Navigating the Move to Concept-Based Curriculum

Part 1: Designing a Concept-Based Curriculum

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Background

The radical call for transformation in the delivery of nursing education has been a priority topic of discussion over the past decade. To support this call, employers who hire nursing graduates have requested that students be better able to critically think, exercise clinical judgment, and apply theory to practice when they enter the nursing workforce (Morrell & Ridgway, 2014). Benner, Sutphen, Leonard, and Day (2010) reported that students are able to critically think and clinically reason when nursing content is facilitated through active participation and when didactic material aligns with clinical experience and application. These findings have led to the expanded restructuring of nursing education to include concept-based curricula designed to improve the student's ability to apply content knowledge to practice (McGrath, 2015; West, 2016).

What Is Concept-Based Learning?

According to Erickson (2008), concept-based instruction is focused on developing and integrating broad ideas and principles to enhance student learning by bringing real-life meaning to content-specific knowledge and skills. Concept-based instruction creates connections to students' prior experience, facilitates deeper understanding of the content, and is an ideal method to reduce content saturation by organizing knowledge into broader ideas or concepts. Concept-based instruction in nursing education is motivated by several factors including an explosive increase in health information, an inability of faculty to adequately impart instruction on all aspects of nursing practice, and the need to implement effective teaching strategies to promote clinical reasoning and judgment, priority setting, and ethical decision-making. Conceptual learning encourages students to build upon current knowledge and familiar experiences, relate these experiences to learning new material, and integrate new learning into clinical practice.

Concept-Based Curricula in Nursing Education

A concept-based curriculum (CBC) is a comprehensive program of study centered on nursing concepts, applying evidence-based exemplars in the context of patient care, and providing a foundation for learning about nursing and nursing practice from a scientific and evidence-based perspective (Billings & Halstead, 2016). The conceptual approach connects content, skills, and actions throughout the life span, across the wellness–illness continuum, and in a variety of healthcare settings (Billings & Halstead, 2016). Designing and implementing a CBC is a comprehensive process that includes selecting concepts, identifying exemplars, and teaching conceptually using active learning strategies. Program developers often believe that the arduous work is done once the concepts and exemplars are selected and mapped across the curriculum within a new course of study. However, successful execution of a CBC requires

Key Messages

Designing and implementing a CBC is more than identifying concepts and exemplars and applying them to courses in a curriculum. It is a comprehensive process involving a new way of educating nursing students, promoting greater understanding of concepts and their application to clinical practice.

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educators to teach conceptually using active learning strategies to enhance student understanding and clinical application. This White Paper describes how to design a CBC. A subsequent White Paper will focus on implementing and executing the key elements of a CBC, with special consideration for achieving faculty buy-in because moving to a CBC requires a new way of delivering content that may result in faculty and student resistance to the curricular change.

What Are Concepts?

Giddens, Caputi, and Rogers (2015, p. 5) define concepts as "an organizing idea or mental construct represented by common attributes." Erickson and Lanning (2014) describe concepts as being timeless, universal, and able to facilitate broader connections of knowledge and skills to clinical practice, across the life span, and within various healthcare settings. Concepts correlate knowledge, skills, and competencies across various contexts that place the focus on deep, contextual learning instead of memorization of facts.

Selecting Concepts for a Curriculum

Faculty often want to move immediately to the concept selection phase. Development of concept categories is important prior to selecting concepts since intentional category selection provides an organizing framework for the curriculum and establishes clear parameters for the placement of concepts into each category (Giddens et al., 2015). Many nursing programs consider using the nursing paradigm for their categorical structure. Categories that follow this paradigm are:

- Health
- Client Attributes
- Healthcare Settings
- Professional Nursing

Once the categories and parameters are established, faculty need to identify essential nursing concepts they believe should be included in the curriculum. Consider choosing a core group of faculty to make the initial selections to bring back to the whole group for discussion and final agreement.

Two common questions asked when implementing a CBC are, how many concepts are necessary, and how many are too many? The number of concepts to include is unique to the individual program, though 35–55 concepts are most common.

When identifying and selecting concepts, characteristics that clearly differentiate one concept from another is an important consideration. For example, the term footwear is a concept with characteristics that distinguish it from the term coat. They are both forms of a broader category of clothing and interrelate in that sense, but are distinctly different in their purpose. Now, consider the concepts of gas exchange and mobility. They are both part of the broader category of health and interrelate, but are distinctly different in their definition and defining characteristics.

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Let us consider some basic concepts. Open any fundamentals book to the table of contents and view the chapter headings. The headings generally include concepts considered integral to the practice of nursing. This may be a good place to begin. Additional resources for selecting concepts include:

- Giddens, *Concepts for Nursing Practice, Second Edition* (2017)
- QSEN Competencies (www.qsen.org)
- Massachusetts Nurse of the Future Competencies (www.mass.edu/nahi/projects/nurseoffuture.asp)
- NLN Competencies (www.nln.org)
- North Carolina Curriculum Improvement Project (http://adn-cip.waketech.edu)
- New Mexico Nursing Education Consortium (www.nmnec.org)

Once categories are defined and concepts selected, placing them in a matrix format is one method of organizing the information (see Figure 1). Consider the nursing concepts of *gas exchange*, *safety*, *culture*, and *communication* as they might be assigned to the categories identified previously.

Health	Client Attributes	Healthcare Settings	Professional Nursing
Gas Exchange	Culture	Safety	Communication

Figure 1: Organizing defined categories and selected concepts

What Are Exemplars?

Giddens et al. (2015) describe exemplars as the most common health problems that provide exemplary examples to represent concepts during the learning process. The exemplars in a CBC should represent health alterations across the life span, healthcare continuum, and in a variety of patient care settings. When selecting exemplars; it is important to select a limited number and choose exemplars that best represent the concept to avoid content saturation. Consider selecting exemplars that represent the highest incidence and prevalence from sources such as the Centers for Disease Control and Prevention (CDC) (www.cdc.gov), the American Cancer Society (www.cancer.org), and the National Institutes of Health (www.nih.gov).

Exemplars help to reduce content overload by focusing on evidence-based, relevant nursing care rather than yielding to the temptation to teach all possible content in each course. Additionally, exemplars with associated concepts help maintain a nursing focus versus a medical model approach.

Selecting Exemplars

Faculty are typically subject matter experts in their area of instruction and want to impart their extensive knowledge to their students. This desire can lead to an impasse as individuals cling to their sacred cows of coveted areas of curricular content. Exemplars provide contextual application of knowledge gained in the classroom and reinforced in the clinical setting. Careful selection of exemplars ensures that health alterations students are exposed to in the clinical setting will facilitate building meaningful cognitive bridges (Giddens et al., 2015). Exemplar selection should be evidence-based using incidence and prevalence data, both nationally and locally. Figure 2 displays several sources for exemplar selection.

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Nationally	Locally
• CDC • IOM • NIH • Healthy People • National Institute of Mental Health • National Center for Health Statistics • American Heart Association • American Cancer Society • American Diabetes Association	• ER visits/admissions at major hospitals • Local health department • State records

Figure 2: Sources of incidence and prevalence

Selection of exemplars for each concept should represent health alterations across the life span, with a range in complexity, and found in a variety of healthcare settings (see Figure 3). Exemplars for the concept of gas exchange, for example, might begin with chronic obstructive pulmonary disease (COPD) in an elderly adult living in a long-term care facility during the first term of the program. Advancing to the second term might view asthma in a young child and compare it to asthma in an adult in the community health setting. In the third term, respiratory syncytial virus (RSV) might serve as an exemplar when considering the acute care of an infant on the pediatric unit, and adult respiratory distress syndrome (ARDS) in an adult admitted to the intensive care unit during the final term.

Gas Exchange			
COPD	Asthma	RSV	ARDS

Figure 3: Selecting exemplars for a concept

Concept Analysis

Completing a concept analysis for each concept is a key element in developing the CBC curriculum and needed to clarify the definition, characteristics, and application of the concept. A concept analysis further serves to validate the evidence supporting the identified concept, related concepts, the meaning of concepts as they relate to and influence other concepts, and selected exemplars which are common examples or representative illustrations. Giddens et al. (2015) state that it "should be viewed as a useful step in a larger process of concept development" (p. 47). The concept is deconstructed to identify those attributes and characteristics that make it unique as well as how it relates to other concepts. This relationship is the catalyst for deeper understanding and application in the delivery of patient-centered care. A standard template for completing concept analyses promotes consistency among faculty as the CBC is developed. Components of a concept analysis should include, at a minimum, a definition, defining characteristics, related concepts, and exemplars (see Figure 4).

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Concept Analysis: Gas Exchange
Definition: The process by which oxygen is transported to the cells and carbon dioxide is removed from the cells (Giddens, 2017, p. 178)
Defining characteristics: • Oxygen saturation is between 95–100% • Respirations 12–20 (adult); 30–40 (newborn) • Breathing regular • Breath sounds clear upon auscultation • Extremities noncyanotic
Related concepts: • Perfusion • Acid–base balance • Mobility • Anxiety • Nutrition
Exemplars: • COPD • Asthma • RSV • ARDS

Figure 4: A sample template for concept analysis of gas exchange

Summary

Development of a CBC is a multifaceted process that involves a paradigm shift from the traditional content-based format. Its initial construction involves identifying critical nursing concepts and evidence-based exemplars, and completing concept analyses that define and describe those critical nursing concepts. Making the move to a CBC is a complex process, but also a creative process that allows educators to step outside of traditional boundaries and create something unique and meaningful. Once this phase is complete, the focus shifts to the implementation phase. Part 2 of Navigating the Move to a Concept-Based Curriculum will focus on achieving student and faculty buy-in and execution of the CBC through the utilization of active learning strategies that support conceptual learning in both the classroom and clinical environments.

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