Articles

The Use of Scaffolding and Interactive Learning Strategies in Online Courses for Working Nurses: Implications for Adult and Online Education

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Abstract

This paper reviews the foundational literature of contemporary e-learning, with a focus on scaffolding, instructional design, and engagement. These concepts are then considered in two limited case studies, each involving e-learning and adult learners—in particular, nurse-learners. The first case study describes the use of a scaffolding model called Introduction, Connect, Apply, Reflect, and Extend (ICARE) in e-learning for nursing education. The second is a reflection on the use of engagement strategies for the purposes of discourse and learning in a different online nursing context. Because nursing educators were among the early adopters of e-learning, they are important mentors to others who are adopting e-learning strategies at this time. Additionally, the paper is a crossroads publication: it

Résumé

Ce document passe en revue la littérature fondatrice du cyberapprentissage contemporain, en mettant l'accent sur l'étayage, la conception pédagogique et l'engagement. Ces concepts sont ensuite pris en compte dans deux études de cas limitées, portant chacune sur le cyberapprentissage chez l'adulte, plus précisément chez les étudiants en sciences infirmières. La première étude de cas décrit l'utilisation d'un modèle d'étayage appelé ICARE, pour introduction, connexion, application, réflexion et extension en matière de cyberapprentissage pour la formation d'infirmière. La seconde se veut une réflexion quant à l'utilisation de stratégies d'engagement aux fins du discours et de l'apprentissage dans un contexte différent de soins infirmiers en ligne. Puisque les éducateurs en soins infirmiers se trouvent parmi les

reminds the reader of the imperative to review theory and emerging evidence related to e-learning and to bring key findings to the actual practice of e-learning in order to benefit the adult student. This commitment to theory and practice will enable the evolution of e-learning for all learners, including returning adult learners and working professionals. Keywords: scaffolding, instructional design, interaction, best practices, engagement, adult education, working professionals, e-learning.

premiers à avoir adopté le cyberapprentissage, ce sont d'importants mentors pour d'autres qui adoptent présentement des stratégies de cyberapprentissage. En outre, l'article constitue une publication croisée : il rappelle au lecteur qu'il est impératif de revoir la théorie et les preuves émergentes relatives au cyberapprentissage, et de transposer les principales conclusions de l'étude dans la pratique du cyberapprentissage afin d'en faire bénéficier l'élève adulte. Cet engagement envers la théorie et la pratique permettra l'évolution du cyberapprentissage pour tous les apprenants, y compris les adultes qui retournent aux études ainsi que les professionnels à l'emploi.

Mots-clés : étayage, conception pédagogique, interaction, meilleures pratiques, engagement, éducation aux adultes, professionnels à l'emploi, cyberapprentissage.

Introduction

Since its emergence in the 1990s, e-learning has found its way into public, private, corporate, and educational settings ranging from the K–12 sector to adult education. Moreover, its growth shows no signs of slowing down: in 2011, the worldwide market for e-learning reached US $35.6 billion, and it is estimated that there will be additional growth of approximately 7.6%, with revenues topping US $51.5 billion over the next five years (Ambient Insight Research, 2012). Recently, mobile learning and massive open online courses (MOOCs) have increased public awareness of e-learning. Given this phenomenon, it is more important than ever to use best practices for ensuring high-quality learning experiences (Guri-Rosenblit, 2009; Guri-Rosenblit & Gros, 2011; Smart & Cappel, 2006; Walsh, 2009). In this paper, the use of a scaffolding technique called Introduction, Connect, Apply, Reflect, and Extend (ICARE) and learning strategies that facilitate student engagement are considered in two case studies from the online nursing education world. Recommendations for developing the practice of e-learning when it involves adult learners and working professionals are suggested.

In this discussion paper, e-learning refers to an integration of pedagogy, content, and technologies within a teaching and learning context. It can, therefore, include face-to-face classrooms in which information technologies (e.g., learning management systems, video conferencing, web conferencing, mobile devices, multimedia and simulation, and so forth) are used; blended and web-enhanced learning environments, also known as flipped classrooms; and fully online learning environments. E-learning can also occur synchronously, asynchronously, or as a combination of the two (Carter & Salyers, 2013). According to Abdullah, Embi, and Nordin (2011), in e-learning, students acquire knowledge through emergent goals and mutual construction of meaning. Collaborative e-learning may also equip learners with valuable social skills for the workplace.

The following presentation of scaffolding and the ICARE model emphasizes its applicability in nursing education in different geographical contexts, including Canada and the United States and, in particular, the 'without borders' context of e-learning. Interaction in online education is explored in the latter part of the paper, which describes a sophisticated synchronous learning activity carried out by working nurses who have returned to university to acquire baccalaureate standing. Both cases highlight the need for and benefits of planning and design in e-learning.

Scaffolding and Instructional Design: Enhancing the Student Experience

Various technological barriers and inconsistencies in the use of e-learning strategies impact student experience (Carter, Salyers, Page, Williams, Albl, & Hofsink, 2012; Salyers, Carter, Barrett, & Williams, 2010). While opinions differ about how teachers and educational developers can address these challenges, most frequent in the literature is the view that e-learning requires design through scaffolding that is grounded in relevant learning theory and diverse experiences for interaction. This way, the engagement and skill challenges of some e-learners are generally resolved (Winter, Cotton, Gavin, & Yorke, 2010).

Scaffolding is a framework that enables the learner to pace his or her learning and experience it as manageable chunks (Alias, 2012; Baker, 2010; Grady, 2006; Kim & Hannafin, 2011; Lipscomb, Swanson, & West, 2004; McKenzie, 2000; Verenikina, 2008). Likewise, scaffolding may increase motivation and accommodate ability to self-regulate, self-assess, and engage with peers and the instructor. It is also important for benchmarking (Murtagh & Webster, 2010). According to Ginat (2009), scaffolding includes the following: (1) identification of what the student can do, (2) establishment of shared goals, (3) provision of ongoing assessment of learning needs, (4) provision of individualized assistance, (5) reflection on activities and identification of what worked well and what requires improvement, and (6) inclusion of opportunities for internalization and generalization of the learning. These ideas are similar to earlier ideas about scaffolding in more traditional learning settings, as articulated by McKenzie (2000).

Scaffolding and e-Learning Theory

The learning theory of connectivism has recently found its way into the e-learning literature. As the word suggests, connectivism involves relationships and connections. Siemens (2005) described learning as a process within an environment of shifting elements that also includes the nurturing of connections. Downes (2006) has asserted that contemporary learning and knowledge are distributive: they are not located in any given place and are not transferred.

According to Drexler (2010), today's students are networked. They connect with classmates, teachers, and others, as well as with information and ideas derived from different sources. They also need to participate in information management, make decisions about the relative value of data sources, and prioritize these sources. Asynchronous and synchronous communication techniques are important ways of networking. Asynchronous communication can occur through discussion boards, blogs, forums, wikis, and other web spaces (Dickieson & Carter, 2010; Carter, Rukholm, & Kelloway, 2009), while real-time webinars and web conferencing are examples of synchronous interactions.

The concept of the networked student in the twenty-first century is indisputable. However, educators need to be aware that one size never fits all, and that even the most networked person is likely to require guidance to achieve important learning outcomes and otherwise make meaning in his or her learning. This is where scaffolding becomes important. In e-learning, scaffolding is often facilitated when the teacher works with a skilled instructional designer (Christensen, 2008; Merrill, 2007; Tennyson, 2010).

Instructional Design and e-Learning

Instructional design is a process used to plan, develop, and evaluate instruction so that it is efficient, effective, and congruent with a foundational learning theory. Like the learning it enables, instructional design is not an event but a process (Carter, Wiebe, & Boissonneault, 2002).

In e-learning, instructional design can facilitate exciting and rewarding experiences, including diverse opportunities for interaction, such as student interaction with content, other students, the instructor, and unique learning objects. Personal learning activities and group sharing can be facilitated through synchronous and asynchronous applications (Carter, 2008).

Another area in which the instructional design process can play a positive role in e-learning is in identifying and facilitating occasions for reflection. Reflection in professional programs such as nursing (Johns, 1995, 1996) and in programs involving adult learners is a way of consolidating learning. Generally, reflective learning occurs best when there is a student-centered approach (Maor, 2003). Although there are valuable social and support benefits in a network of learners, to ensure that these relationships facilitate learning of a particular curriculum, extra planning and the assumption of different roles by the teacher are required. This idea is particularly important in e-learning.

Case Study 1

ICARE as a Scaffolding Framework and Demonstration of Instructional Design

The ICARE system is a scaffolding framework developed by staff and faculty at San Diego State University in 1997 to structure and organize course modules—modules being natural sub-sections of courses (Carter & Salyers, 2013; Salyers, 2005; Salyers, Carter, Barrett, & Williams, 2010). While the ICARE model was created for use in different delivery contexts, it holds specific value in online and blended learning and with adult learners. Not unlike Merrill's (2006) work on scaffolding, the ICARE model includes a series of steps or phases. The five steps of ICARE are repeated in each module of a course, and the structure can be used in different subject areas. While more information regarding ICARE is presented by Hoffman and Ritchie (1998, 2005), it is worth noting here that this scaffolding model, as suggested by its name—ICARE—was created for programs in the health sciences.

In the Introduction section of any ICARE module, context is provided. For example, an overview of the module, learning objectives, and reading assignments is presented. The Connect (or content) section provides conceptual material and information to be discussed in other ICARE sections of the module. In the Apply section, students might be required to write a short paper or complete a self-assessment requiring the synthesis and application of ideas. In the Reflect section, students might be asked to reflect on newly developed skills and knowledge (e.g., lessons learned, etc.). The Extend section might be structured around evidence-based research and "real-world" applications (Salyers, 2005; Salyers, Carter, Barrett & Williams, 2010).

ICARE in Action

The following paragraphs describe why and how ICARE was implemented in two universities—one American and one Canadian—that deliver nursing programs, including programs taken by working adult-learners and programs delivered through e-learning strategies. High-level findings based on the implementation of ICARE are also reported. One of the authors was employed at the two universities when the ICARE model was instituted. In both cases, the nursing faculty made a conscious decision to utilize the ICARE framework in all nursing programs, including face-to-face and online programs (Carter, L., Salyers, V., Cairns, S. & Durrer, L., 2013).

Based on student surveys and anecdotal feedback provided by faculty at the two institutions, a number of challenges in their online courses had been identified; hence, the institutions were open to new approaches such as ICARE. The first challenge related to faculty experience with e-learning formats and their different uses of e-learning. Also, some faculty were avid users of Blackboard, Moodle, or Desire2Learn and thus provided students with learning experiences that included discussion board activities,

online quizzes and exams, links to online resources, and so forth. Other faculty used the learning management system strictly to host course syllabi (Salyers, Carter, Barrett, & Williams, 2010; Carter, Salyers, Cairns, & Durrer, 2013).

A second challenge was the variation among students' skill levels in navigating their courses. Students cited difficulties in finding course materials and navigating the sites. Ease in these two areas is integral to student success in online and blended learning.

A third challenge was the limited availability of instructional design support for faculty. Instructional design was recognized at both institutions as important to the development of effective e-learning, but was not available to the extent that faculty required. As the literature suggests, adequate instructional design is integral to e-learning (Christensen, 2008; Merrill, 2007; Tennyson, 2010).

While other technological and geographical variables also affected student and faculty satisfaction, the previously discussed challenges were identified as having the highest priority for improvement or change. The ICARE framework was piloted as a means of mitigating these issues.

In 2010, research on the ICARE framework within one of the noted universities provided evidence to support the use of the ICARE framework in structuring high-quality, satisfying courses (Salyers, Carter, Barrett, & Williams, 2010). This finding was consistent for students and faculty. Based on the study, the researchers also made instructional design recommendations for the implementation of ICARE in all programs at this school of nursing.

Previous research based on the ICARE model revealed no differences in technical ability, learning styles, learning outcomes, and course satisfaction for graduate nursing students enrolled in face-to-face and web-enhanced sections of a course that used the ICARE framework (Salyers, 2005). However, students in the web-enhanced section of the graduate course were more satisfied with their overall course experience, and they reported advantages such as greater flexibility in scheduling, less travel, and greater independence and self-pacing in relation to content (Dimitrova, Mimirinis, & Murphy, 2004; Salyers, 2005; Salyers, Carter, Barrett, & Williams, 2010).

In summary, the scaffolding provided by the ICARE framework has been shown to support both teaching and learning in online courses. Adhering to the principles for effective scaffolding outlined by McKenzie (2000), ICARE provides a means for faculty to develop and deliver positive e-learning experiences for students. It also affords students the opportunity to self-pace through course material in bite-sized chunks that are consistent, easy to navigate, and stimulating (Salyers, Carter, Barrett, & Williams, 2010).

Student Engagement and e-Learning

While the term scaffolding is quite prevalent in the literature on e-learning, engagement is equally emphasized. This should not be surprising in that the two are intricately related, with the first enabling the second. The Best Practice Principles for e-Learning

model proposed by Staffordshire University and presented in Figure 1 makes this clear. The model clarifies that e-learning is facilitated most effectively when it

- is designed in timed chunks that emphasize time on task and expectations;
- is assessed using a range of types (self/peer/tutor) and options/choices;
- includes a variety of interactions between student/tutors/peers/externals; and
- is accessible, activity-led, collaborative, and designed in phases that support, scaffold and increase learner independence.

Simply stated, effective learning environments include (1) opportunities for cultivating a sense of community in the first few weeks of a course and (2) diverse ways for students to interact with the content, the learning environment, each other, and the instructor for the purpose of meaningful learning.

Figure 1: Best Practice Principles for e-Learning (Staffordshire University, 2013)

As Figure 1 suggests, diversity of interaction as well as changes in the role of the student are important in e-learning. For example, at the beginning of a course, students may be invited to interact and start to develop their own sense of community through tools such as discussion boards and blogs. As the course unfolds, these same tools, along with new ones such as those that support real-time auditory and visual interactions (e.g., through Collaborate sessions) and even social media applications (e.g.,

Facebook) (Killam, Carter, & Graham, 2013) can be used to sustain a community of learners and thus inspire learning (Wenger, 2004; Wenger, McDermott, & Snyder, 2002).

The emphasis on diverse interactions is important; in e-learning, as in other kinds of learning, care needs to be taken to accommodate different learning styles and preferences. As an example, while discussion board contributions will continue to be important in e-learning, learning strategies that use technology-mediated instruction and other forms of interaction are also encouraged. Gardner's (2004) work on learning styles is as important today as it was 10 years ago. Additionally, today's attention to accessibility in the learning setting ties in here. While accessibility regulation is a strategic effort to make sure that students with disabilities are provided appropriate and high-quality learning opportunities, the legislation is beneficial to all students given a foundation built on the principles of flexibility, collaboration, transparency, equity, and diversity.

While some of us may think of interaction as an encounter between students that includes activities such as "teachback," whereby one person teaches the other what he or she has learned (Culatta, 2011), not to be forgotten are the student–teacher interactions of learning (Carter & Rukholm, 2008; Laurillard, 1993). According to Anderson (2003), there are three main forms of interaction: student–teacher, student–student, and student–content. If at least one of these three kinds of interaction is at a high level, there is the possibility of deep learning. At the same time, interaction of the student–teacher variety has been reported to be the most effective of the three kinds in supporting the achievement of learning outcomes (Bernard et al., 2009).

Interaction in the e-learning environment comes in many guises. Most common, though, are activity-based and collaborative encounters. E-learning offers the potential for a wide range of active tasks, projects, simulations, and scenarios, all of which require the student to do something—including thinking critically and acting authentically (Schank, 2002). Moreover, as new technologies have continued to emerge and others have been finessed, the opportunities for collaborative e-learning have increased and become less cumbersome than in the past. Clear guidelines for collaborative assignments and the behaviours of group members are highly recommended (Carter & Rukholm, 2008).

Case Study 2

Interaction in Practice in an
Online Course for Working Nurses

This case study is a reflection prepared by one of the authors, who is a university instructor for an online course taught to nurses wishing to increase their credentials from diploma to degree standing. The specific focus of the reflection is an assignment completed by the nurse-learners in a course on professional foundations. According to McLean and Carter (2013), the working professional is the fastest growing sector in

adult education in Canada. As well, the course is part of a program designed specifically to serve the needs of nurses as working professionals: hence, all theory courses are delivered online, and the program is part-time.

The two parts of the assignment are an independent research paper (Part A) and a real-time online group presentation (Part B). In both parts, interaction is a means to a learning end as well as an intended outcome. Nursing education requires the development of strong thinking, analytical, and communication skills. Interactive learning activities are important for the development of these skills and, with careful instructional design, can be carried out in the e-learning setting.

According to the teacher of this course, there is an immediacy of interaction within e-learning environments that instructors need to be aware of and anticipate if an assignment is ever unclear, threatening, or logistically challenging. For learners who are used to working independently or who are experiencing a steep learning curve, such as working adults taking a university program, the concept of a group assignment may be outside of what would be considered their zone of proximal development (Vygotsky, 1978). In response to the two-part assignment under consideration, one student contacted the teacher early in the process to say the following: "I was planning on saving my feedback for the end-of-course evaluation but, since you have sent out this message, I feel motivated to respond." This kind of feedback from students enables early detection of concerns and provides an opportunity for the instructor to offer support to individual students and groups, as needed.

In Part A of the assignment, each student is required to research a topic and prepare a scholarly paper, on which the instructor provides feedback. Through this process, students become well versed in particular topics. They then join a presentation group of five to six students; each member of the group has studied the same topic.

In the particular offering of the e-learning course profiled here, the students were introduced to the members of their presentation group through a shared space within the university's learning platform and encouraged to use this space to post discussion ideas and share correspondence unique to their group. Another "live" space, called the "presentation practice space (PPS)," was created for each group. The PPS was also part of the learning platform and enabled the groups to access materials and share ideas at their own convenience, 24/7, for the duration of the course. This space served as a virtual meeting place for 10 groups as they planned their presentations, organized their presentation content, and practiced using the technology they would use during their presentations. Students were able to broadcast themselves through audio and video as well as simultaneous written chat. The PPS included a white board with tools to share group presentation planning ideas. All students were given moderator privilege, which meant that each could control the PPS and explore the options of the learning platform. Students were also encouraged to test and play in the live practice space, either by themselves or with group members. One student offered this comment: "Having a dedicated PPS space for this class that can be accessed to work on things with others is

like a virtual study hall." The recording function of the PPS was disengaged during all practice sessions, though the space could be monitored by the instructor at any time. Despite the logistical challenges presented by 70 students and 10 presentation groups and the need for independent scheduling of the groups, at no time did two groups practice simultaneously. If multiple group meetings had become an issue, a second virtual practice space would have been created.

Group work can elicit a variety of viewpoints from students, based on their educational pasts, including secondary school experiences in which group work may have resulted in poor outcomes. Whatever the preconceptions students bring to online group work, early support and assignment clarity can help to mediate resistance and demonstrate the potential of the e-learning environment in relation to interactive work with other students. The instructor should demonstrate how to use the technology to facilitate successful group communication and should provide examples of presentation tools.

The following remarks, made by students preparing the group assignment, highlight changes in their opinions of group work as supported by technology: "I like to visualize and have interactive chats with my professor and classmates. [It] makes me feel like I am actually a part of a class"; "I enjoy hearing the students' and professor's voices. It makes me feel much less isolated, and I become more interested in the material."

Early support requires the instructor to be available for questions and offer direct and timely support (including telephone calls) to students who are outside of their comfort zones. By creating an inclusive and connected e-learning environment, instructors can help mediate possible feelings of isolation among e-learners who are at a physical distance from each other and the teacher.

The diversity of schedules among working e-learners poses particular challenges for assignments that include group work. One student expressed concerns around the assignment: "The reason we choose to take [the course through] this delivery [method] is mainly the flexibility of being able to take our degree, all [the] while working and being able to manage our responsibilities." Despite the 24/7 meeting space and group discussion space, some students were disengaged from their groups. In such instances, early support of these individuals by the instructor was important and led to development of other strategies for reengagement and/or assignment modification. In general, when a problematic situation was identified early, the instructor discussed the norms of and expectations for group work, including contributions by all members. In the following passage, the student demonstrated this awareness: "I am willing to work with my partner on this and I want to be positive and make it work with my partner because that is the main purpose of the assignment, to be able to collaborate despite our differences." In a limited number of cases, assignment modifications—such as a one-on-one presentation with the instructor—were made to accommodate students who experienced difficulty with the group process; however, this was a rare occurrence, since early identification of and responsiveness to concerns generally resolved difficulties.

Presentation logistics in a large class can be daunting even in face-to-face teaching. They are especially complex in a web-based setting. Google Doodle, however, offers an efficient way for students to indicate dates and times for presentations. Through Google Doodle, the 70 students posted their availability. This information was used to construct a presentation schedule that, in the vast majority of instances, took into account students' individual scheduling needs.

A highlight of the experience was that each group presented to a live audience while the session was simultaneously recorded for later access. During most presentations, audiences ranged from eight to 20 students; however, through the combination of the real-time sessions and archived recordings, groups presented to approximately 60 co-learners. One student commented on the value of recording sessions as a way of achieving flexibility: "As a student, I was relieved that you were so understanding about the days in which I could not attend, and you found an alternative for me so I could participate a little after viewing the recorded session."

The diversity of presentation approaches was a highlight for the instructor, validating the potential of e-strategies in facilitating active engagement within groups and across the larger class. The students' creative use of images and sounds was testimony to what is possible in e-learning settings. One student commented on the presentation aspect of the course: "This is much more interactive than any other online class I have had. It has made the class more interesting so far." Some groups chose to use simultaneous video and audio; others encouraged audience participation with virtual surveys. White-board graffiti art acknowledged what the presenters were saying, while the use of icons communicated agreement or disagreement. Presentations delivered by multiple presenters who also used live chat tools pushed audience participation and engagement to levels not generally found in face-to-face classrooms of 70 students.

Requiring a large online class to participate in group presentations, the instructor risks negative attitudes based on students' prior experiences with group work and logistical and technical hurdles. Nightmare rather than inspired learning is a possibility (Wenger, 2004; Wenger, McDermott, & Snyder, 2002). At the same time, the reflections and student observations provided here are evidence that a so-called traditional presentation assignment can become a unique opportunity for student engagement, particularly when there is instructor involvement. One student commented that "[t]his type of interaction helps me to grasp and retain content easier and it reduces the anxiety of face-to-face presentation among groups." A learner can present him- or herself to a large group of people from the comfort of home—an example of the student engagement possibilities available through e-learning. Reflecting on their assignments after they had been completed, some students referred to the potential of e-learning and the assignment itself as transformative. In some cases, students who would never have chosen to present to a crowd were empowered to communicate with their many classmates through e-learning tools. Thinking about the students' professional development, it is worth noting that they explored technology not from a limited access position

but as moderators and facilitators, engaging with each other and becoming comfortable with a learning platform that they will take to future courses and endeavours. Comments by two students in the course confirmed the importance of connecting with others in the learning process: "I think it really gives the course a feeling of unity and a sense of classroom. As someone said in the session . . . I felt like I was just reading textbooks by myself . . . now I am taking a course within a group"; "This is what I imagined online would be like."

Instructors in e-learning contexts need to think beyond traditional teaching methods and evaluation approaches and tap into the imaginations of students through the new forms of engagement made possible through judicious use of technology. Significantly, such interaction is not something that "just happens." Rather, it is the outcome of conscientious pedagogy grounded in the best practices of scaffolding and instructional design for e-learning. Finally, reinvention of the self as an "e-teacher" is an important part of the educator's professional development if he or she aspires to support and challenge future learners who will, more than ever before, come to learning with experience of technology and an expectation that it will be an integral component of the learning experience.

Final Thoughts

There is no question that e-learning is here to stay. While researchers continue to discover the strengths, weaknesses, and benefits of e-learning, there is strong recurring evidence that scaffolding rooted in an informing pedagogy, supported by strong instructional design principles, and including diverse occasions for interaction is central to effective e-learning. Additionally, although this recipe may appear simple enough, its actualization requires resolve by teachers and learners alike, as well as strategic institutional, teaching, and learning supports. Educational innovation such as e-learning is not without its shortcomings and unknowns, in addition to strong opinions from those who feel fearful and/or threatened. Thus, as educators make their way in today's e-learning world, it is vital that they work from what is known—namely, that judicious planning coupled with openness to possibility is the strongest insurance for a rich and positive e-learning experience.

Because online learning in nursing education has been around for a while and frequently involves working adults, it is a practice field with history and lessons for others. As one example, two of the authors of this paper have been involved in online nursing education for at least fifteen years, from the time it first emerged on their campuses. As a second example, registered nurses in Ontario have been seeking baccalaureate-level education through online education before and since 2005, when the entry-to-practice requirement for Ontario nurses became a baccalaureate degree in nursing. In 2000, when the baccalaureate requirement was first announced, only 20% of all nurses in Ontario had graduated with a baccalaureate degree nursing diploma

(Council of Ontario Universities, May 2000), so universities were challenged to develop programs that would accommodate the busy personal and professional lives of nurses. Thus, in the late 1990s, the combination of Internet technology and nursing education became a powerful one. Today, nurses' pursuit of online educational opportunities continues as registered practical nurses seek baccalaureate standing, registered nurses undertake graduate studies and pursue nurse practitioner standing, and nurses of all kinds seek professional development and continuing education opportunities to keep up in today's quickly evolving healthcare world.

In closing, the experiences recounted in this paper and the noted history of online nursing education for working professionals comprise a rich repository of lessons about online learning for other professional practice areas considering or entering into e-learning for the first time. Given how nursing education includes theoretical and clinical learning in addition to standards and regulations, and how each becomes more complex in the online setting, those outside of the online nursing education field are quite likely to find solutions to their own challenges within the nursing literature. Nursing education has, therefore, made and will continue to make valuable contributions to adult, continuing, and professional education in the twenty-first century.

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Biographies

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Since 2010, Steve Cairns has been an instructor with the RPN to BScN Program in the School of Nursing at Nipissing University. He completed a BScN from McMaster University in 1994, a BEd from the University of Toronto in 2000, and a MEd from the

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Depuis 2010, Steve Cairns est instructeur auprès des infirmiers autorisés (RPN) du programme en sciences infirmières de l'École des sciences infirmières à l'Université Nipissing. Il a terminé un baccalauréat en sciences infirmières de l'Université McMaster en 1994, un baccalauréat en sciences de l'éducation de l'Université de Toronto en 2000 et une maîtrise en sciences de l'éducation de l'Université de la Colombie-Britannique en 2003. Ses intérêts combinés l'ont conduit à la flexibilité de l'enseignement en ligne, tandis qu'il poursuivait sa carrière d'infirmier à Muskoka, en Ontario.

Luke Durrer is an Instructional Designer at Nipissing University, where he dedicates most of his professional attention to the design and development of online and blended undergraduate courses. Luke's other interests are professional development for educators and various e-learning methodologies and tools, including mobile technology. Luke is in the final stages of completing his MEd. Prior to this, Luke earned a BEd from the Schulich School of Education at Nipissing University and a BA in Child and Youth Studies from Brock University.

Luc Durrer est un concepteur de cours à l'Université Nipissing, où il consacre l'essentiel de son attention professionnelle à la conception et au développement de cours en ligne et mixtes pour le premier cycle universitaire. Il s'intéresse aussi au perfectionnement professionnel des éducateurs et à divers outils et méthodes d'apprentissage, y compris la technologie mobile. Il achève sa maîtrise en éducation. Avant cela, il a obtenu un baccalauréat en sciences de l'éducation de la Schulich School of Education de l'Université Nipissing et un baccalauréat ès arts en études de l'enfant et de la jeunesse de l'Université Brock.