Perceptions of the Impact of Online Learning as a Distance-based Learning Model on the Professional Practices of Working Nurses in Northern Ontario

Perceptions de l'impact de l'apprentissage en ligne comme modèle d'apprentissage à distance sur les pratiques professionnelles du personnel infirmier du nord de l'Ontario

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Abstract

Nurses in Canada face diverse challenges to their ongoing educational pursuits. As a result, they have been early adopters of courses and programs based on distance education principles and, in particular, online learning models. In the study described in this paper, nurses studying at two northern universities, in programs involving online learning, were interviewed about their learning experiences and the impact of these experiences on their practice. The study led to insights into the factors affecting teaching and learning in distance settings; the complex work-life-study roles experienced by some nurses; life and work realities in northern settings; and the sustained importance of access enabled by online learning approaches.

Résumé

Au Canada, le personnel infirmier fait face à divers défis relatifs à l'éducation permanente. Les infirmiers et infirmières ont donc été parmi les premiers à adopter les cours et programmes appuyant les principes de l'éducation à distance et, en particulier, les modèles d'apprentissage en ligne. Dans l'étude que décrit cet article, le personnel infirmier étudiant dans deux universités du nord de l'Ontario, dans des programmes utilisant l'apprentissage en ligne, a été interviewé au sujet de ses expériences d'apprentissage et de l'incidence que celui-ci a eu sur la pratique des soins infirmiers. L'étude a permis de mieux comprendre les facteurs qui affectent l'enseignement et l'apprentissage à distance, les rôles complexes que jouent certains infirmiers et infirmières dans leur travail-vie-formation, les réalités de la vie et du travail dans les contextes nordiques et l'importance durable de l'accès que permettent les approches d'enseignement en ligne.

Introduction

While there is an established body of literature about the access that distance infrastructure can support, there is a gap in understanding the impact that distance learning can have on the actual practices of health providers. This study represents an effort to address this gap based on the distance learning experiences of nurses in northern Ontario, where the model used to bridge distance was online learning.

The objectives of the study were the following: (a) to explore the distance education experiences of nurses in northern Ontario, where the nurses studied through online learning; and (b) to explore the nurses' perceptions of the impact of their learning on practice. The online learning environment was conceptualized as an integration of pedagogy, instructional technology, and the internet (Carter et al., 2014).

Literature

Distance Education and Online Learning

According to Shale (1990), early forms of distance education claimed an existence involving physical separation between the teacher and the student. Today, with new educational technologies and new meanings of space and time (Carter & Graham, 2012; Fisher, 2009), distance education can be a response to more than issues of geography. It can be a response to psychological and social variables (Bates, 2008) and complex personal and professional lives. Equally important is that distance education has evolved dramatically from correspondence practices to technologically-mediated learning opportunities, including online learning.

Generally, online courses are asynchronous in nature, although increasingly, they include synchronous or real-time interactions. A course is asynchronous when students work through the course materials on their own time. There is no requirement to connect with classmates and/or the instructor at a specific time. Instead, students read, complete activities, make postings to discussion board, and complete self-assessment activities without having to "go to class" through tools such as web conferencing tools. When an online course is synchronous in nature, students do attend class through the affordances of web conferencing applications. While asynchronous courses tend to be more plentiful than synchronous courses, there is growth in courses that are largely asynchronous, but that include some level of synchronous interaction.
By contrast, the term blended learning is generally used to refer to a combination of online and face-to-face learning within the same course. For example, in addition to attending face-to-face classes, students do learning online through materials and activities hosted on a course site. A second way the term blended learning may be used is to describe the overall design of a program. In a blended program, some courses are online, while other courses occur in class or, in the case of nursing, in the clinical setting. One of the two universities involved in the study uses the term blended learning in this way. This point noted, the courses from the program discussed in this paper were fully online courses.

Special Considerations in Northern Geographies

Online and blended learning hold particular significance in northern Ontario. Northern

Ontario is characterized by geographical vastness: Although its territory covers almost 90% of the province, only 6% of Ontario's population live in northern Ontario (Ministry of Northern Development and Mines, 2012). The region is culturally, geographically, and linguistically diverse and includes many Francophone and Aboriginal communities. Aboriginal peoples comprise 12% and 20% of northeastern and northwestern Ontario respectively. In these same regions, Francophones constitute 25.1% and 4.1% of the population (Ministry of Northern Development and Mines).

Northern Ontario faces serious shortages in health human resources, with well documented shortages of physicians, allied health professionals, and, specific to this study, nurses. Nurses who work in the North contend with long driving distances, inclement weather, and poor roads (Killam & Carter, 2010). They often work in situations of expanded scope of practice and, frequently, their educational needs cannot be met within the immediate community (Killam & Carter).

Online Learning: The Student Perspective

In order to ensure quality learning experiences, program planners, instructional developers, and instructors aspire to capitalize on the social aspects of online learning, and balance them with pedagogical strategies that foster interaction, engagement, and, ultimately, satisfaction (Cobb, 2011; McCord & McCord, 2010). Interaction and engagement does not necessarily occur on their own: Rather, they are the outcomes of a process called instructional design (Baker, 2010; Kim & Hannafin, 2011).

Although many students appreciate the flexibility of online strategies, some students may struggle with them: Learning style differences and limited technical skills are recurrent limitations in the literature (Dorian & Wache, 2009; Perry & Edwards, 2010). Varying the technologies and activities in an online course can be helpful in generating satisfying learning experiences. For example, some students may benefit most from synchronous activity; others may be more successful with a blend of synchronous and asynchronous activities (Carter et al., 2014).

Online and Blended Learning: The Instructor Perspective

In the university environment, the uptake of online learning by instructors has been varied. Commonly cited reasons for this mixed response include workload, lack of experience, accessibility and connectivity issues, and lack of institutional infrastructure to support e-learning (Allen & Seaman, 2013; Kennedy, Jones, Chambers & Peacock, 2011; Ward, Peters & Shelley, 2010). At the same time, there is credible evidence of the authenticity of learning achieved through online learning (Ruggeri, Farrington, & Brayne, 2013), with success associated with pedagogical choices that work well with the selected technologies and the supports available to instructors (American Association of Colleges for Teacher Education, 2008; Miller, 2009). Above all, the measure of pedagogical and technical supports extended by the educational institution to the instructor emerges as a dominant message in the literature targeting instructors' perceptions and experiences of online learning (Carter et al., 2014).

Online Learning and Ontario Nurses

In 2005, the College of Nurses of Ontario implemented major changes in credentialing. The education requirements for nurses changed to a baccalaureate in nursing for Registered Nurses (RNs) and to a diploma from a college of applied arts and technology for Registered Practical Nurses (RPNs). A direct outcome of these changes was a proliferation of distance courses and programs for both groups of nurses.

This same time period corresponded with the rapid development of online learning and other forms of technology-supported learning, such as videoconferencing and webcasting, in Canada (Ontario Telemedicine Network, 2015). Given the previously noted educational needs of nurses, and this new way of supporting learning, nursing has been an early adopter in the development and delivery of online learning in the Canadian health education sector. According to the Canadian Association of Schools of Nursing (CASN, 2013), distance education infrastructure and tools were used in 53.5% of all baccalaureate programs as early as 2011. This level of use has only increased since then.

Although the literature highlights that distance and online learning models do facilitate access to education, little is known about whether or not this kind of learning impacts professional practice. Stated another way, in the context of this study, the question is as follows: Do the knowledge, skills, and attitudes acquired in an online course affect the work of the nurse? In this study, online learning as a form of distance education is explored in relation to its possible impact on the practices of working nurses in northern Ontario.

Theoretical Touchstone

A blend of socio-cultural and constructivist learning perspectives was selected as a backdrop for the study. According to socio-cultural thinking, students and teachers exist in a social group where each influences learning, while constructivists suggest that learners construct knowledge based on experience, knowledge, and perceptions (Mann, 2011; Yardley, Teunissen, & Dornan, 2012). Constructivists further assert that social reality is relative, relational, and always under construction. Taken together, these ideas align with how health professionals learn in continuing education settings: They are building on prior knowledge and do this work in the context of specific socio-cultural groups.

The Study

Design

In this study, nurses were interviewed after their online courses were completed and grades had been submitted. A semi-structured interview approach was used by two interviewers. All responses were aggregated in order to protect the identities of individual nurses. Standard protocols were followed in the conduct of the study which received ethical approval from Laurentian University and Nipissing University. Laurentian University is a medium sized bilingual (French and English) university; Nipissing University is a small sized English university. Both universities are located in northern Ontario and known for their expertise in online nursing education.

Sample

The sample was purposive in nature and generated through the researchers' existing networks and snowballing strategies involving universities in northern Ontario. Two levels of recruitment occurred: During the first level, a program manager at each university who was responsible for an online nursing program was approached to determine interest in the study, and identify course(s) aligned with the purpose of the study. Each program manager identified two possible courses.

After interest was confirmed with the program managers, a second level of recruiting occurred, involving identification of appropriate courses, connecting with instructors, and reaching out to actual students. Courses from each university were identified by the program managers as courses in which instructors would support student participation in the study. Because the universities involved in the study are small, providing detailed information here about the courses could reveal the identities of the instructors. Notably, when the researchers consulted with the instructors, they were in support of student participation, but did ask that the courses not be identified by title, nor described in detail. This shared, all four courses were senior level theory courses rather than introductory or clinically focused courses. Thus, at the time of data collection, the participants were experienced (rather than novice) online learners who would have had time to integrate some of their learning within their professional practice.

The nurses in all four courses were likewise returning nurse learners as opposed to undergraduate nursing students. At one university, the nurses were transitioning from RPN status to BScN status; at the second university, the nurses were transitioning from diploma to BScN status. While in future studies, there may be value in comparing the experiences of transitioning RPNs with the experiences of transitioning diploma nurses, this was not the purpose of the study. Instead, the purpose was to consider the general experiences of nurse-learners studying online, as well as their perceptions of the impact of this learning on professional practice.

Importantly, the courses targeted in the study were fully online courses. There was no face-to-face learning in any of these courses. At the same time, the programs from which the courses derived were blended in nature as discussed early in this paper, with clinical courses delivered in face-to-face clinical settings, juxtaposed with theory-based online courses. Interestingly, although the clinical courses were delivered in face-to-face clinical settings, they also included course sites where students could submit papers, make postings, and generally interact.

Data Collection

Nine semi-structured interviews of approximately one hour in length were conducted by the principal researcher and the research assistant. All nurse-participants were volunteers and received a token of appreciation for their time and willingness to share their experiences. Interviews were conducted remotely through web conferencing with telephone used as a back-up in the case of connectivity difficulties. Standard protocols for interviews were followed, such as ensuring that consent was received before the interview and reviewing the interview process before proceeding.

Five questions were explored in each interview and are provided below. The questions were based on the literature and assessed for content validity. Participants were encouraged to share other related ideas if they wished.

1. Tell me about your experience of being a distance learner. What course(s) have you recently completed as a distance learner?
2. Do you think that this experience has had an impact on your professional practice? Why or why not?
3. If you think there has been an impact, can you identify any specific development in your skills or knowledge as an outcome of the learning experience?
4. In order to ensure high quality distance learning for health professionals in Northern Ontario, what do you recommend?
5. Is there anything else you would like to share about distance learning and your work as a health professional?

Data Analysis

The dataset was analyzed according to the following steps: Data were reduced, findings were displayed, and conclusions were drawn and verified (Miles & Huberman, 1994). The two members of the research team reviewed the transcripts independently, while NVivo was used to search the larger dataset for frequency of ideas and emerging themes. The researchers agreed on final themes and representative statements for each theme.

Findings: Participants and Interviews

General Overview of Participants

The participant profile presented here is based on demographic data for the total population of nurses enrolled in the four courses, and is offered as high level contextual information. Greater detail about the nine interviewed nurses is integrated within the findings based on the interviews.

The nurse learners in the four courses lived in urban, rural, and remote communities from Ontario and Quebec, with the majority residing in northern Ontario communities. As for the type of community they worked in 57% reported northern urban; 37% reported northern rural; and 10% reported northern remote. The percentages exceed 100% since some nurses worked in more than one type of community. Experience in the nursing profession ranged from novice to expert. As users of distance-based technologies, 62.9% stated that their level of comfort with distance-based technologies was moderate to extensive.

Qualitative Findings

Six major themes emerged based on the data, and represented the nurses' insights into their learning experiences. Figure 1 presents the six themes, and pairs of related themes, under three broad titles: Making a Difference, Access, and Essentials for Success. In the following paragraphs, the themes are explored through representative statements made by the nurses.
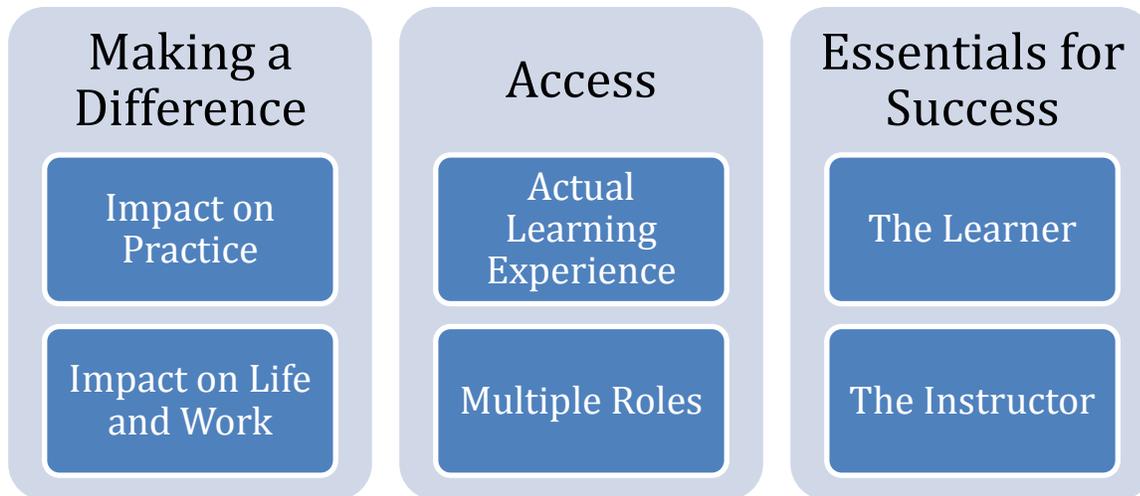
Figure 1. Thematic Representation of Findings

Making a difference. The two themes grouped under "Making a Difference" are (a) Impact on Practice and (b) Impact on Life and Work. The former reveals the impact that the learning achieved by the nurses has on practice, while the latter addresses the impact of technological and distance strategies on the broader realities of life and work for nurses.

Asked if the learning experience had an impact on practice, the nurses repeatedly and enthusiastically responded yes. Comments ranged from, "[i]t absolutely [does]…it absolutely upped my game" to, "[p]rofessional practice yeah, definitely it has – the review of nursing information and that kind of stuff, really enforced a lot of things for me, in my practice, especially a lot to do with research." In addition to identifying research as an area of particular impact, the nurses spoke about improved critical thinking skills and development of academic writing skills. A common comment made in the nurses' discussions of increased breadth in their nursing knowledge was that critical thinking skills and problem solving were "improved" and "encouraged," specifically, "in real life nursing situations/scenarios." They also commented on the personal learning and collaboration skills they acquired and how these skills were transferrable to the clinical setting. One nurse described her experience becoming a good learner and the independence this requires in the following way: "I do have to say though you have to be pretty dedicated and a big time self-learner, you really have to take it seriously and you have to take the time to learn." Another nurse connected her experiences of collaboration in her studies to her geographic situation and consequent isolation: "There was a lot of group [work] so we could connect a lot through that media. For me, it was absolutely valuable. It was great for my learning."

The nurses emphasized how technological and distance strategies are central to life and work, particularly among northern nurses: "I think it's [distance infrastructure] critical. I mean, the travel costs being what they are, the geography that has to be spanned." Similarly, these same strategies were directly linked to the opportunity to study while learning and working in northern Ontario: "I am located 4-6 hours from a college/university campus so distance learning is the only way possible for me to obtain my BScN degree while working full time."

Access. The two themes in the Access group (Actual Learning Experience and Multiple Roles) focus on the learning experience itself, and other roles held by the nurses, with specific emphasis on the parenting role. The first theme deals with the realities of geography, while the second highlights the demands that parenting plays in the lives of many nurses, the impact of parenting on the learning lives of the nurses, and how online learning is a valued option for them. Although there is an argument to be made that geography and multiple roles could be seen as two parts of the same theme—perhaps a broader theme called educational disincentives—the strength of the nurses' views on their multiple roles, with parenting as dominant among these roles, merits special consideration.

The nurses offered several insights into the need for educational experiences that use technology for nurses living and working in the north. The following passage underscores the limitations of face to face education in northern locales:

> [F]or northern communities, we don't have everything– it's not like living in southern Ontario, where you just drive to Toronto, for an hour drive or a couple of hours' drive, we're very isolated here…. The nearest city is eight hours away…[S]o it's really hard when you have to make decisions about your professional growth and education, because it involves you having to move most of the time.

Another nurse commented: "And so for me…distance education is much more familiar to me than actually attending a classroom….so that has been how I have navigated that education system. I'm married to an OPP officer and so we've had like all the northern placements." Finally, a nurse in a remote northern community commented on the isolation of her northern community: "Because I feel so isolated up here, it [online learning with synchronous learning opportunities] was absolutely by far my favourite way to learn. I felt like I was involved. I felt like, you know, I could put a face to my teacher…[and] my classmates." This same nurse indicated that any other kind of learning such as learning that requires her to leave the community would not be possible.

Many nurses discussed how asynchronous online education works for them given their responsibilities as parents. For example, one nurse described her online program as "an incredible opportunity. I was a teen mother. I had two children instead of going to post-secondary and, so once I had raised them all up and started another family…the whole experience has been one of opportunity." Online learning was also identified as facilitating "the opportunity to have equal time distribution between work, my home life and school." Online infrastructure and strategies was repeatedly acknowledged as enabling access to education for nurses with family responsibilities.

Essentials for success. The two themes in this group deal with teaching and learning as discrete, but related experiences in the online context. Across the interviews, the nurses spoke about the need for support for their instructors: "Support for the facilitator is so key." At times, this support was described as just-in-time technical support. The nurses also stated that instructors require pedagogical support so that they can optimize the capabilities of the online setting. In particular, the nurses commented on the importance of instructors knowing their students, including knowing their geographic locations, and not having a large urban centric

focus. Engagement, interaction, and regular communication patterns were noted as essential to teaching and learning success: "Learning was enhanced by good communication with instructors and making the course interesting." Conversely, a lack of communication was identified as a barrier to learning.

The nurses also conveyed consistent respect for the commitment of their teachers:

Stats, for example, is probably the hardest course I've ever taken and hopefully the hardest course I ever have to take. And that especially being a distance learner. However, the teacher who I had was absolutely wonderful and spent hours on the phone and hours on Skype with a whiteboard behind her trying to teach me.

Finally, there was clear agreement that instructors need a moderate level of technical skill. According to the nurses, when their teachers did not have this, the experience was difficult for both students and teachers.

The nurses offered insights into their learning in two main categories: (a) learning needs, styles, and strategies; and (b) considerations related to technology. In discussions of learning needs, styles, and strategies, the recurring word was "engagement." How engaged the nurses felt depended on personal learning needs, styles, and learning strategies implemented by the instructor and carried out by students. Several participants commented that asynchronous online learning offered flexibility that met their needs as working nurses. For some students, the reflection time afforded by asynchronous approaches supported nurses' learning styles: "I can work full-time and do this, and I sense that I've grown." On other occasions, the nurses commented on how they valued synchronous learning such as sessions enabled through web conferencing: "And then I think the collaborative pieces were incredible because you do have opportunity though looking from each other in a collaborative education model and I think that was probably the highlight for me attending that course." Other nurses remarked that group work was a challenge in the online setting. Audio talks were appreciated since the nurses could listen to them more than once and/or while "making supper for the family." The nurses acknowledged that accommodating diverse learning styles could be difficult in an online setting.

The nurses spoke about the importance of considering when, and when not to use technology. When the use of technology is selected to be an appropriate form of course delivery, careful decisions about which technologies to use are vital. One of the limitations of online learning identified by the nurses is that "experiential learning" is difficult to facilitate. Although group discussions can be supported, "the collaborative pieces were incredible…. I think that was probably the highlight for me attending that course." In general, the nurses did not emphasize a need for technical support in their responses.

While the nurses were not asked directly if their online learning experiences were better, worse, or the same as face to face learning, the majority of participants indicated that their learning was at a high level: "So, I mean, for people to think like, if online education is less than being on campus, I think they're wrong. I think it's a really good opportunity for people, especially in northern communities." Similarly, according to another nurse, "I think this program itself is very high quality…. [T]his forum in general is a great area to have…. Oh, but for high

quality [the] need to be able to interact with you on a forum like this is high quality. To be able to join and to be able to communicate and having different interactive areas as well."

Discussion

Returning to the primary areas of investigation in the study, two pictures emerge. The first pertains to the nurses' perceptions of impact on practice. The second is a representation of their learning experiences as a whole. Each area is discussed in relation to relevant literature and recommendations for future educational initiatives and research. This discussion will be especially valuable for nursing administrators, program planners, and instructional designers involved in the development of online courses for nurses.

Reflecting on the idea of impact on practice, there is strong research evidence that online learning is equivalent to and, in some cases, better than that achieved in face-to-face settings (Cook, 2009). Given this evidence, and the fact that the learners in this study were nurses, it is not surprising that transfer of new knowledge to the practice environment was reported. According to adult learning theory, it is important for the student to connect learning to work. When this occurs, the learning may be transformational; that is, learning characterized by critical thinking, reflection, and the development of new mental models (Johnson, 2008). In general, online courses provide many opportunities for students to reflect critically (Carter, 2008); share ideas of theoretical and practical value; and determine how new knowledge can be implemented in practice.

The limited number of options for professional learning noted by many of the nurses is significant. Based on this reality and nurses' need to study to advance their careers, it is possible that nurses have a heightened awareness of the importance of bringing new learning to practice. Although the greatest reported learning included the development of critical thinking skills, evidence-based decision making skills, and scholarly writing skills, the nurses' learning was by no means strictly theoretical. The nurses also explained how they transferred their thinking and decision making skills, and enhanced knowledge of clinical issues, to practice. They further described how the independence, persistence, and organization that online learning requires are valuable in practice. It is possible that these same attributes might lead to greater transference of learning than other kinds of learning do. Online learning further requires a learner to adapt. In nursing, adaptation is essential in the practice setting.

Some scholars might point out that there is a "chicken or egg" question in this study: While the nurses did report impact on practice, should this effect be attributed to their learning in general or to distance and online infrastructure? This question posed, the courses taken by the nurses would not have been possible—they would not have been accessible—without the architecture of distance and online learning. Thinking this way, weighing in on one side or the other of the chicken or egg conundrum reduces the importance of the question. What is important is that the learning that the nurses experienced was brought to practice. The combination of new content with increased organizational, independence, and adaptation skills made possible through online learning points to uniquely positive impact on practice.

The two dominant messages about the nurses' learning experiences pertained to engagement and support for instructors. As the literature suggests, a learning design process may

help an instructor to develop activities that lead to student engagement with new ideas and development of skills. When online learning occurs this way, the challenges experienced by some students are often resolved (Winter, Cotton, Gavin & Yorke, 2010). Additionally, careful design has been reported to help the student to pace learning and internalize knowledge (Baker, 2010; Kim & Hannafin, 2011). In line with these ideas, the findings in this study suggest that effective design and management of the learning process facilitate positive experiences for the student.

Instructors generally require the support of instructional designers and learning technologists. Through the guidance of an instructional designer and learning technologist, the instructor identifies what students need to learn, establishes goals, develops appropriate assessment strategies, constructs meaningful learning activities, and plans opportunities for generalization and application of the learning (Ginat, 2009).

Designing for online learning also includes implementation of easy-to-use supports and consideration of the life and work needs of the student group. Regrettably, these kinds of supports are not always available to instructors. It would seem that the nurses in this study felt that there is considerable work left to do in supporting instructors adequately. This message was shared repeatedly and is one that those responsible for program planning will want to consider seriously.

Returning to the theoretical touchstone used in the study, the nurses did appear to be engaged in constructivist learning. Consistently, they spoke about how they were connecting what they were learning theoretically to their professional experiences and how these connections resulted in new knowledge. While some of the nurses reported learning from each other, there were more mentions of independent thinking and learning, and connecting with instructors, than with each other. Because teamwork and a culture of human caring are at the crux of nursing practice, more research into how we can better support socio-cultural learning in an online setting is recommended.

Other possible areas for research include similarities and differences between the experiences of nurses living and studying in rural and smaller urban settings in southern Ontario and the same group of nurses in northern Ontario. Ongoing research into the impact that technical and pedagogical supports have on the competence and confidence of online teachers is also recommended. Research into perceptions of learning based on the level of support provided to instructors is also recommended.

Limitations

There were several limitations to the study. The first pertained to response rate. In order to increase participation, the research team amended the original incentive offered to participants for their involvement. The decision was shared with and approved by the two ethics boards involved with the study. The revised incentive did positively increase participation.

On occasion during the interview phase, the research team encountered difficulties with the web conferencing system and used the telephone instead. These instances of technical

difficulty were poignant reminders of the challenges inherent in all interactions enabled by technology.

Although the findings are specifically valuable for those involved in nursing education, as well as distance and online learning, they may or may not be transferable to other health education contexts. Still, the findings merit careful review by health education planners and providers in other health fields.

Conclusion

This study has revealed that, based on the perceptions of nurses, learning through online learning models does impact practice. While this study will benefit all health education planners and health professionals who are students, it holds particular value in geographic locations where access is a barrier to attendance at face-to-face courses and programs. It also holds specific value in relation to nursing education.

The study has highlighted the need for better and more supports for instructors. Staff members in educational development and online learning units are vital to the development of competent and confident instructors who teach with educational technology. Just-in-time supports for instructors are likewise important. Although similar supports would seem to be important for students, in this study, the nurses recognized the unique demands made on their instructors. Exploring the association between being well-supported instructors and student success is an area that merits further study. Understanding this possible link is important, since distance and online learning for health professionals who reside and work in rural, remote, and northern locales is on a trajectory of "more and better." In the words of one participant, "distance education is much more familiar to me than actually attending a classroom." Based on this reality, and the perception of impact on practice discovered in this study, it is critical that we do distance and online learning well in the health professions sector.

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