Virtual Classrooms in Nursing Education:

A Literature Review

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Online learning, elearning, distance education, web-based learning, and virtual classroom are all terms to describe the current trend of using the Internet and other technology to teach classes (Bristol, 2010b; Halstead & Billings, 2012). Students’ push for greater accessibility, flexibility, and convenience has stimulated the growth of alternative deliveries of instruction (Halstead & Billings, 2012; Zwirn & Muehlenkord, 2012). Even on-campus students expect greater integration of technology and flexibility when taking a higher education course (Bromley, 2010; Halstead & Billings, 2012; Paulus, Myers, Mixer, Wyatt, Lee, & Lee, 2010). These marketing demands have contributed to the explosion of online learning, especially in the field of nursing (Warelow, Wells, & Irwin, 2011).

Although online learning has become prevalent in higher education institutions, standardized terms have not been established (Bristol, 2010b). Web-based courses, elearning, distance education, and virtual classrooms often denote a class that is delivered entirely online. On the other hand, web-enhanced, hybrid, or blended courses refer to the traditional, face-to-face classes that use technology to enrich the class content (Bristol, 2010b; Halstead & Billings, 2012). Traditional pedagogy refer to the lecture-based, classroom oriented, face-to-face delivery of instruction without the use of the Internet or Internet-based technology (Bristol, 2010b). Majority of nursing programs are using the hybrid version to enhance their current curriculum; however, accelerated degrees and graduate nursing programs have been known to offer full web-based courses/programs as well (Bromley, 2010; Halstead & Billings, 2012; Nelson, 2010; Warelow et al., 2011). By exploring the topic of online learning, nursing educators can produce an analytical discourse to improve the virtual teaching-learning experience.

**Significance**

Online learning has several benefits for the students and for the teachers. For the nontraditional students, accessibility, flexibility, and convenience of online classes help them to integrate education with their other responsibilities (such as family and work) (Bristol, 2010a; Bromley, 2010; Halstead & Billings, 2012). Also older adult learners tend to enjoy self autonomy, collaborative learning and building from personal experience that is typically integrated into an online course (Warelow et al., 2011). Since traditional students have grown up in the digital age, they expect the integration of technology in their higher education classes (Bristol, 2010a; Halstead & Billings, 2012) and a different educational experience. For teachers, the flexibility of teaching from home, the ability to teach using different learning styles or multiple intelligences, the capability to shift paradigms to a more learner-centered environment, and the reduction of paper and travel costs are benefits to consider (Bristol, 2010a; Bromley, 2010; Revere & Kovach, 2011). Also the increase in academic freedom caused by visibility of the online course can increase accountability and peer collaboration (Paulus et al., 2010).

Currently, the nursing field, and by extension the nursing education, are experiencing a shortage (Halstead & Billings, 2012). The retirement of the aging Baby Boomers in the nursing field is expected to dramatically impact the nursing profession and nursing education (Halstead & Billings, 2012). The rising educational standards for nursing professors (doctorate required now) also deter nurses from pursuing nursing education positions (Talbert, 2009). Due to a decrease in nursing educators, many qualified students are turned away from nursing programs (Allan & Aldebron, 2008). Online programs, to both educate future nursing educators and instruct future nurses, have been suggested as a solution to the nursing shortage (Allan & Aldebron, 2008; Talbert, 2009).

To address the needs of the learner, to improve the learning experience, and to alleviate (if not, eliminate) the nursing shortage, nursing programs need to provide hybrid and completely online courses/programs. The use of online learning is prolific throughout the higher education system, but is relatively new to many nursing educators (Bristol, 2010b; Halstead & Billings, 2012; Nelson, 2010). To prepare nursing educators and to provide a quality educational experience (the goal of all teachers), researchers will need to study best educational practices online, and faculty development should be based from these research studies (Halstead & Billings, 2012; Lee, Paulus, Loboda, Phipps, Wyatt, Myers, & Mixer, 2010).

**Discussion**

**Effectiveness of Online Courses**

Are online courses as effective as the traditional classes? Studies have shown that student achievement is same in both online and traditional classrooms (Bata-Jones & Avery, 2004; Coose, 2010; Leasure, Davis, & Thievon, 2000; Mills, 2007). Both student achievement and learning outcomes have no significant difference between the online, hybrid, and traditional classrooms (Buckley, 2003). In addition, students were more satisfied in the online courses (Billings, Connors, & Skiba, 2001; Bristol, 2010a). Other unintentional effects materialized, including the more active participation of the learners, the emerging voice of the “quiet” students, and the presence of deeper understanding and higher cognitive skills (Bromley, 2010; Revere & Kovach, 2011).

**Clinical Courses in an Online Format**

Can clinical courses exist in an online format? Nursing educators argue that nursing is both theoretical and practical and thus, cannot be disseminated online (Bromley, 2010). However, many nursing programs have overcome this obstacle, using a preceptor/mentor model or creating virtual clinical sites (Bromley, 2010). By using local expert nurses as mentors, students can receive the hands-on, practical training they need to succeed (Stokes & Kost, 2012). Mentors, or preceptors, can help nursing students to transfer theoretical knowledge into practical applications and to socialize them into the profession of nursing (Bromley, 2010; Stokes & Kost, 2012). Another solution, virtual clinical experiences, is still in its infancy. Using a virtual reality (such as Second Life), some nursing programs have designed a clinical experience that students otherwise might not receive (i.e. natural disasters, life threatening situations) (Stokes & Kost, 2012; Zwirn & Muehlenkord, 2012).

**Emergence of a New Paradigm**

Although educators have tried transferring a didactic, traditional pedagogy to the online learning environment, these attempts were futile, at best, and often failed (Bromley, 2010; Edwards, Perry, & Janzen, 2011; Halstead & Billings, 2012). An emerging paradigm that melds well with the elearning platform is the learner-centered model, which applies the constructivist theory of learning (Bristol, 2010; Kuiper, 2012; Paulus et al., 2010; Revere & Kovach, 2011). “Among the learning theories that have guided higher education, perhaps constructivism, the theory of multiple intelligences, and cognitive theory of multimedia learning, have the greatest likelihood of informing web-based distance education practice” (Meyer, 2002, p. 24). This shifting paradigm values learner-centered learning, peer interaction, collaborative learning, active learning, timely and constructive feedback, diverse modes of learning, authentic tasks, respectful learning environment, and contextually based cognition (Bromley, 2010; Edwards et al., 2011; Kuiper, 2012; Revere & Kovach, 2011). This shift in how education is perceived has changed the roles and qualities of teachers, the qualities of students, the design of the course, and the use of different technologies in online instruction.

**Roles of online educators.**

Edwards et al. (2011) identify three roles of exemplary online teachers: challenger, affirmer, and influencer. As a challenger, an online educator must set high standards, believe in higher potential in students, provide timely and constructive feedback, empower students to take responsibility for their learning, and provide strong cognitive presence online to challenge and engage students (Edwards et al., 2011). In the affirmation role, educators need to establish open communication, to recognize potential in students, to treat students with respect, to recognize potential problems and assist the student to address these problems, to motivate students, and to promote self-efficacy/esteem (Edwards et al., 2011). These affirmers are also available to students, responsive, and uplifting (Alvarez, Guasch, & Espasa, 2009; Edwards et al., 2011). The influencer has existing knowledge and/or expert in the subject matter, provides clarity on the content, establishes an online presence, and influences students (Edwards et al., 2011).

In addition to these roles, nurse educators are also co-creators of knowledge, facilitators, and course designers (Bristol, 2010b; Edwards et al., 2011; Halstead & Billings, 2012). The co-creator of knowledge builds a community of inquiry (containing the qualities of honesty, responsiveness, relevance, respect, openness, and empowerment), values students’ opinions, engages with the learners, and is enthusiastic and a life-long learner (Bristol, 2010b; Bromley, 2010; Edwards et al., 2011; Halstead & Billings, 2012). The online nursing educator must also be facilitator by providing a positive and “safe” learning environment, being technology proficient, prioritizing and organizing communications and assignments, and respecting students (Bristol, 2010b; Halstead & Billings, 2012). Lastly, as a course designer, an online educator must be organized, provide clarity, and good at instructional designing and at time management (Bristol, 2010b; Halstead & Billings, 2012).

**Qualities of online students.**

Often the online format and accessibility of distance education attract more nontraditional students (Bristol, 2010a). These older adult learners tend to be self-directed, have life experience to draw, to be intrinsically motivated, to approach learning as problem solving, and may have had past negative learning experiences with traditional courses (Bristol, 2010a). Also online students must be an active learner, technology proficient, self-motivated, not easily discouraged, responsible, and good at managing their time to be successful (Bristol, 2010a; Halstead & Billings, 2012). Other characteristics of successful online students include life-long learner, independent worker, autonomous, and proficient communicator (Bromley, 2011). These characteristics also translate well into the nursing profession; therefore, the online format can socialize and prepare students to be nurses.

**Online course design.**

With the shifting, learner-centered paradigm, educators should employ instructional design techniques and apply learning theories to provide a better quality educational experience (Halstead & Billings, 2012). Using the ADDIE (Analyze, Design, Develop, Implement, and Evaluate) model can assist nursing educators in designing the course, because it is similar to the already familiar nursing process (assess, diagnose, plan, implement, and evaluate) (Bristol, 2010b; Lee et al., 2010). In the first step, educators must assess their learners in order to meet their needs and identify their learning objectives (Halstead & Billings, 2012). Secondly, online nursing educators design the course based on the needs assessment of the learner (Lee et al., 2010). Thirdly, in the development stage, educators outline course content, create a syllabus, and design learning experiences to include the ideals of the new learner-focused paradigm (Halstead & Billings, 2012; Nelson, 2010). Fourth, implementing the course design by using various web technologies that enhance – not overwhelm – the learning objectives (Halstead & Billings, 2012; Nelson, 2010; Skiba, 2010). Lastly, educators must evaluate the effectiveness of their course design to continuously improve the quality of the online course (Halstead & Billings, 2012; Nelson, 2010).

**Use of various technologies.**

Various Internet technologies can be used to implement the design of the course (Bristol, 2010b; Halstead & Billings, 2012); however, the learning objectives should guide which technologies to use (Skiba, 2010). Skiba (2010) also warns to avoid overloading the course with too much technology that can detract from the educational experience. Some applications are embedded into the course management system (i.e. Blackboard, WebCT), such as discussion boards, emails, chat sessions, blogs, links to other web pages, and uploading of course material (Bristol, 2010b; Nelson, 2010; Revere & Kovach, 2011). Other technologies include wikis, Twitter, Facebook, audio/video (such as Wimba, Skype, Voicethread, PowWowNow), collaboration tools (for example, Google docs, Google scholar, Google tasks, Ning, LinkedIn) and video and podcasts (i.e. YouTube, TeacherTube, iTunes U, Jing, CamStudio, Camtasia, ScreenToaster, PodBean) (Revere & Kovach, 2011). Even games and virtual reality (such as Second Life) have been used in online education. With such a plethora of resources, online education can individualize and creatively design their course to enhance the learning experience.

**Disadvantages and Barriers to Online Learning**

Online students have experienced disadvantages to online learning: social isolation, technological problems, and outdated/poor instruction online (Bromley, 2010; Edwards et al., 2011; Halstead & Billings, 2012). Due to lack of face-to-face time with others, students can experience social isolation (Bromley, 2010). Online educators can overcome this obstacle by incorporating assignments with interactions with peers and with the instructor (Bromley, 2010; Edwards et al., 2011). Technological problems, such as outdated browsers, crashed computers, and slow bandwidths, can easily derail a student’s progress in the course (Bristol, 2010a; Bromley, 2010). Technological support systems and accessibility to institutional technology resources (such as computer labs, internet) are needed to overcome this disadvantage (Nelson, 2010). Poor instruction, such as instructors trying to transfer the didactic designed classes to the online platform, trying to incorporate too much technology in the class, or has not updated all the links in the class, can frustrate and overwhelm students (Bristol, 2010a; Halstead & Billings, 2012; Skiba, 2010). Good course planning and design and faculty peer evaluation can overcome these poor instructional techniques (Bristol, 2010a; Paulus et al., 2010; Skiba, 2010).

Barriers, such as poor time management, lack of self direction/motivation, access to a personal computer and the Internet, and lack of skills in using technology, can prevent students from being successful online (Bristol, 2010a; Bromley, 2010; Halstead & Billings, 2012). Educators are encouraged to monitor how often students log on the course website. Infrequent visits may be due to poor time management, lack of motivation, or technological problems, which all can be remedied with the help of the instructor and outside resources (through tech support center, computer lab) (Bristol, 2010a; Halstead & Billings, 2012). Other options to overcome barriers are to provide an orientation to course management system and other online technologies that the students will encounter in their educational career (Bristol, 2010a; Lee et al., 2010).

**Conclusion**

Using online education for nursing programs is just as effective as the traditional nursing pedagogy. When designed correctly, online courses can improve student learning, student motivation, and student achievement. Through the application of a new paradigm and selective integration of technology, nursing schools can design excellent quality programs that meet the needs of the learner and can prepare faculty to teach in these virtual learning environments. Also with adequate support systems built into the institution and the assistance of alert educators, the barriers of online instruction can be overcome.

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