An Online Doctoral Education Course Using Problem-Based Learning

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ABSTRACT
The number of doctoral nursing programs has greatly increased over the past several years. There has also been a shift toward delivering programs either partially or fully online. The literature lacks discussions about doctoral-level teaching methods in the online environment. This article describes the use of a semester-long problem-based learning activity in an online doctoral course focusing on nurse educator leadership. The Students-As-Faculty Experience created for this course features the use of a virtual nursing program in which students are cast as faculty members confronting issues via faculty meetings and sharing rotating roles as chairperson. Students were vested in the process by co-designing the course in terms of developing agenda items for the meetings and evaluation rubrics. Through playing the roles of faculty and chairperson, the students reported a distinct improvement in their leadership abilities and confidence at the end of the course.

The United States is experiencing a severe shortage of doctorally prepared nursing faculty. A survey released by the American Association of Colleges of Nursing (2007) indicated an average of 2.2 faculty vacancies per school and that most of these (86.2%) require or prefer doctoral degrees. The current shortage may pale in comparison to the next decade, in which a barrage of predicted retirements will further shrink the pool. Doctorally prepared nurses are urgently needed in faculty, academic administration, and theorist and researcher roles (Halter, Kleiner & Hess, 2006).

This dearth of doctorally prepared nurses has resulted in an increase in both the number of doctoral programs in the United States and in the use of online delivery methods. In fact, the U.S. Department of Health and Human Services (2006) identified as a priority the need for education in new technologies, including distance learning methods to increase the number of doctorally prepared nurses. Online programs eliminate the barrier of proximity, as students may be located anywhere Internet access can be found (Brownson, 2005). Also, online programs offer more flexibility and convenience than traditional brick-and-mortar programs. This is especially relevant for students in graduate programs who often juggle school with work and family responsibilities. Despite the increase in graduate-level online program offerings, little has been documented on the use of online curricular approaches at the doctoral level.

We discuss a successful implementation of an innovative doctoral-level online nursing leadership course at a university in the southwestern United States. It is one of only a few programs to offer a PhD in Nursing with an emphasis on the development of nurse educator leaders, scholars, and researchers. Most nursing PhD programs do not focus on developing master teachers who are able to conduct important educational research (Leners, Wilson, & Sitzman, 2007). The program is primarily online, with students traveling to campus once per year for 3 days of orientation and classroom meetings. The course is offered early in the program and features a problem-based learning (PBL) approach. Six graduate students participated in this innovative doctoral-level online nursing leadership course. All of the students had prior experience in online course delivery from their PhD program, which is primarily delivered using an online approach. However, none of the students, prior to participating in the course, had an experience in the development of courses using an online or PBL approach. Four of the students had prior background as faculty members. At the end of this course, students completed an anonymous course survey indicating the extent to
which they believed their leadership abilities had developed during the semester.

Literature Review

The PBL method is derived from constructivist educational theory. PBL is both a curricular method and a philosophy of education. The aims of PBL include development of analytical and critical thought, cooperation and self-directed learning, integration of knowledge and abilities within the context of practice, and self-motivation (Ryan, Carlton, & Ali, 2004). Problem-based learning is derived from Knowles’ (1970) Adult Learning Theory. This teaching method has been widely used in health-related educational institutions, including medical and nursing schools (Andrews & Jones, 1996; Biley, 1999; Biley & Smith, 1998a, 1998b).

Knowles (1970) coined the term andragogy to differentiate adult learning from that of children (i.e., pedagogy). One of the key assumptions of andragogy is that an adult learner has a unique frame of reference constructed by a lifetime of experiences. The suggested strategies of implementing PBL as a teaching method include the use of critical thinking questions, scenarios, case studies, group studies, and small groups. Faculty are present but act only as facilitators to guide the learners through their own discovery without teaching them in the traditional sense. The learning goals and the means to achieve them are negotiated between faculty and students. Learners are presented with stimulus material that represents a real-life clinical practice situation to produce collaborative work to solve the problem (Biley & Smith, 1999).

Steele, Medder, and Turner (2000) found that the use of PBL among medical students was as effective as the traditional lecture method. Miller (2003) found no difference between test scores of nurse practitioner students who were taught using PBL versus those taught using a traditional lecture format. A meta-analysis of PBL by Newman (2003) found that medical school graduates reported higher satisfaction in the learning environment than did students involved in traditional teaching; however, the overall result favored the traditional teaching method. Dochy, Segers, van den Bossche, and Gijbels (2003) used a meta-analysis of 43 studies on PBL and found that student graduates of the PBL method had better skills application than did graduates from the traditional lecture teaching method. Beers and Bowden (2005) found that students who participated in PBL had better long-term knowledge retention than did students who participated in the traditional teaching method. Hwang and Kim (2006) found adult health nursing students who participated in the PBL teaching method fared better in terms of aptitude scores and motivation toward learning than did those exposed to the traditional teaching method. Although none of these studies discussed the use of PBL with online teaching or doctoral-level courses, the success of PBL as a learning method is clearly demonstrated.

The theory of constructivist education has often been cited as the theoretical framework for online learning (DiRamio, 2005; Tilley, Boswell, & Cannon, 2006; Twomey, 2004). Students constructed their own knowledge as they worked within the course and interacted with peers during online discussions. The online environment facilitated connections between people who otherwise may not have interacted, thus increasing networking opportunities and fostering social relationships between geographically distant individuals. Tilley et al. (2006) found that:

Cohesive, supportive groups usually experience a synergistic learning experience. (p. 145)

Course Design

The doctoral nursing course, Nurse Educator as Leader, was offered for the first time in the summer of 2006. Design of the online course began with an in-depth review of course and program outcomes, course description, and literature review of academic and business leadership. Course outcomes centered on self-analysis and self-reflection of leadership abilities and how those abilities could be used to advance nursing in academic environments.

A problem-based educational design was chosen to facilitate leadership abilities in an authentic learning environment. A virtual school of nursing was developed to create the setting. In work environments, particularly academic environments, relationships are vital to achieving the goals of the faculty and department. According to Smith (2005):

Faculty-to-faculty relationships should be based on respect, collegiality, and shared goals to advance the quality of the education process. (p. 101)

A semester-long Students-As-Faculty Experience (SAFE) was designed and resulted in the student cohort functioning in the role of faculty in the school of nursing. As the course was asynchronous, the format was a series of faculty meetings in which the students each took a turn as chairperson. The course instructor functioned as the dean. In this role, the dean attended meetings when requested, provided additional information about the school, and updated faculty through communiqués. As the course instructor, the faculty viewed meeting interactions and provided feedback to students on their role as chairperson or faculty member.

Students were presented with essential school of nursing information, such as program types, faculty numbers, the strategic plan, and the mission. Understanding intercollegial relationships and culture is vital to productive dialogue and decision making to achieve success as nurse educators (Fitzpatrick & Montgomery, 2006). The larger context of the university and the relationship to the school of nursing was important to ensure that faculty discussion and decisions were thoughtful and informed.

A text file of essential information, which included a presentation of the university mission and goals, was included in the online nursing leadership course for students to review and read. If requested, the dean pro-
vided additional specific information needed by faculty as the semester progressed.

In their roles as chairperson and as faculty, students collaborated to design evaluative rubrics to assess abilities. Students completed an online work personality survey and were able to review their own work personality survey results as a starting point for reflecting on leadership and work relationship strengths. The five concepts in the survey (i.e., communication, teamwork, self-awareness, problem solving, goal orientation) were used to develop an instructor-designed course evaluation used at the end of the semester to assess student perceptions of learning leadership through the SAFE teaching method.

Students and instructors initially discussed the most pressing current and emerging issues facing nursing programs. They agreed on a list of issues. Students worked together to determine the sequence and timing of meetings, which topic would be the focus of each meeting, and the topic for which each student would function as chairperson. Robert’s Rules for parliamentary procedure (Kennedy, 1997) were used to conduct meetings. Issues were presented by the chairperson to open the meeting. The chairperson was responsible for moving the meeting along, generating and stimulating discussion, clarifying, recapping, facilitating faculty vote, and submitting a summary to the dean. In addition, certain guidelines were instituted to ensure movement and completion of specific tasks. The chairperson would open the discussion and present topics that had been assigned by the dean to other faculty members for review. Students were given 1 week to review and prepare for discussion the following week. Four days of discussion were allowed, and then faculty members had 2 days to vote on the issues under consideration. After all faculty members had voted on the issues, a summary statement on each issue was delivered to the dean and faculty members via the online discussion board. As all the students had previous experience with online classes and asynchronous dialogue sessions, the discussion schedule and deadlines were accepted by the students and thus remained in place throughout the course.

Online discussions promoted collaboration and self-reflection (Young & Paterson, 2007). However, leadership also required the ability to manage conflict and dissent. To ensure that lively debate ensued, the instructor randomly and privately selected a student to function in the role of dissenter during the meeting. All students were expected to promote their views on the basis of logic and evidence.

The dean would also periodically and unexpectedly present an urgent communiqué to the faculty on an issue that needed to be addressed immediately. For example, during a faculty meeting about how much of the undergraduate program should be offered online, an urgent communiqué was received from the dean. The directive requested a faculty response about how the school should respond to a legislative move to decrease the educational requirements of nursing faculty. Thus, the faculty addressed the dean’s request, as well as the pre-established agenda.

From the outset, students were highly engaged in the online faculty meetings. Each chairperson and faculty member articulated sound arguments. The use of evidence to advance a position was effective in bringing faculty to “yea” or “nay” votes versus tabling decisions.

Course Outcomes

Throughout the course, students evaluated themselves according the rubrics that they had helped design. The instructor also evaluated each student by these rubrics. In addition to the regular end-of-semester course evaluation completed in every course, students were also asked to complete an instructor-designed survey. The intent of the survey was to assess student perceptions of the helpfulness of SAFE in developing leadership abilities in the areas of teamwork, problem solving, self-awareness, communication, and goal orientation. These general areas are frequently included in the literature as part of the overall abilities of leaders (Stephenson, 2005; Wolf, Dunbar-Jacob & Greenhouse, 2006). In addition, SAFE was structured to include all five of these areas. The survey consisted of 25 Likert scale questions and 3 open-ended questions. It was pilot tested for readability by four practicing nurses. The instructor received exempted approval for the use of the survey from the university institutional review board. This survey was then administered via the anonymous area of the discussion board.

Results and Discussion

Student feedback on the course design was positive. The questions were all worded to reflect the extent to which SAFE was or was not helpful in developing leadership abilities. The Likert scale ranged from 1 (not helpful) to 6 (very helpful). All six students responded to the survey. According to the students’ feedback of this SAFE leadership course, teamwork and goal-orientation received the highest agreement among students as much improved due to attending this leadership course (mean = 5.7). Not so distant from these two major leadership themes were problem solver and communicator, which received the least agreement among students as much improved (mean = 5.5).

The rating results of students were comparable to their input in the open-ended questions in the survey. Positive comments included:

- Often times I can only see one solution to a problem, and this experience created a forum for considering other ideas.
- The most important thing I learned was how to allow those I lead to express themselves and thus improve their leadership skills too.
- It was a safe environment to practice “faculty” abilities.
- It was even helpful to be the “opposing argument” to practice having everyone else disagree with you and requiring you to stick to your opinion.
Suggestions to improve the activity included:

- Have each student evaluate all other students after every meeting, not just themselves.

The course design was effective in positively affecting student perceptions of their leadership abilities. Limitations included the small number of students; a new, instructor-developed survey; significant development of the hypothetical school prior to the start of the semester; and intensive communication to ensure student understanding of SAFE. In the future, the course will be refined to feature ongoing peer evaluation, the use of a developed leadership instrument with reliability and validity, and course homepage features to look up school of nursing facts.

Conclusion

Problem-based learning appeared to offer an authentic approach to developing students in the roles they will assume in academic settings. Problem-based learning in online doctoral programs has not been discussed in the literature. Further research is needed to ascertain real effectiveness. In the meantime, the educational community should consider creative methods to help this intense doctoral journey professionally and academically (American Association of Colleges of Nursing, 2001; Hinshaw, 2001; Jolley, 2007; Kjellgren, Welin, & Danielson, 2005; Sullivan, Carter, Marion, Phol, & Werner, 2005; Waldron, 2005).

References


