Creating Curricular Opportunities for Knowledge Synthesis

Knowledge synthesis is defined as the integration of findings from one study into a larger understanding—i.e., situating research findings within the context of knowledge about the topic (Grimshaw, 2010). Knowledge synthesis is a key systems thinking tool for managing complexity in health care systems (Swanson et al., 2012). With nursing practice situated in the context of a rapidly expanding base of knowledge about complex systems, faculty must help students to learn synthesis processes that can be used for education, practice, and research.

Curran et al. (2014) outlined principles for knowledge synthesis that include connecting a multidisciplinary team, developing questions in collaboration with knowledge users, using a systematic method for answering questions, and involving knowledge users in an integrated knowledge translation approach. Curricular knowledge synthesis experiences can follow a similar model. Using a team-based approach, students can refine the questions most relevant to the individual and the group. Structured and more free-form activities can be used to explore connections between ideas. Student teams help clarify topics, support exploration of new learning processes, challenge each other, and develop plans for use of their new understandings. By creating opportunities for students to purposefully explore connections among ideas, faculty are guiding synthesis processes.

Starting with the first curricular experience at all program levels, students should be encouraged to think about how information can be applied in different ways in different settings. The complexity of our environment requires a nearly constant synthesis of ideas as we explore application and integration of new information. In an educational setting focused on synthesis, students identify and select essential concepts from the curriculum and then aggregate ideas. Knowledge is created through inquiry and synthesis, before being available for use in practice (Straus, Tetroe, & Graham, 2011).

As part of a continuous improvement process, the University of Kansas School of Nursing faculty recognized two areas of the school’s PhD program that needed change. Opportunities for synthesis in the curriculum were desired, as were revisions to the comprehensive examination process. Two new courses, Synthesis I and Synthesis II, were developed to follow the first and second halves of the curriculum, respectively. Two qualifying examinations (QE I and QE II) were developed to replace the single written/oral comprehensive examination that previously had been taken at the end of course work. In the new model, the QE I is taken at the end of Synthesis I, and the QE II is taken after Synthesis II. To ensure that students are prepared to advance in the curriculum, each Synthesis course and QE must be successfully completed before moving to the next step—the second half of the curriculum or dissertation.

These simple changes have transformed the PhD program. Previously, students completed all coursework and then independently attempted integration of course content before taking the comprehensive examinations. Now, students have structured learning experiences to ensure synthesis across all courses. Learning is verified through successful completion of the QEs. Using a synthesis-focused curricular model and carefully designed course work, students are supported in these intellectual bridging efforts.

During each Synthesis course, faculty create purposeful learning experiences for building conceptual associations. These activities give students an opportunity to make new connections between key concepts in the curriculum. Synthesis I begins with a brainstorming session to identify student confidence in, or lack of conceptual clarity about (concerned), content from the first half of the curriculum. The student group keeps the “confident” and “concerned” lists prominently displayed during the week, moving items as needed to reflect new and evolving understandings.

Another Synthesis activity is called “Reflecting & Projecting.” Students create a two-by-two matrix on large paper and draw images of themselves as envisioned 5 years ago, last year, currently, and 5 years into the future. Bowman (2007) emphasized the importance of using a variety of activities in synthesis efforts, including using charts, forms, and figures to help students visualize how ideas overlap. This mapping activity helps synthesize coursework in professionalism, scholarship, and leadership.

Knowledge synthesis can serve as a key curricular strategy to help students access, aggregate, and use knowledge in a rapidly changing research and practice environment. Our experience with knowledge synthesis in the PhD program has led to an emphasis on synthesis at all levels of the curriculum. Doctor
of Nursing Practice students are encouraged to use e-portfolios to organize information across courses according to program objectives. This strategy helps students to appreciate curricular complexities as they prepare for comprehensive examinations. Master’s students create matrices for literature review and analysis to better understand the knowledge translation gap between research and practice. Baccalaureate students have capstone experiences during the final semester of study, to help synthesize clinical and didactic knowledge before taking NCLEX-RN® and moving into practice. In an educational system, promoting knowledge synthesis through guided learning activities can help students to manage the ever-increasing complexity of a nursing curriculum and to prepare for the complexity of the evolving health care system.

References