Creating Cohesion Between the Discipline and Practice of Nursing Using Problem Based Learning

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Abstract

For at least four decades there has been concern about the discontinuity between the discipline and practice of nursing. The learning traditions in nursing, including the traditional organization of professional educational curricula with an emphasis on general education, could be contributing to this discontinuity. Problem Based Learning (PBL) has been identified as one way to facilitate greater cohesion between the discipline and practice of nursing. Nursing learners exposed to PBL are challenged to achieve professionally desired liberal learning outcomes and acquire knowledge and skill in the discipline of nursing by encountering key professional practice situations as the stimulus and focus of their classroom learning activity. By combining reflection on existing knowledge essential to understanding the situation with research for new knowledge, PBL reflects the process of knowledge generation. Through PBL learners can achieve a deeper understanding of nursing as a discipline, the relationship of nursing to other disciplines and cohesion between the discipline and practice of nursing.

KEYWORDS: discipline, practice, nursing education, problem based learning

The nature of the relationship between a discipline and its practice is central to its ability to actualize its professional mandate. For at least four decades there has been concern about the discontinuity between the discipline and practice of nursing (Conant, 1967; Clark, 1986; Fealy, 1997; Landers, 2001; Rodgers, 1991; Wong, 1979). In part, forces external to the control of the profession foster this discontinuity. The proliferation of new knowledge, technological change, and the demand for greater professional accountability, are all changing the nature of professional practice.

Within the profession, a number of fundamental forces associated with professional education have been identified as contributing to the discontinuity between the discipline and the practice. These forces include the academic culture of educational institutions, the dominance of research as a valued faculty activity, and the traditional organization of professional education curricula (Cavanaugh, 1993; Schön, 1995). Of the three forces, the organization of the professional nursing undergraduate curriculum is the one that is under the direct control of professional nursing education faculty.

The organization of professional nursing education by academic discipline could be more successful in facilitating the development of reflective, flexible, and integrated learning processes that learners need to function effectively in complex, dynamic, professional practice situations in which they will find themselves upon graduation (Cavanaugh, 1993; Schön, 1995; Tompkins, 2001). There is general consensus that new models of nursing education are necessary for nurses to integrate knowledge and develop methods of inquiry. Problem-based-learning, the most promising approach to facilitate cohesion between the discipline and practice of nursing (Alavi, 1995; Barrows, 1983; Creedy & Hand, 1994; Rideout, 2001), fosters the development of nursing knowledge and methods of inquiry. This approach utilizes authentic situations encountered by professional practitioners as the stimulus and focus of all student classroom learning activities. In this paper, the utility of using PBL to create cohesion between the discipline and practice of nursing will be described.

DISCIPLINE OF NURSING

The broad aims of a discipline are to specify its proper place in society, to define the unique perspective and the parameters of knowledge required for its professional practice, and to identify modes of inquiry used to seek and establish that knowledge (Donaldson & Crowley, 1978; Schwab, 1962). Disciplines are primarily concerned with knowledge development relevant to practice: knowledge

that links the past with the present and the future (Donaldson & Crowley). The distinguishing characteristics of a profession include possessing extensive and often abstract knowledge not derived exclusively from the discipline, a period of concentrated education, and a practice component (Toulmin, 1972). Therefore, nursing as a professional discipline must explicate its historical, philosophical, social, research and learning traditions in order to establish the connections between nursing and other disciplines and to provide a meaningful context for methods of inquiry and content areas for nursing practice. The unique perspective of a discipline is exemplified by its conceptual structures that are characterized by substantive and syntactical components (Donaldson & Crowley; Schwab).

Substantive structure

The substantive structure refers to the concepts, theories and interrelationships that describe the unique disciplinary phenomena of interest (Donaldson & Crowley, 1978). This mental image of the discipline delineates the boundaries related to the phenomena of interest, and provides direction to the search for knowledge in the discipline. The foundational component of the structure of a discipline is the metaparadigm that is comprised of the global concepts that identify the phenomena of interest to the discipline and the global propositions that indicate the relationships among the concepts (Fawcett, 1994). The functions of the metaparadigm are to summarize the discipline's intellectual and social missions, and identify the parameters of the subject matter. The phenomena of interest to nursing are represented by four central concepts: person, environment, health and nursing. The relationships among these concepts have been described in four propositions (Donaldson & Crowley; Fawcett). The first proposition links person with health and suggests that the discipline of nursing is concerned with the principles that influence the life processes, well-being and health of human beings. The second proposition refers to the interaction between the person and environment. It suggests that the discipline of nursing is concerned with patterns of human behavior as individuals interact with the environment during daily life events and critical life situations. The third proposition connects health and nursing and states that the discipline of nursing is concerned with the processes and nursing activities that positively influence health status. The fourth proposition links all four concepts and declares that nursing is particularly concerned with the health of humans as they interact with their environments. Using real nursing practice situations as the focus of learning in PBL continually provides the context for ongoing discussion about the conceptual links between person, environment, health, and nursing.

The interrelationships among the concepts considered important to nursing

as a discipline have been abstracted to formulate conceptual models. Models are mental images of the metaparadigm of nursing and provide a frame of reference to facilitate organization of the professional nurse's thinking, observing and interpreting (Fawcett). In addition to reflecting the nurse theorist's view of the metaparadigm, nursing models also reflect the social and cultural milieu of the time (Meleis, 1997).

All systematic nursing inquiry requires a conceptual model to guide observations, and provide a way of interpreting and organizing knowledge (Fawcett, 1994; Schlotfeldt, 1975). The way concepts of a particular nursing model interrelate not only shapes the phenomena of interest but also governs the questions that will likely be asked in professional nursing practice. Although nursing models are characterized by different points of emphasis, they are all consistent with the general metaparadigm of nursing. As such, they provide direction for generating nursing knowledge (Fawcett).

Theories are less abstract than models, vary in scope, and are comprised of relatively concrete and specific concepts and propositions that aim to account for or organize some aspects of the phenomena. The purpose of theory is to describe, explain, predict and control particular phenomena of interest to nursing. The broadest theories are grand theories comprised of general abstract concepts and propositions that cannot be generated and tested empirically (Fawcett, 1994; Meleis, 1997). Mid range theories are narrower in scope, limited in perspective and encompass fewer concepts (Liehr & Smith, (1999). Mid range theories focus on areas of nursing practice considered relevant and socially significant (Meleis). The concepts and propositions that comprise mid range theories are empirically measurable. An inductively developed theory must be validated to determine its generalizability whereas a theory that originates through deductive inquiry must be validated to ensure relevance to practice (Sarter, 1990). Although even mid range theory cannot be directly applicable to nursing practice, it can be useful in understanding situations and guiding thinking and decision making about nursing activities. Theory then, guides research and practice, and theory is generated and tested through practice. Through discussion of real nursing practice situations, PBL learners can be encouraged to identify existing nursing theory, explore how it guides nursing research and practice as well as identify when existing practice is not guided by theory or research.

Syntactical structure

The syntactical structures of a discipline are the methodologies for inquiry that are compatible with the discipline's epistemological perspective (Donaldson

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& Crowley, 1978). Given that knowledge can be revealed in various ways, the syntactical structure refers to the discipline's accepted standards for seeking and verifying knowledge. The nature of knowledge required for nursing is determined by the goals of nursing practice and the kinds of issues that the discipline chooses to address (Carper, 1978). In reviewing nursing literature Carper discovered that there are four patterns of knowing that nurses have valued and used in practice. These ways of knowing include empirics, esthetics, ethics, and personal knowing. Each way of knowing has a different purpose, expression, and process for knowledge development and evaluation (Chinn & Jacobs, 1987).

Empirics are generally associated with the science of nursing and are based on the assumption that others can verify the truth of a proposition (Carper, 1978). The processes involved in creating empiric knowledge in nursing include describing, explaining or predicting. The credibility of empirics is determined by methods of validation and seeks to answer: "what is it and how does it function?" (Allen & Jensen, 1996; Chinn & Jacobs, 1987). Johnson (1991) describes nursing as a science that is concerned with seeking knowledge for a practical end (practical science) as opposed to a science concerned only with seeking knowledge (basic science) or one concerned with only using the knowledge already developed (applied science). When the science of nursing is conceptualized as practical, strong links are established between the art and science of nursing in that the scientific principles of nursing practice can provide the basis of nursing art or activity.

Esthetics generally refers to the art or act of nursing (Carper, 1978). Johnson (1991) identifies the need for prescriptive truths to ground decision-making associated with nursing art or activity as the link between nursing science and art. Esthetics includes comprehending the complexity of a situation to determine when the prescriptive truths need to be contextually adjusted to match the unique nursing situation (Johnson). It also includes understanding the meaning underlying an encounter with another person(s). This understanding of meaning influences the choice of nursing activity and is often reflected in the activity itself. Esthetic knowing involves the processes of engaging, intuiting, and envisioning and is made visible through attitudes, actions, and interactions of the nurse with others. The truthfulness of esthetic knowledge is determined through criticism that seeks the relative truth and answers "what does this mean?" (Allen & Jensen, 1996; Chinn & Jacobs, 1987).

Ethics focuses on matters of obligation or what ought to be done (Carper, 1978). It involves understanding the various philosophical perspectives of what should be done, what is good and right, and what is responsible. It is more than

just knowledge, however, it is making judgments in the face of conflicting values, norms, or principles where the choice may be one of imperfect alternatives. Processes of ethical knowing include clarifying, valuing, and advocating and yield expressive forms of ethical theory, principles and guidelines. Ethical knowledge provides insights about which choices are possible and why. The method of determining credibility of this knowledge is through justification and answers the question "is this responsible and just?" (Allen & Jensen, 1996; Chinn & Jacobs, 1987).

Personal knowing refers to the experience of becoming aware of oneself as a person (Carper, 1978), and as a professional nurse. It is through knowing the self that one is able to know another human being as a person. The creative processes involved in personal knowing are opening, centering and realizing. The credibility of personal knowledge is determined through reflection and answers the questions "do I know what I do and do I act based on what I know?" (Allen & Jensen, 1996; Chinn & Jacobs, 1999). Each pattern of knowing is necessary and contributes an essential component to the practice of nursing. Combined, the patterns provide direction for developing comprehensive nursing knowledge. As the context of each nursing situation in PBL is discussed, learners can be encouraged to identify existing nursing knowledge and patterns of knowing used to generate the knowledge. Through small group interaction and self-evaluation, each learner's personal knowing can be enhanced.

PRACTICE IN RELATION TO THE DISCIPLINE

The professional practice of nursing entails providing health care to clients, educating new practitioners, conducting research, and ensuring that the significance of nursing to society is maintained and appropriately interpreted to the public. Underlying professional nursing practice is knowledge that is foundational to the practice. Although it is the discipline of nursing that defines the parameters of knowledge development and the methods of inquiry used to seek and verify knowledge, it is nursing theory that guides nursing practice through enhanced thinking and understanding of situations encountered in practice. The nurse who is engaged in theory-based practice will be able to describe, explain, predict, and control nursing events and initiate preventative action in a purposeful way (Dale, 1994). Practice, in turn, contributes to nursing theory development through the generation of ideas developed in the context of nursing practice, a setting with rich ideas generated by nurses through observing and questioning practice. However if nursing practice is allowed to become routine, nurses may fail to question practice and ignore or fail to recognize phenomena that do not fit categories of theory currently in use (Clark, 1986;

Powell, 1989; Schön, 1995).

Despite the intended relationship between the discipline and practice of nursing, a discrepancy exists between what the discipline represents and what practice reflects (Dale, 1994; Grossman & Hooton, 1993). The discipline generally represents a comprehensive approach to facilitating the health of individuals, families, and communities as they interact with their environments (Donaldson & Crowley, 1978; Fawcett, 1994). Approaches to nursing practice, on the other hand, tend to be grounded in the nursing process, a process that Field (1987) believes negates the need for theory and subsequently, conceptual links to the discipline. Knowledge in the practice arena often tends to be procedurally rather than conceptually grounded (Dale). Value in nursing practice is often placed on measurable outcomes rather than on an achievement of greater understanding of the situation, imperfect outcomes, and the ability to tolerate ambiguity. This discrepancy is succinctly captured by learners who state "what we learn in the classroom and what we learn in practice is not the same" (Corlett, 2000; Landers, 2001). These statements suggest there is a major discontinuity between the discipline and practice of nursing and that nursing education assumes a key responsibility for this discontinuity.

Currently, the primary focus of universities is on learning and developing theory; the concern of practitioners is theory utilization to contribute to client health (Grossman & Hooton). Nurse educators need to examine the learning traditions of nursing. It is imperative that graduates of nursing programs recognize the contribution of the discipline to nursing practice and the contribution that nurses in practice can make to the development and testing of nursing theory for the discipline.

PROFESSIONAL NURSING EDUCATION

In addition to the nursing process, professional nurse educators have traditionally valued the notion of liberal learning. Unquestionably, professional nursing education and liberal education programs share several common goals that might be designated as liberal education outcomes of professional study (Armour & Furhmann, 1993; Stark & Lowther, 1989). Those outcomes include: communication, contextual, and adaptive competence, critical thinking, aesthetic sensibility, professional identity and ethics, leadership capacity, scholarly concern for improvement, and motivation for continued learning. In addition, professional nursing education prepares graduates with conceptual competence (understanding the theoretical foundations of the discipline), technical competence, and integrative competence (melding nursing theory and practice). Although

professional nurse educators value liberal learning, there is a gap between the rhetoric and the practice. There is an assumption that the goals of liberal learning can be achieved by mere exposure to general education and liberal arts courses (Armour & Furhman; Stark & Lowther).

Nursing students typically progress through a series of general education and liberal arts courses; each one addressing a specific body of knowledge and each taught as if they were preparing to become specialists in the area (Cavanaugh, 1993). The needs for general education are often defined in terms of coverage and breadth; that is, study of a variety of disciplines is associated with the description of a well-educated individual. Mere exposure to general education courses, however, is no guarantee that learners will achieve any liberation in thought. While general education clearly contributes to liberal learning, the two are not synonymous. Coverage and breadth are valued as aspects of liberal learning but they are not defining characteristics (Armour & Fuhrmann, 1993). Liberal arts on the other hand, are considered academic disciplines that develop general intellectual ability and that deal in a general way with culture. For example, English, history, philosophy, and political science are often classified as liberal arts. Liberal learning makes use of all these disciplines but goes far beyond the confines of any one grouping. It is not defined by or confined to particular disciplines.

A nursing program founded on a series of general courses or liberal arts courses does not necessarily facilitate the liberal education outcomes of professional study. Liberal education outcomes of professional nursing education are probably best achieved through integrative study within the context of the discipline (Amour & Fuhrmann, 1993; Cavanaugh, 1993; Schön, 1995). Furthermore, a program structure based on a series of courses creates barriers to theory integration since assessment focuses on short-term knowledge acquisition rather than long-term understanding. The organization of the curriculum in this manner contributes to the discontinuity between the discipline and practice of nursing (Cavanaugh; Schön).

In an attempt to create some cohesion between disciplinary knowledge acquisition and application to professional nursing practice, nursing curricula typically incorporate experiential learning in the form of clinical practica. These experiences are intended to provide students with opportunities to apply theoretical knowledge, practice technical skills, and generally become socialized into the profession of nursing. These are comprehensive goals for experiences provided toward the end of each year or intermittently throughout the program.

Professional nursing education programs that have addressed the concern about the discontinuity between the discipline and its practice have significantly modified their approaches to learning. These programs have integrated the content from the sciences and humanities and replaced or reduced the information giving lecture with methods that require students to research, reflect, and critically reflect on real nursing practice situations from the beginning of the undergraduate nursing program. These endeavors include the institution of a PBL curriculum with small group learning and self-directed study (Andrews & Jones, 1996; Creedy & Hand, 1994; Glen, 1994; Heliker, 1994).

PROBLEM BASED LEARNING

Nursing learners exposed to PBL as a curriculum organizer achieve professionally desired liberal learning outcomes and acquire knowledge and skill within the disciplinary domain of nursing by encountering key professional practice situations as the stimulus and focus of their learning activity (Barrows, 1983; Boud & Feletti, 1998). The curriculum is comprised of a series of carefully selected nursing practice situations rather than a series of general, liberal arts and nursing courses. This varies from conventional instructional methodology that relies on the use of professional practice situations as a culminating activity that follows faculty presentation of disciplinary content. In a PBL learning environment, nursing faculty present learners with authentic, contextually rich nursing practice situations before they receive any formal classroom instruction. Students reflect on the content and skills associated with their chosen discipline in a context similar to what they will encounter as graduates in professional practice. They investigate nursing situations, grapple with the complexities of the situation, search for connections across disciplines, and utilize existing and newly acquired knowledge to generate possible outcomes for the situation. When possible outcomes have been identified, learners present, justify, and debate each possibility, searching for the best possible outcome, while developing a tolerance for ambiguity. During the process, learners build substantial knowledge and skill bases within the discipline of nursing and across disciplines through research, reflection, and critical reflection (Williams, 2001). Through collaboration with classmates, learners refine and enhance their knowledge and skills and pose questions for future research.

In a PBL learning environment, students work with nursing practice situations in a way that fosters knowledge, as well as skill acquisition and application congruent with their level of learning. They identify areas of learning that will guide their own individualized study. The knowledge and skills acquired through individual research, reflection, and critical reflection are then discussed in

relation to the given situation, and evaluated for effectiveness thereby reinforcing critically reflective, self directed learning. This new learning is subsequently integrated into the learner's existing knowledge structure. By combining research, reflection, and critical reflection with existing knowledge essential to understanding the situation, PBL reflects the real process of knowledge generation (Alavi, 1995; Williams, 2001). This approach makes no prior commitment to particular subjects or disciplines external to nursing but takes into account whatever will help the professional nurse understand and interact in the situation. Thus learners research concepts from a variety of disciplines, learning how nursing interfaces with other disciplines. Throughout the PBL process, faculty tutors facilitate the development of the learner's reasoning processes, guiding when necessary, and challenging the depth and accuracy of research, understanding, and application of concepts.

Phases of PBL

The first phase of the PBL process involves a small group of six to nine nursing learners and a faculty tutor who discuss an authentic nursing practice situation that has been generated by practicing nurses. The situation may be presented as a video, an audio-tape or a paper scenario with accompanying photos. Students begin by reasoning aloud during discussion of the nursing situation, identifying what they do know based on their previous knowledge, what they do not know, and what they need to know to understand the situation. They formulate explanations about what they think is happening and clarify understanding through negotiation and critique of classmates' comments. Students establish learning goals and create an action plan to meet those goals. With tutor coaching, these activities assist learners to develop the self monitoring skills necessary to identify learning needs by revealing their internal thinking processes. The development of self-monitoring skills is an important part of developing the skills associated with metacognition. It is these skills that contribute to the nursing learners' abilities to be critically reflective, self-directed learners. The following is an example of a situation with which learners might be presented:

> The Durrands (Henri and Madelaine) are an elderly French Canadian couple in their 80s who live in their own bungalow of 60 years. A daughter and a niece who live nearby, help out with shopping and provide dinner for Madelaine and Henri. Madelaine, who is hard of hearing is rehabilitating from a hip replacement of eight weeks ago and Henri, a retired school janitor, is very angry about his week old cataract surgery which has left him with no vision in one eye and 80% vision in his other

eye. He can no longer drive or help Madelaine as much with ADLs. Both Henri and Madelaine have Type 2 diabetes. The Durrands have been referred to you as their case manager in homecare.

Upon examining the case, students might identify the following issues: Madelaine's decreased mobility, Henri's decreased ability to assist Madelaine, Henri's reduced vision and his anger, the question of whether the Durrand's will be able to remain in their own home. They might also identify the following examples of areas for further learning: frail elderly, French Canadian culture, hearing impairments and their management, joint replacement surgery and rehabilitation, cataract surgery and complications, Type 2 diabetes, and community resources. Tutors can challenge learners to critically analyze the situation, identify gaps in their knowledge and pose questions on areas they may lack understanding. For example: "What do you think is going on here? What are your possible explanations for the situation? What do you need to know in order to confirm or reject these explanations? What questions will you ask? What are possible outcomes for this situation?"

During the second phase of PBL, students activate their plans by engaging in self-directed study. They determine how they will learn the knowledge and skills identified and what resources will assist them. Resources can include: texts, journals, non-fiction, poetry, videos, resource people, and agencies. Students are encouraged to explore the literature to determine research evidence that supports various aspects of the situation and where there might be gaps in nursing knowledge related to the situation. In the case of Henri and Madelaine, for example, learners might explore nursing research related to: transitions, coping, preventing complications following eye surgery, influences on functional capacity following joint replacement surgery, resiliency, and social support. If students identify gaps in nursing knowledge, the tutor might ask: "If you had a question about --------, would one nursing model be better than another in guiding your research? How would this research contribute to the development of nursing knowledge?" Guiding questions assist students to develop the research, reflective, and self-directed learning skills that are critical components of professional learning. Students begin to recognize the contributions of different ways of knowing to nursing's knowledge development. While engaged in self-directed learning activities, students actively establish links between nursing theory and practice.

During phase three students apply the information acquired during self-study to the discussion about the nursing situation. Previous explanations are accepted, modified, or rejected depending on the information shared. During this

phase the tutor might ask the following questions: "How does the knowledge you now have help you accept or reject your original explanations? Do you need more information? If you were to approach this situation using Neuman's theoretical model, what would be important for you to guide your practice? Suppose that you were using Watson's theoretical model instead, would your approach to practice be different?"

During the PBL tutorial, students critique not only resources utilized during self-study but also personal research methods. In this way, they gain insight into how knowledge is constructed, effectiveness of research methods value of resources, and what could be altered for the future. Continuous evaluation of research methods and resources is critical for reflective learning and emphasizing the cohesion that exists between the discipline and practice of nursing.

During the final phase of learning, students summarize what they learned through the specific situation and discuss how their knowledge and skills might be used in future. The ultimate goal at the end of each situational discussion is that the student should feel confident interacting in similar situations. The tutor might ask the following questions: "Will the knowledge you gained enable you to support more than one outcome to this situation? What clinical judgments can you make? What is the best way of acting on your clinical judgments?" A final check could include the following questions: "If the Durrands decide to remain in their own home, how will you, as their case manager, facilitate that happening? If they choose to move to a seniors lodge, how will you facilitate their adjustment?" Learners consciously recall and reflect on learning that occurred, elaborate on the learning and integrate it into their existing cognitive structures (Barrows, 1983).

Another critical component of the PBL process is reflection on group process. On a regular basis each learner and tutor provides constructive criticism to every other learner about contributions the individual made to learning and group process, as well as areas for improvement. In addition, each student has an opportunity to assume the role of group leader for a designated period of time. Through these processes, learners develop and critically reflect on their collaborative, communicative, and leadership abilities.

The processes of reflection and critical reflection during situational analysis, determining learning needs, research and self-study, applying professional and disciplinary knowledge, critiquing resources and personal research processes, and summarizing what was learned during the activity develop students' abilities to be reflective and critically reflective in their learning

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(Williams, 2001). The PBL process engages nursing learners in activities that: reveal their thinking processes so they can monitor the effectiveness of their ability to analyze, reason, and acquire knowledge; facilitate the development of interpersonal collaborative skills, particularly listening, questioning and summarizing; and enable them to assume increasing autonomy, responsibility and control for their own reflective learning. Through PBL, students achieve a higher and deeper understanding of nursing as a discipline and its relationship to other disciplines (Powell, 1989). Through dialogue generated by the critical questioning of faculty tutors, students develop an understanding of the essential cohesion between the discipline and practice of nursing. Challenged with real nursing situations in the classroom, they should be ready for a higher level of challenge in the clinical practicum.

CONCLUSION

The concern about the discontinuity between the discipline and practice of nursing has been at the forefront of debates in nursing for decades. The literature supports the notion that the current learning traditions in nursing have a key role in perpetuating this discontinuity. Students often find it difficult to relate the a-contextual theory to which they are exposed in the classroom, to the richly contextual situations they encounter in nursing practice. The use of PBL as an instructional methodology in undergraduate nursing curricula has been identified as one way to facilitate the cohesion between the discipline and practice of nursing through research, reflection and critical reflection about real nursing practice situations.

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