-to-expert path as the practitioner is able to (1) assess patient problems or needs, (2) analyze data accurately, and (3) identify and frame problems within the context of the individual’s environment. Banning (2008) stated that clinical judgment requires clinical reasoning skills to evaluate available evidence to enhance problem solving. The use of reasoning skills can be viewed as a multidimensional cognitive process that uses formal and informal strategies to assemble and analyze patient information for the purpose of evaluating its significance and contribution to patient care (Banning, 2008). The challenge for educators today is to create meaningful learning experiences capable of constructing knowledge while providing strategies to cultivate reasoning skills for the purpose of developing clinical judgment.

Overview of the Instructional Method
An instructional method, entitled the Critical Difference Assignment (CDA), aimed at developing clinical judgment has been developed and piloted at a southwestern university. This instructional method requires students in small groups to engage in intellectual processing of case study information using mental
operations of reasoning to discriminate between two case studies through a process of comparing and contrasting case study data. By design, the case studies have similar presentations yet different unknown pathophysiologies. Benner et al. (1996) advocated for the teaching of clinical judgment by promoting the advancement of analytical thinking associated with “recognizing how a patient is similar/dissimilar to others in the patient population (e.g., by health problems, culture, etc.)” (p. 324).

After identifying each pathophysiology through a process of analyzing and comparing signs and symptoms, laboratory findings, and diagnostic study results, students develop an understanding of the critical difference between the two case studies. The assignment concludes with students developing an appropriate plan of care for each case study patient on the basis of case study data similarities and dissimilarities.

Companion case studies are written by faculty to provide students with the necessary information to facilitate discrimination between two seemingly similar patient presentations. Companion case studies can be described as case studies that have been selected and paired based on similar presentations (Table 1). Students are required to delve deeper to uncover the critical differences between the case studies through an in-depth analysis of the data. Each case study provides students with the following information: detailed history; physical assessment findings including vital signs; laboratory results; diagnostic study results; and current medications.

Case-based instruction is pedagogy of contextualization used to produce learner understandings. It is a teaching strategy that allows learners to actively solve complex problems that mimic real-world clinical practice but in the safety of a nonclinical environment. This approach enables learners to integrate and apply developing clinical knowledge and skills while transferring knowledge from the clinical setting to the classroom and vice versa (DeMarco et al., 2002; Snyder & McWilliam, 2003). Based on real-life situations, case studies require the learner to analyze complex situations, make informed decisions, and predict outcomes using the same approach as practicing professionals in authentic environments (Snyder & McWilliam, 2003; Stepich, Ertmer, Lane, 2001).

Description of the Instructional Method

The CDA is completed by evaluating information obtained from two case studies describing patient presentations (i.e., clinical manifestations, laboratory results) which, from the outset, seem similar but are based on unique pathophysiologies (Table 2; available as supplemental material in the PDF version of this article).

Students work in small groups to unpack case study information for a deeper analysis of data and for determining appropriate interventions. Learning within the CDA is embedded in a social experience (three to four students per group) where students’ thoughts, perceptions, and existing knowledge may be challenged through collaborating with fellow students. Through collaboration, learners share knowledge and resources to produce outcomes more complete and robust than would be created by an individual learner working alone (Johnson, Johnson, & Stanne, 2000). The expected outcomes of collaborative learning include learners being able to think for themselves, think with others, investigate, share information, and make assessments about information (Johnson et al., 2000). This process mirrors the collegiality required in the current workplace in nursing (i.e., working in small groups to solve problems).

Unpacking is described as the process of breaking down case study information into individual pieces of data for further analysis, comparable to the unpacking of clinical narrative information described by Benner et al. (1996). Clinical narratives are stories written by practicing nurses capturing practical clinical reasoning as it occurs in transition. Using real-life clinical situations aids the practitioner in developing a sense of whether patients are doing better or worse, of recognizing similarities and differences, and of participating in common meanings and practices (Benner et al., 1996). This requires an unpacking process capable of revealing meanings, concerns, and interpretations embedded in the clinical story. A similar process designed for this project provides students the opportunity to consider each piece of data individually and its effect on the larger picture described in the case study. Students work together to unpack and organize large volumes of case study data into understandable data units—much like the approach of gathering and organizing data from a patient chart in preparation for a clinical experience. The data units are then compared to the expectation of normal, revealing the presence of abnormalities. Normalizing the data units requires an evidence-based approach, propelling students into the most current literature involving pathophysiology, physical assessment findings, and laboratory results and diagnostic study results. After the unpacking process is complete, individual pieces of data are organized according to similarities and differences, whether they are subjective or objective, and normalizing by comparison to expected findings. It is important for students to have a clear understanding of the individual patient situation associated with each case study before beginning the process of comparing the two case studies.

The next step in the CDA is the analysis of data. In this step, students organize the data units to create an inventory of similar and dissimilar data. After the data are broken down to smaller data units, a clinical reasoning process using analogy begins. Reasoning by analogy consists of “abstracting details from a particular set of problems and resolving structural similarities between previously distinct problems,” thus creating the essential platform for analogical learning to occur (Lowe, 2004, p. 1). Learners can then create patterns of recognition to compare and
contrast similar situations (Holyoak & Thagard, 1997). Comparing and contrasting is a teaching—learning strategy using analogical reasoning to promote higher-ordered thinking skills, such as analysis. According to Bloom’s taxonomy, the analysis level of the cognitive domain uses compare and contrast instructional strategies to identify a learner’s ability to distinguish, classify, and relate evidence of a statement or question (Atherton, 2009).

Students use the data units as clues to construct an in-depth investigation to determine, using evidenced-based resources, the pathophysiology of each case. After the pathophysiology is determined for each case, students develop a detailed description of the disease process in a text format. Then, each piece of case study data from the inventory of similar and dissimilar data (relating to each unique disease process) is integrated into the body of the detailed disease description by italics or bolding (Table 3; available as supplemental material in the PDF version of this article).

This step of the CDA provides integration of case study data into the disease process, giving students a precise understanding of the patient’s status within the disease process, based on information provided in the case study (history, assessment data, laboratory results, diagnostic study results, and medications). This step concludes with students determining the critical difference between the two case studies, laying the foundation for planning of care (Table 4; available as supplemental material in the PDF version of this article).

The critical difference is determined through a group effort to research the various components of the case study data by referencing textbooks (pathophysiology, medical—surgical, laboratory and diagnostic study, nursing diagnosis) and evidence-based online sources. The students hash out the critical difference between the two case studies and then begin the process of planning care for the patient described in each case study. This is achieved by determining the nursing diagnoses with interventions appropriate to both cases, based on identified similarities, and by determining the appropriate nursing diagnoses with interventions unique to both cases, based on identified differences (Table 4).

After the assignment is completed, each group member reflects individually on his or her own learning and the application of knowledge gained by the assignment. Reflection is the process of looking back on an experience and evaluating it for meaning. Reflecting on an experience alters existing understandings and generates new understandings, thus linking new experience to existing knowledge (Murphy, 2004). Development of clinical judgment is the ultimate goal of focused reflection. Students participating in focused reflection are more likely to be actively engaged in learning, able to process information at higher cognitive levels, and demonstrate improvement in theory-to-practice integration (Murphy, 2004). Excerpts of students’ focused reflections are provided in Table 5 (available as supplemental material in the PDF version of this article). Incidentally, over the course of the semester, the students created a moniker for the learning assignment—“CDiff.”

The students’ completed work is graded using a rubric that awards points from each step involved: assessment, analysis, planning, and focused reflection. Based on the rubric, the analysis step has the potential for the greatest number of points to be awarded. This section of the CDA integrates the students’ understanding of the patients’ disease processes within real-life scenarios and sits at the core of the assignment. The student groups of three to four members receive a group grade for their efforts.

Conclusion

Higher-ordered thinking skills and concept building are required for nursing students to understand the application of knowledge in practice. Identifying the critical difference between two case studies gives students the opportunity to compare and contrast patient care situations while describing the care requirements for each, using a four-step process: assessment, analysis, planning, and focused reflection. Case studies are designed to place the learners in an open-ended, learner-centered investigation. Learners use case studies to develop a meaningful understanding of nursing concepts through application and problem solving. The goal of the assignment is to move students’ understanding of patient care situations in context of specific pathophysiology into higher-ordered thinking, thus contributing to the integration of learning and the development of clinical judgment. The analysis level of cognition required in the CDA exceeds prior learning expectations of application based on Bloom’s taxonomy. Compelled early in the nursing curriculum to function as team members, learners set in motion a framework on which to construct future professional relationships. Further study of the CDA is encouraged, exploring the usefulness of the CDA in other schools of nursing and learning environments. Expanding or modifying this instructional strategy to include other content, innovations, or learning environments such as online education should be explored.

References


